

FAR PART 150 STUDY UPDATE

Seattle-Tacoma International Airport
Seattle, Washington



Technical Appendix Two

Contents Appendix One:

Appendix One.	List of CAC/TAC Members
Appendix Two.	Community Involvement Plan
Appendix Three.	Minutes of CAC/TAC and Subcommittee Meetings
Appendix Four.	Written or Emailed Comments from CAC/TAC or Subcommittee Members
Appendix Five.	Summary of Open Houses, also Chronologically
Appendix Six.	Comments Received from Open Houses

Contents Appendix Two:

Appendix Seven.	CAC Report (Their White Paper)
Appendix Eight.	Land Use Subcommittee Recommendations
Appendix Nine.	CAC/TAC Recommendation Matrix
Appendix Ten.	Staff Recommendation for Flight Tracks
Appendix Eleven.	Comments Received on Staff Recommendation
Appendix Twelve.	Commission Action on Flight Tracks/FAA Response
Appendix Thirteen.	Announcement/Proof of Publication for FAR Part 150 Hearing
Appendix Fourteen.	Transcript of FAR Part 150 Public Hearing
Appendix Fifteen.	Written Comments from Hearing
Appendix Sixteen.	Response to Comments
Appendix Seventeen.	Port Resolution Adopting FAR Part 150 Study
Appendix Eighteen.	Other Comments Received During Study
Appendix Nineteen.	Port Resolution 3257
Appendix Twenty.	Forecast Appendix
Appendix Twenty-One.	SEPA Documentation
Appendix Twenty-Two.	Funding Paper
Appendix Twenty-Three.	Additional Noise Data
Appendix Twenty-Four.	Glossary
Appendix Twenty-Five.	Current Noise Abatement Program
Appendix Twenty-Six.	Community Sound Attenuation Requirements

Seattle-
International Airport
Tacoma

FAR Part 150 Study Update

**Seattle-Tacoma International Airport
FAR Part 150 Study**

**FINAL REPORT
JULY 2002**

**TECHNICAL APPENDIX TWO
Appendix Seven through Twenty-Six**

For further information:

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Appendix Seven. CAC Report

April 26, 2000

**PORT OF SEATTLE
SEA-TAC PART 150
CITIZENS' ADVISORY COMMITTEE REPORT
PREPARED BY CITIZENS' ADVISORY COMMITTEE**

The following report has been prepared by the members of the Citizens' Advisory Committee to the Port of Seattle's Sea-Tac Part 150 Noise Study. This document summarizes the position of the Citizens' Advisory Committee, independent of Port of Seattle staff's view of the process and its results. Additionally, we have provided information concerning the methodology scope, recommendations and conclusions of the Committee.

1. **OBJECTIVE** - The objective of the Citizens' Advisory Committee to the Port of Seattle's Part 150 Noise Study was to provide citizen and community input regarding:

- The impact of current Sea-Tac operations on communities
- Implementing PSRC direction for an expanded PART 150 Study.
- Opportunities for changes in Seatac operations to reduce community impacts
- Noise mitigation strategies for Sea-Tac

2. **METHODOLOGY** - The Citizens' Advisory Committee was managed by Port staff who prepared agendas and orchestrated the meetings. Throughout the process, Committee members were critical of the Port's overly structured and controlled management of both the meetings as well as the prioritization on the Agenda and the use of time to discuss various issues. Overall, the official Port process functioned more as a focus group than it did as a working committee environment.

In the beginning of this study there was a process of "brainstorming". The Committee was asked to list the items the members thought should be studied. Several flip chart pages were filled completely. In the process of changing from a temporary consultant to a permanent consultant team these proposed issues for study were assumed to be solid statements of objectives. Late in the process the committee was told the members had decided not to do this or that based on these same charts. Separate from the Port structured committee environment, many of the committee members began meeting independently to provide a forum where noise related issues could be discussed more freely without artificial time constraints and controlled meeting agendas.

Representation was sought from all the traditional PART 150 Study areas around the airport as well as all King County Council Districts and the City of Seattle. Some districts chose not to participate. Voting or polling occurred on some issues including flight tracks. During the meetings where the Committee deliberated flight tracks, some members continuously asked for more data, particularly concerning the Duwamish industrial corridor flight track. The minutes of the vote/poll on the north flow flight tracks reflected errors in who voted for what, but the total number of votes on each proposal is correct.

3. STUDY SCOPE AND LIMITATIONS

- Airport noise source and mitigation options were reviewed.
- Issues associated with Sea-Tac approach and departure related noise was reviewed, including flight tracks.
- The existing two-runway Sea-Tac airport was reviewed without consideration of future noise from a third runway.
- Expanded use of the Duwamish/Elliott Bay noise abatement corridor was not studied due to a lack of willingness by the FAA to pursue this matter.
- The Four Post Plan arrival and departure routing structure was not discussed.
- Noise issues related to schools were not discussed.
- Port funding mechanisms and the amounts of money required to accomplish mitigation projects were not discussed.
- Flight tracks decisions dominated the past year of the CAC, only the review phase was recent.
- Early in the discussions the Committee stated that **NO RECOMMENDATION** would be made without data regardless of the staff and consultant pressure to label our comments as "a recommendation".
- Interactions with other airports, their flight tracks and attendant noise impacts were not analyzed.

4. SUMMARY OF TOPICS REVIEWED AND RECOMMENDATIONS

A. NOISE MEASUREMENT AND DATA COLLECTION - Overall Port efforts regarding noise measurement, data collection and consultant evaluation of the data reviewed by the Citizens' Advisory Committee are well done. Specific observations include:

- The Port selected, competent consultants who performed quality work regarding noise evaluation matters.

Due to PSRC recommendation for an expanded PART 150 Study, the scope of the noise evaluation study went significantly beyond the scope of a normal PART 150.

- New noise measurement analytical tools were developed, including the "Time Above" measurement metric and impacts/day exceeding 75 SEL by location. to assist Committee members evaluating the impact of various flight track change alternatives.

FLIGHT TRACK REVIEW - The Committee reached consensus, in spite of key differences in perspective, on the flight track issues. Consensus being defined as "a collective opinion, general agreement". The split East turn would best be described as a reallocation and sharing of flight tracks. The fundamental issue of noise associated with flight tracks won't go away. Real data and criteria needs to be developed to further investigate the impacts. However in a Port of Seattle constrained environment this was not a priority.

The flight track review phase of the Committee's work was limited to the last few meetings held by the Committee prior to the completion of its work. The review process was difficult due to the need to develop alternatives for discussion that

would be viable from an FAA air traffic perspective. While the FAA was present at the meetings, input from the FAA concerning integration of proposed flight track changes with other air space issues was frequently not available during the meetings and resulted in Committee recommendations being modified, changed or not studied by Port consultants.

The Port of Seattle's flight track review process was very rigid, abbreviated and did not allow the Committee to openly discuss and "brain storm" solutions to the flight track problem. The Committee was restricted by the limited possibilities put forward by the FAA. As an example, the Committee unanimously agreed that dispersion of flight tracks on the East turn should be studied. The only possibility put forward by the FAA was the split turn ad 5 and 9 miles north of Sea-Tac Airport. The FAA did not cooperate in evaluating the Duwamish/Elliott Bay corridor option. The Port's efforts of involve the FAA in this were not effective and appeared to have begun too late in the process. Additionally, the manner in which the Port of Seattle dealt with public participation in the Committee's work dramatically reduced the ability of the Committee to effectively discuss and resolve recommendations regarding flight track changes.

Issues associated with the "Elma" and related south west flight tracks remain unresolved due to the lack of a solution proposed by the Port of Seattle that is acceptable to the close in communities. The Committee supports the expanded use of the I-5/Highway 99 Straight Out departure and the relocation of the west turn to the Port of Tacoma as potentially viable solutions to the current noise problems. There was not adequate time or data provided to seriously study this option that could possibly relieve some Des Moines/Federal Way communities by routing the flight tracks over water at a more southerly point.

The issues concerning the East turn remain unresolved due the lack of data on the capacity of the Duwamish/Elliott Bay corridor. The flight tracks over Des Moines and Federal Way remain unresolved due to the lack of substantial data on the numbers of people affected by the current tracks compared to the proposed tracks. Both the East turn and the South end tracks were hampered the limited options provided by the consultants.

FMS USE OVER NOISE ABATEMENT CORRIDORS - FMS should be utilized in noise abatement corridor situations.

FMS USE OVER RESIDENTIAL AREAS - FMS should never be used over residential neighborhoods.

SHARED VERSUS CONCENTRATED NOISE - Committee members felt that where there was no appropriate noise abatement corridor for departing air traffic, that noise should be scattered or shared among communities rather than concentrated.

A majority of the committee members supported the following flight track changes:

- **EAST TURN** - Traffic currently utilizing east turns north of Sea-Tac should be allocated as much as practical to a departure utilizing the Duwamish/Elliott Bay routing. The majority of the Committee felt traffic unable to safely use the Duwamish/Elliott Bay corridor should then be turned east, potentially using a split turn. The Committee believed further investigation of a split turn, as a noise abatement strategy was appropriate.

- **SOUTHERN DEPARTURES** - The Committee recommended use of the Auburn Valley route as a primary departure corridor. The Committee recommended use of the two track southern departure. This was a majority recommendation, not a unanimous recommendation.

Minority Opinion: The City of Federal Way and Tacoma have been on record in the past regarding the need to use a water or low population route for the current western departure that is over the cities to the North. The data prepared by the consultants for the turn over Des Moines shows that overall impact on people declines by more than 50% with a very small change in noise in Des Moines using a two (2) mile turn over the water. This eliminates a 10 mile low altitude flight over heavily populated neighborhoods including Des Moines along Highway 99, Federal Way, Northeast Tacoma and Brown's Point.

5. NOISE REMEDY PROGRAM - Committee members felt that some progress was made regarding the noise remedy program that will improve quality of life in surrounding airport communities. Progress and/or points of agreement include:

- Recognition that a distinction between rental and non-rental housing should be eliminated with respect to the prioritization of noise mitigation program expenditures.
- The Committee has recommended that eligibility for noise mitigation programs be based on existing noise levels and not on forecast future noise levels.
- The Committee has recommended that the Port increase the amount of money it is willing to spend to buy out existing mobile homes to the amount it would cost to relocate the existing mobile homes.

6. SEA-TAC SPECIFIC VERSUS REGIONAL AIRPORT SOLUTIONS - The Committee members early on asked that all regional airport noise and other related issues be considered in reviewing current and future Sea-Tac issues. While this request was reiterated on several occasions by many Committee members, the Port limited the scope of the Part 150 Study to Sea-Tac issues. It is important to note that this results in the following:

- Noise from Boeing field, Renton field, McChord Airport and other major sources is not considered in Sea-Tac's noise models, therefore, understating total noise impacts in other surrounding community areas.
- Options to shift air traffic volume to other regional airports were not considered.

- The Port of Seattle dismisses the need for a regional study of noise. The FAA indicated it cannot be done without the consent of the Port of Seattle. It should be noted that King County Airport (Boeing Field) has undertaken a preliminary study of noise impacts of communities which show flight tracks from both KCIA and POS.

7. **AIRPORT OPERATIONAL DESIGN CHANGES** - For the most part, the Port of Seattle and Committee members had an open and productive discussion concerning airport operational changes. The following points of consensus were reached by the Committee:

- **RUN-UPS** - The Committee recommended that the airport construct a hush house, and impose rigid curfews on run-up times, and significantly increase fines for carriers conducting run-ups during curfew periods.
- **GATE AUXILIARY POWER UNIT/AIR CONDITIONING SERVICES** - The Committee recommended that the Port install gate-side power and air-conditioning support equipment to eliminate the need for independently powered generators and air conditioning units.
- **AIR FREIGHT GROUND NOISE MEASURES** - Installation of fixed power services as opposed to the use of independent generators was recommended.
- **LOW APPROACHES** - The Committee recommended that the Port work with the FAA to eliminate the use of long and low ILS intercept altitudes.

8. **LAND USE AND BUILDING CODES**

COMMUNITY PLANNING- The Committee strongly recommends that the Port of Seattle release a committed final buildout plan for Sea-Tac Airport. This is a necessary precursor to the preparation of meaningful community development plans by neighboring municipalities.

- **GROUND NOISE ORDINANCE** - The Committee, strongly supported by the cities, recommends that King County's existing airport ground noise ordinance by (utilized) enacted by the City of Sea Tac as the basis for governing Sea-Tac ground noise in the absence of other stricter standards.
- **PROPERTY BUYOUTS** - The Committee is concerned about the impact that Port buyouts of private residences and other properties has on local jurisdictions. The Committee believes the Port should adopt the policy of selling the property back to developers with deed restrictions regarding the type of future development or find an alternative that results in the property remaining in the tax base of the local cities.
- **BUILDING CODES** - The Committee strongly recommends that building codes be modified to ensure more noise appropriate construction takes place in all areas impacted by Sea-Tac noise. This will require work by the Port of Seattle with local jurisdictions. Cities are mandated by GMA to develop 20 year plans. Realistically buildings constructed should have a longer life span than 20 years. Therefore it is imperative for the Port of Seattle to develop a

committed final buildout of Sea-Tac Airport to aid the cities in these GMA requirements.

9. FINANCIAL ISSUES - The Committee observed that the Part 150 process did not include enough discussion regarding the funding of various mitigation options. Below are specific observations of the Committee:

- At present the Port appears to have a noise mitigation budget of approximately 50 million dollars to cover all contingencies.
- Current noise mitigation requirements for multi-family homes alone are estimated at 150 million dollars.
- The Port at this time has not considered the use of all potential sources of revenue to promptly complete its noise mitigation programs. These sources of revenue include the Port's taxing authority, the use of passenger facility charge fees as well as the issuance of bonds.

10. SUMMARY AND CONCLUSIONS

A. The Port of Seattle's Citizens' Advisory Committee process did not adequately allow the Advisory Committee to explore, understand and negotiate creative consensus solutions to regional problems. The solutions discussed are the result of Port developed alternatives. The discussion was largely limited to Port recommended alternatives.

Sea-Tac Airport has a very significant impact on local communities, as evidenced by the tremendous pressure placed on the Citizens' Advisory Committee and on the Port of Seattle by local citizens. Flight track issues are fundamental in the review of citizen concerns regarding Seatac noise. Flight track issues are a combination of both absolute noise level as well as the frequency of Seatac operations over a given point on the ground.

Throughout the Committee's work, there were no flight track alternatives discussed that would completely resolve ground based noise concerns. It is the consensus of the Committee that the capping of current activity at Sea-Tac by not investing in development a additional runway capacity (third runway) is the only effective mitigation to increased regional impact from Seatac air traffic noise at this time.

11. RECOMMENDATIONS

A. Two key votes were taken on flight tracks:

- (1) By an 8:4 majority vote the Committee recommends to further study the split East turn in conjunction with increased use of the Duwamish/Elliott Bay corridor.
- (2) There was a majority vote **not** to recommend the turn to the south west over Des Moines.

B. The Citizens' Advisory Committee believes that the Port would benefit from, and the committee strongly recommends, the establishment of a permanent Citizens' Advisory Committee with clear operational procedures to serve to advise the Airport Manager.

C. The Citizens' Advisory Committee recommends that the initial work of a permanent Advisory Committee be the monitoring of the Port's implementation of the recommendations of the current Part 150 Committee process.

D. The Port should significantly increase the priority given to the funding of noise mitigation programs both on airport and the retro-fitting of structures off airport. This must include an increase in the funding mechanism to allow more timely execution of this commitment to the community.

E. The airport should put on hold all expansion activities until such time as it completes its mitigation obligation to the community under the Part 150 process and negotiates and establishes a noise abatement strategy with the Citizens' Advisory Committee as well as the Federal Aviation Administration.

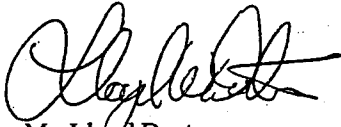
F. The Port should establish a more functional process with the FAA and the Citizens' Advisory Committee to further review and more creatively resolve flight track noise mitigation strategies, including:

Increased use of the Duwamish/Elliott Bay corridor should be undertaken in order to minimize the number of people adversely affected by the split East turn. Those planes that can safely be rerouted through the Duwamish/Elliott Bay corridor should be removed from the East turn traffic. Key to making this a viable solution is controlling the Duwamish/Elliott Bay traffic to assure that it follows a track midway between West Seattle and Beacon Hill until turning West and then is equidistant between West Seattle and Magnolia until turning South.

Increased use of the Auburn Valley route with as much of the traffic as possible overflying the lesser populated Kent Valley. The Committee is not in favor of a third southerly track that turns southwest over Des Moines.

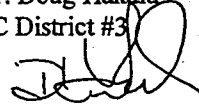
Increased use of other industrial or over water alternatives for air traffic routing, including the Port of Tacoma

Mr. Steve Mullet
City of Tukwila



Mr. Lloyd Doctor
City of Federal Way

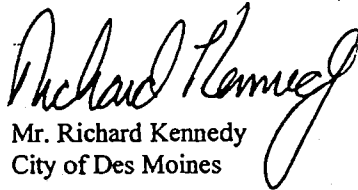
Mr. Doug Hakala
KC District #3



Betty Iwe
Ms Nancy Cleminshaw
KC District #4

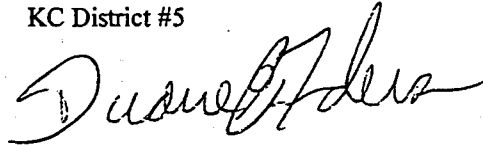
Mike Rees (alternate)

Ms JoAnn Schaut
City of Kent



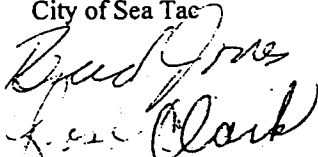
Mr. Richard Kennedy
City of Des Moines

Mr. Duane Anderson
KC District #5



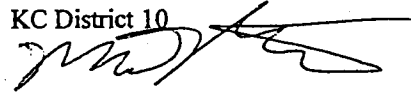
Mr. Mike Anderson
KC District #8

Mr. Bud Jones
City of Sea Tac



Ms Rose Clark
City of Burien

Mr. Mike Ranta
KC District 10



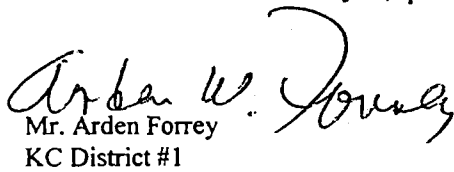
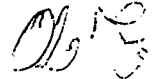
Mr. Hank Meyers
KC District 11

Mr. James Combs
City of Seattle

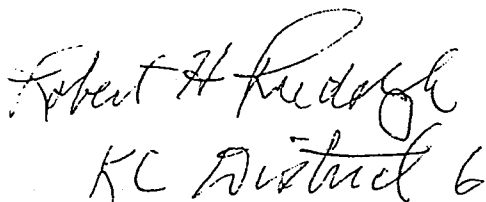
Ms. Connie Marshall
KC District 12

Mr. Guy Spencer *with comments under separate cover.*
City of Normandy Park

Mr. Al Furney
KC District #13



Mr. Arden Forrey
KC District #1



KC District 6

Statement of Part 150 Objectives by the SeaTac Citizens Advisory Committee

Introduction

The members of the Citizens Advisory Committee (CAC) were appointed by various governmental and community groups not only to serve the formal function of an FAA Part 150 submission but also in response to the Puget Sound Regional Council (PSRC) Action Item of 10 June 1996 which was based upon the Expert Arbitration Panel Report of 27 March 1996 that preceded the PSRC Resolution 96-02 permitting a Third Runway action by the Port of Seattle (POS). The role of the CAC is to provide effective specific guidance to the POS and its consultants in preparing the Part 150 study documentation such that all of the issues of major concern affecting the surrounding communities, including those noted in the Draft Action Item are not only addressed but also the actions taken were specifically documented. Following the organization of the CAC and the presentation of the initial sound monitoring and consultant work, the CAC members have decided to organize the individual issues identified by the member specific requests for information, and the actions requested by each one of those members, in terms of the documents which can partly serve the action plan of the combined CAC/TAC in carrying out the responsibilities of each member's appointment. These documented items can then be assigned to one of the Subcommittees (Data, Operations, Land Use Planning) that have been established to probe the different Dimensions to produce the response needed to meet the PSRC mandates and Part 150 requirements.

Moreover, the CAC has begun the documentation of the Part 150 Process as a general step in being able to address the long term evolution of the sequence of Part 150 studies that will be required at not only Sea Tac but also any other established airport that may have its study coordinated with Part 150 Studies being done at interacting surrounding airports and that lead to complex effects of air operations at specific site. As an example, the CAC has begun an initial proposal for a generalized "Information Architecture" that would serve all aspects of the long term studies of all aspects of environmental impacts involving SeaTac and other regional sites. This information architecture could be implemented as a designed information system by the recently adopted national and international informatics standards for system and software engineering into a local and regional information resource that would not only aid the immediate Part 150 study but would also enable effective regional planning for air transport capacity that includes land use and other community planning under the Washington State Growth Management Act. This information architecture uses the same current data that has been gathered in an ad hoc fashion during the present study and organizes it into a permanent well understood information resource for little more than the cost of the current ad hoc data gathering activities. This core has the potential of long term evolution in a systematic planned fashion that makes best use of regional resources as well as presents the information in the most effective fashion for defined regional purposes, including the present SeaTac Part 150 Study. This activity is one of the issues noted in the body of this CAC Objectives statement.

Seven key points have been assembled which combine and focus some seventeen initial issues initially listed. They are:

- 1.Noise Metrics, Methods of Data Collection and Information Architecture
- 2.Flight Track Corridors
- 3.Noise Remedy Program
- 4.Regional vs Port of Seattle (SeaTac International Airport) Solutions
- 5.Airport Operational/Design Changes, Including New Technology Implications
- 6.Land Use Planning and Building Codes
- 7.Financial Analysis of the Part 150 Program

Each point will be briefly expanded separately and the draft Information Architecture document, a snapshot of an evolving document, is enclosed as Attachment 1. But in order to address the PSRC Draft Action Items from the PSRC report, the seven points have been realted below to the PSRC Draft Action Items and the following Data Objects from the Part 150 Information Architecture should be used to develop the key issues concerning the CAC:

AL=Airline, SM= Sound Monitoring, AP-OPS=Airport OPs, AOPS=Air OPS,
AC=Aircraft, FP=Flight Plan, FT=Flight Track, LOC=Local

Part I PSRC Full agreement issues

Point	PSRC	IA Data	Topic
1	(2)	SM	Upgrade Sound Monitoring system
5	(4i)	AL,SM,AP-OPS;	Ground-related Noise
5	(5c)	AL,FP;	Minimize total night flights
5	(5d)	FP;	Minimize variances
5	(5e)	FP;	Minimize foreign nighttime flights
5	(5f)	FP;	Minimize use of Stage aircraft
5	(5g)	AP-OP;	Minimize nighttime run-ups
5	(6e)	FP, LOC;	Evaluate Preferential Runway Use
3	(7a)	LOC;	Begin Rapid Insulation program
3,6	(7d)	SM, LOC,FP,AC	Work PSRC for noise compatible land-use criteria
2	(7f)	LOC;	Modify Insulation program for low frequency noise
1-7	(8a,b)	Pt 150 Information Architecture;	Deal fairly and use communities for reducing noise impacts

Part II PSRC Partial Agreement Issues

4	(3)	LOC;	Sponsor Social Surveys
5	(4ii)	AP-OPS;	Minimize daytime engine run-ups
5	(5a)	FT, Flight Plan, AL;	Enforce compliance on Nighttime departure Noise abatement corridors
5	(6a)	FT,FP, AL;	Evaluate daytime Duwamish departure corridors
5	(6b)	FP,AL,FT;	Extend time of nighttime departure corridors
2	(6c)	FT,FP,LOC,AL;	Re-evaluate Minimum population exposure flight tracks
2	(6d)	FT,FP,LOC,AL;	Evaluate steeper depart profiles
3	(7b)	LOC;	Complete sensitive use public building noise insulation
3	(7c)	LOC;	Expand residential acquisition program
3	(7e)	LOC,SM;	Accelerate home insulation program
6	(8c)	LOC,FP,FT,SM;	Take effective action on incompatible land uses
5	(8d)	AL,FP,SM,LOC;	Link noise reduction to airport demand and system management procedures

Part III Implementation Options

All these Implementation Options would require the full capabilities of the Part 150 Information Architecture:

Part 150 Study
KCIA
The Puget Sound Regional Council
WSDOT
Alternative Implementation Actions
Monitoring

1. Noise Metrics, Methods of Data Collection and Information Architecture

1.1. Information Architecture. Key to all discussions is the ability to base arguments on objective accurate data. In order for the data to be useful it must be consistent, complete and systematic. In order for this to be the case, the Information Architecture (the various data structures, their inter-relationships and the representations of individual data items) must be designed to meet the needs of the investigation, both immediate and long term. If collaborations with other airports (such as KCIA) are to be undertaken, the data must be general so that it allows cross comparisons and combinations that will be needed in probing these larger situations. Thus the Information Architecture must be built as a system that can not only accommodate the present information objects of interest but be able to incrementally add new objects defined in a consistent fashion. Both US National and International Standards exist for best recommended practices to guide the general processes for information system engineering and point to appropriate detailed informatics standards to be used in implementation. Nevertheless, the regional bodies involved at this time must be organized to deal with the content and its meaning while the POS, its contractors, and the regional governmental bodies must arrange for the conditions under which the Information Architecture for this study becomes the core resource of an organization for supporting the much wider regional investigations that must follow. The draft for such an Information Architecture is included in Appendix 1.

1.2. INM Error Analysis. The current version of the FAA Integrated Noise Model (INM) must be analyzed for error propagation that produces uncertainty in calculated noise exposures. The magnitudes of the uncertainties of calculated exposures and the methods of estimation of uncertainty must be documented so that investigations into issues based upon INM calculated noise exposure can be objectively debated. Moreover, the comparison of calculated noise exposures with measured values recorded by the Noise Monitoring System, and its attendant uncertainty, will enable calibration of the model parameters and the establishment of their validity. These steps can then lead to examination of alternatives in particular discussions regarding policy and operational procedures.

1.3. INM Modeling Investigations. There must be an inventory of the particular yearly periods, atmospheric conditions and other situational parameters that characterize settings when noise exposure is particularly contentious and not well understood. These cases must be fully investigated by modeling after definition of the relevant parameters, and then correlated with measured observations.

1.4 Airport Noise Demonstration System. The arrangements must be investigated under which a configuration of the Dubbink Airport Noise Demonstration System can be acquired for regional use, including the SeaTac Part 150, in using the Proposed Air Operations, Proposed Aircraft and Proposed Flight Track Data Objects to explore and document alternatives discussed that relate to the issues noted in the rest of this document. There must be configuration management of the data files using this package and their link to the issues noted in this document and the identified output displays produced from the Information Architecture.

1.5 Study Graphics. The consultant should assign unique identifiers to each of the master printed graphics that have been produced and handed out to the combined CAC/TAC, or one of the three subcommittees, and then prepare and index that cross references each printed graphic (table or plot) to each of the relevant seven points of this statement in order that data already collected/generated can be associated with the dialog on these key points. Members could then ask for indexed graphics needed for discussion of a particular key point. Alternatives could be presented, decisions made on an alternative and the decision documented on the basis of the data collected.

2. Flight Track Corridors

2.1 Compliance with the Elliot Bay Nighttime Departure Corridor. The expert Panel appointed by PSRC found that compliance rates were poor. Suggestions included providing enforcement mechanisms. The CAC requests the Part 150 study recommend enforcement mechanisms to improve compliance.

2.2 Flight Management Systems (FMS) Using Global Positioning Satellite (GPS) and Related Technology. These technologies permit aircraft to follow more accurate flight tracks when approaching or departing airports. The CAC requests the Part 150 Study should be used to the fullest extent possible for noise abatement corridors and not at all on residential corridors.

2.3 East Turn Scatter Plan: With respect to the East Turn, which primarily overflies residential areas, a scatter procedure should be evaluated which would reduce the excessive noise impact on any one community and promote fair sharing of noise among Seattle and Eastside communities.

2.4 Minimum Population Density Flight Tracks. The south flow arrival stream parallels the existing I-5 Corridor. The CAC requests the Part 150 study provide a comparative analysis of the current route with routes shifted toward the I-5 corridor.

2.5 Modification of the 4-Post Plan South Flow Route. The FAA has tentatively designated this as the "Southern Departure Abatement Program". The FAA letter date 4 November 1998 states this is being studied in concert with the current Part 150 study and that "In the event the group wishes to pursue this alternative departure procedure they need to coordinate their recommendation with the Port of Seattle." The CAC requests the Part 150 study consider this alternate route.

3. Noise Remedy Program

3.1. Recommendations for modification of Noise Remedy Program (NRP) eligibility area including, but not limited to, boundaries that enclose the INM 65 LDN and 60 LDN contours.

3.2. Implications for funding of school noise insulation programs.

3.3. Implications regarding and special considerations for considering Hospitals, Churches and Retirement Facilities.

4. Regional vs Port of Seattle (SeaTac International Airport) Solutions

4.1 An Analysis of SeaTac/KCIA must be undertaken as a Regional subsystem and the role must be defined that this subsystem plays in a full regional system. This region may include either Washington State or have multistate components that contribute to an integrated regional program of air transportation services. Look at the SeaTac/KCIA collaborative efforts as an initial model for such an analysis so that the documentation of such studies could demonstrate the contribution of regional alternative solutions to the impact of aviation on surrounding populations.

4.2 The SeaTac CAC requests a combined SeaTac and Boeing Field Integrated Noise Model (INM) Noise Contour Map to compare with that for SeaTac only.

5. Airport Operational/Design Changes, Including New Technology Implications

5.1 Curfews.

5.2. Fines/Enforcement.

5.3 Ground Noise - Runups and Health Effects by KC Health Dept.

5.4 PSRC Expert Panel recommendations for Operational Changes at SeaTac. These should include the following sections in the part on Recommendations on Which There is Disagreement:

- 3 Sponsorship of Social Surveys
- 4ii Minimal Daytime Run-ups
- 5a Enforce compliance on nighttime Noise Abatement departure corridors
- 6a Evaluate daytime Duwamish departure corridors
- 6b Extend time of nighttime departure corridors
- 6c Re-evaluate minimum population flight tracks
- 6d Evaluate slope departure profiles

The CAC requests that King County Maps be prepared with one half mile grid overlays that contain the population, the average SEL and Time above the 55, 50, 65, 75 dBA levels to be used in discussion of this issue.

5.5. What is on the horizon of proposed or impending technological and other developments that need to be considered in the course of the Part 150 study? Members of the CAC are nervous concerning impacts of recently reported improvements in air navigation technologies and their implications as far as noise impacts on nearby populations. For example, do any of the proposed changes involve increases in flight activity at Sea-Tac? If so, how? New Flight tracks? Where? What are the proposed changes in flight procedures? What noise abatement procedures have been adopted for these new procedures? Provide comparative noise exposure maps (NEMs) and analyses for the alternative procedures to allow CAC to understand the implications of the proposed changes.

5.5.1 New FMS systems on aircraft

5.5.2 Implementation of new flight procedures into Sea-Tac using GPS. See recent NASA/FAA study of LAAS approaches at airports.

5.5.3 Impacts of Cat II and Cat III GPS systems at Sea-Tac (See GPS risk analysis study produced by Johns Hopkins Univ.

5.5.4. Are there other changes contemplated at Sea-Tac? What about the expiration of MII leases in December 2001? How will this affect traffic activity at SeaTac and the noise exposure conditions for populations affected by air traffic?

6. Land Use Planning and Building Codes

6.1. Investigate the runup incidents and the implications of the King County Ordinance prohibiting noise levels exceeding a set level.

6.2. How to implement the Noise Budget for Actual Noise Impacts that Exceed Forecasts.

6.3 Loss of Tax Base. Compensation should be considered for loss of tax base associated with noise impacted property locations. For example, the loss due to property acquisition for Airport Transition Zones (ATZs). CAC requests that Land use and evaluation maps be prepared for evaluation of this issue.

7. Financial Analysis of the Part 150 Program

7.1. Management/Policy Process.

7.2. Funding Sources.

7.3. Financial Plan for Implementation. The POS plan for implementation of noise insulation for impacted areas has fallen far behind. In 1982 the POS found over 20000 residences were exposed to noise levels above 65 dB DNL. To date the POS has insulated around 6000 homes. FAA policy regarding eligibility for funding noise insulation programs has been clarified recently with the FAA now agreeing that homes in areas exposed to noise levels of 60dB DNL and above are eligible for federal programs. There are currently x000 homes exposed to noise levels of 60 dB and above. Passenger Facility charges (PFCs) for example can be used to fund noise insulation programs. State law has numerous sources available to a Port district to provide funds for noise insulation. So far the POS has taken no steps to utilize resources available under State law.

7.4 Financial issues for dealing with Mobil Home Dwellers. The CAC recommends a dedicated funding source be identified for long term assistance to noise impacted mobile home owner/dwellers.

Summary and Recommendations

The CAC dialog is an ongoing one but this document is intended to provide the full CAC/TAC SeaTac Part 150 study with a clear set of fundamental issues that the CAC members feel must be achieved if not only real progress toward mitigation of the current configuration of the airport is to be achieved but also, in addition, an objective body of fact is to be established that will aid investigation into any proposed configurations. These configurations may include the currently proposed "Third Runway", even though it may be beyond the time frame of the current study, but certainly of interest. As a package, all of the key points are essential in an effort that must consider all of them together if the effort is to both accurately document the full problem and articulate an action plan. That action plan must not only make best use of the identified resources for dealing with the problem but also have real and substantial impacts in improving the situation. The CAC members, therefore, state their combined interest in seeing that the SeaTac Part 150 study considers all of the key points and that it documents its deliberations on each point.

The individual members, as noted below, have agreed that this statement fairly represents the common issues of concern of the CAC participants and that it contains some issues of particular interest to the community and constituency from which each member may have been appointed.

Statement of Agreement by CAC Representative Members

I hereby state my agreement with the contents of this document, except as noted below.

District Name	Member	Signature	Comments
8	Mike Anderson		
10	Jules Bloomenthal		
Burien	Rose Clark		
City of Seattle	Jim Combs		

community and constituency from which each member was appointed.

Statement of Agreement by CAC Representative Members

I hereby state my agreement with the contents of this document, except as noted below.

District Name	Member	Signature	Comments
8	Mike Anderson	<i>Mike Anderson</i>	
10	Jules Bloomenthal	<i>Jules Bloomenthal</i>	Point 2.2 should not recommend FMS for the East form (or for any residential flight track)
Burien	Rose Clark	<i>Rose Clark</i>	
City of Seattle	Jim Combs		
Federal Way	Lloyd Docter	<i>Lloyd Docter</i>	I support Part/Consultant review of the cost and time feasibility of completion
2	Arden Forrey	<i>Arden Forrey</i>	
13	Al Furney	<i>Al Furney</i>	
3	Doug Hakala	<i>Doug Hakala</i> 5-19-99	APPX 1 VIEWED ONLY AS ONE PLAUSIBLE MODEL.
4	Betty Ivie	<i>Betty Ivie</i>	
City of SeaTac	Bud Jones	<i>Bud Jones</i>	
Des Moines	Richard Kennedy	<i>Richard J. Kennedy</i>	
Tukwila	Steve Mullet		
6	Robert Rudolph	<i>Robert H. Rudolph</i>	
Kent	Joanne Schaut		
Nomandy Park	Guy Spencer	<i>Guy S. Spencer</i>	

APPENDIX 1

17 February 1999

An Enterprise Domain Information Model
For An FAR Part 150 Project
SeaTac

Prepared by the Citizens Advisory Committee

Purpose:

Federal Way Lloyd Docter
2 Arden Forrey
13 Al Furney
3 Doug Hakala
4 Betty Ivie
City of SeaTac Bud Jones
Des Moines Richard Kennedy
Tukwila Steve Mullet
6 Robert Rudolph
Kent Joanne Schaut
Nomandy Park Guy Spencer

Revision History:

Version 1.0 on 20 May 1999
2.0 on 2 July 1999
2.1 on 14 July 1999
2.2 on 9 August 1999
9 Aug 1999

An Enterprise Domain Information Model For An FAR Part 150 Project SeaTac

Prepared by the Citizens Advisory Committee

Purpose:

The purpose of this architecture is to manage environmental aspects, especially - but not limited to - noise, due to aircraft operations around airports. Aircraft, especially commercial, operate from airports where these operations cause environmental effects and the information about these environmental effects is used to manage activities that mitigate these effects. In order to understand what effects occur and what steps may be taken, an information architecture that documents the inherent meaning of the information about these environmental aspects must be created in a rigorous fashion in order that the range of foreseen and unforeseen questions may be posed in terms of the data (observations and measurements) that are relevant to a given question. This document proceeds to describe such a rigorous information architecture.

Background: Airports serving commercial air carriers have over the last twenty years have carried out projects in accordance with FAR Part 150 in maintaining eligibility for federal funds for Noise Remedy Programs applicable to close in areas around such airports. The major focus has been preparation of Noise Exposure maps which are used to identify properties for subsidized noise insulation. In reality there are many aspects, both close in and farther out, that make the effort much more complex. Land use and land use planning with surrounding communities is conducted only in a rudimentary fashion and the influence of other nearby airports is dealt with only simplistically because of the lack of an information base directed at these questions. Moreover, at each location there is no long term database to document changes in community structure over time and the influence of an airport on these changes. Furthermore,

each succeeding community group starts all over again to learn about both the process and the problem. This learning is burdened by the lack of the long term database. Even further, one community never benefits from the experience of another and has no idea of a common set of data that might enable such comparisons. In an era of information this is clearly untenable when major improvements in information services jointly usable by both airport operators, community groups and governmental bodies can be provided that make the utilization of resources by each far more effective and economic.

This document seeks to provide not only an ad hoc documentation of the data needed by the 1997 SeaTac Part 150 study but also a formal model structure that is implementation independent and internally as logically consistent as the inputs allow. The casual user should understand that this structure is intended to help identify ambiguities and inconsistencies in the uses of the data for the purpose of managing the environment so that these questions can be answered. It is intended to be a central information resource for all stakeholders in identifying and characterizing questions relating to the region and then formulating regionally meaningful solutions in an open objective fashion understandable by all stakeholders. This information base would then enable both the comparison with other sites and the ability to address complex questions resulting from development of large regional solutions to air transport service problems that could not be addressed without such an information architecture. Additionally, it could act as a model for national consideration of common data and procedures for managing Part 150 projects in the US or in analogous international situations. It would allow systematic engineering of this resource as an information system adhering to best recommended national and international practices during its full lifecycle of many years and it would remain a recognized quality system. Finally, it would allow common strategies of education for citizen participants, either locally or elsewhere, about the issues inherent in the Part 150 studies and subsequent iterations of such projects at either this or other locations.

The Familiar View:

This view is composed of the conceptual entities about which we naturally think when we address an activity of this complexity. We include the identified usual data objects and their data items that characterize those entities as a way to orient our thinking about the Part 150 Project "Enterprise". Later we will apply these representations to the Logical View that contributes to a global view of the entire problem. This approach will enable us to relate this project to other organizational activities such as the air traffic control system

Stakeholders: The individuals or organizations affected by or involved in aircraft operations.

- (Port of Seattle) Airport Operations
- Cities Surrounding Airports
- County Government
- State Government
- Community Associations Area Residents
- Airlines
- Aircraft Manufacturers
- FAA
- Healthcare Researchers
- School Districts
- Hospital/Healthcare Facilities

Data Objects: The conceptual entities about which data are captured.

- Aircraft
- Proposed Aircraft
- Aircraft Model
- Airline
- Airport
- Air Operation
- Proposed Air Operation
- Airport Operation
- Flight Track

Proposed Flight Track
Sound Monitoring Location
Sound Measurement
Weather
Property Location
Property Occupancy Type
Structure
Noise Metric
Noise Complaint
Literature Reference
Document Location
Property Assessment
City Agency
Community Group
Healthcare Research Study

Object Detail:

AIRCRAFT

Aircraft Identifier
Aircraft Type->Aircraft Model
Current Aircraft Operator

PROPOSED AIRCRAFT

Proposed Aircraft Identifier
Aircraft type
Proposed Aircraft Operator

AIRCRAFT MODEL

Aircraft model name
Abbreviation
Minimum take-off weight
Maximum Take-off weight
Engine type
No passengers

AIRLINE

Name
Airline code
Noise Control Official
Noise Control Official address
Noise Control official phone

AIR OPERATION

Air operation identifier
Airport->Airport
Air Operation Datetime
Air Operation Type
INM Flight Procedure
INM Departure Stage Length
Aircraft Identifier->Aircraft
Aircraft Registration Number
ARTS Aircraft Type
ARTS Raw Aircraft Type
OAG Aircraft type
INM Aircraft Type
Aircraft Class

Airline->Airline
Airline Class
Flight Plan ID
Flight Track Identifier-> Flight Track
Destination/Origin
Inbound/Outbound
Direction
Minutes Different from OAG
Runway Assigned
Weather ID
Beacon Code
Flight Control Attributes (eg FMS)
Datetime of First Flight track Data
Datetime of Last Flight track Data

PROPOSED AIR OPERATION

Proposed Air Operation alternate Identifier
Airport->Airport
Proposed Aircraft Identifier
Proposed Flight Track Identifier
Destination

AIRPORT

Airport Name
Airport Code
Operating organization
Number of Runways
Number of air operations/yr
Number of passengers/yr
Noise Program description
Nearby airports (M)->Airport
Airlines using (M)->Airline
Airport Operation (M)->Airport Operation

AIRPORT OPERATION

Airport Operation Identifier
Airport->Airport
Airport Operation Date-time
Airport Operation Type
Airport Operation Description

WEATHER

Location Identifier
Datetime
Winds Speed
Wind Direction
Temperature
Humidity
Pressure
Altitude Density
Sky
Wind Gusts
Visibility

SOUND MONITORING LOCATION

Sound Monitoring Station ID

Coordinates
Monitoring equip configuration

SOUND MEASUREMENT

Sound Monitoring Station ID
Time of measurement
LEQ Aircraft
LEQ Community
LEQ Total
LMAX during hour
L1
L5
L10
L50
L90
L95
L99
Lmin
Second missing
LEQ Final Airport Aircraft
LEQ Final Other Aircraft
LEQ Community
Events Total
Events Airport
Events other Airport
No Seconds in Hour above 85Db
No Seconds in Hour above 80Db
No Seconds in Hour above 75Db
No Seconds in Hour above 70Db
No Seconds in Hour above 65Db
No Seconds in Hour above 60Db
No Seconds in Hour above 55Db
No Seconds in Hour above 50Db
No Seconds in Hour above 45Db
Overload During Hr
Underranges during Hr
Overranges During Hr
Percent Time During Hr Active
Use Hr to calculate daily Noise Status

SOUND FLIGHT EVENTS

Sound Event Identifier
Event Type from ANOMS
Event Group
Event Profile
Datetime of Maximum dBA
Duration in seconds
Duration Start-to-Peak in seconds
Maximum 1 sec DBA interval
SEL
SEL Energy
dBA threshold value
Aircraft Identifier
Flight Track Identifier
Duration of SEL above threshold
Duration of Event above threshold

Event TA-105 dB
Event TA-100dB
Event TA-95 dB
Event TA-90 dB
Event TA-85 dB
Event TA-80 dB
Event TA-75 dB
Event TA-70 dB
Event TA-65 dB
Event TA-60 dB
Event TA-55 dB
Event TA-55 dB
Event TA-45 dB
Ground distance site of closest XYZ track point
Altitude of XYZ closest point
Time between event and closest XYZ time point

FLIGHT TRACK

Flight Track Identifier
Aircraft Identifier->Aircraft
Airport->Airport
Air Operation Identifier
Datetime of commencement
Runway used
Time interval
X Coordinate
Y Coordinate
Z Coordinate

PROPOSED FLIGHT TRACK

Proposed Flight Track Identifier
Proposed Aircraft Identifier->Aircraft
Airport->
Air Operation Identifier
Datetime of Commencement
Runway Used
Coordinates (M)

PROPERTY LOCATION

Property Identifier (M)<-----|
Aggregated/Individual Parcel Category |
Previous Included Parcel Identifiers (M)-----|
Location Coordinates
Street Address of Property
Associated Community Group->Community Group
Area of Property
Type of Occupancy-> PROPERTY OCCUPANCY TYPE
Number of Residents on Property
Owner name (M)
Date ownership registered
Date Ownership transferred
Type of Transfer
Sale Price
Description of property
Comments about property
Structure Identifier (M)

Type of Structure->STRUCTURE TYPE
Area of structure
Date Constructed
Date Modified
Type of sound Insulation
Value of Sound Insulation
Program Installing insulation
Date of internal Sound measurement/calculation (M)
 Type of sound measurement
 Level of internal sound measurement/calculation
 unit of internal sound measure/calculation
 Method of sound measurement
 Instrument of Sound measurement
 Conditions of sound measurement/calaulation
 Person making measurement
 Comments
Current attenuation index
Attenuation Index calualted date
Number of persons living in structure
Number of persons working in structure
Datetime of external sound measurement (M)
 Type of sound measurement/calculation
 Level of external sound measurement/calcaultion
 Unit of external sound measurement/calculation
 Method of measurement
 Instrucment of measurement
 Conditions of Measurement/calculation
 Coordinates of measuremnt
 Person making measuremnt
 Comments
Datetime of Air-property measurement (M)
 Method of Sample collection
 Method of constituent measurement
 Constituent (M)
 Constituent Level
 Constituent Unit of measurement

(M)= Multiple values

PROPERTY OCCUPANCY TYPES

Occupancy Name

STRUCTURE TYPE

Structure type name

NOISE METRIC

Noise metric Name

Abbreviation

Rationale

Reference >LITERATURE REFERENCE

NOISE COMPLAINT

Date-time of complaint

Complainant Location

Complainant Text

Candidate Flight Tracks (M)->FLIGHT TRACK

Staff receiving person

LITERATURE REFERENCE:

Document Name
Document Identifier
Document Description
Document Author
Sponsoring Organization
Document Location (M)→Document Location
Keywords (M)

DOCUMENT LOCATION

Location name
Address
Phone

PROPERTY ASSESSMENT

Property Identifier→Property Location
City agency assessing→City Agency
Date of assessment
Method of Assessment
Source of Assessment
Assessment ID
Value

CITY AGENCY

City
Agency name
Agency Phone

COMMUNITY GROUP

Community Group Name
Community Group Phone

HEALTHCARE RESEARCH STUDY

Healthcare Research Study Name
Study Sponsoring group
Description
Report Referencing→Literature Reference

Processes: Functional activity associated with airports or aircraft operations

A/C Arrival
A/C Departure
Flight Plan Filing
A/C Maintenance
Flight Track Recording
Sound Monitoring
Sound Sensing
Flight Control

Data Sources

The Sound Measurement Process:

Measurement
 Airport Event
 Structure
 A/C operation->

Sensor

Longitudinal----->
 sound wave
 (sound pressure vs time)

Instrument

Filter
 (octave)+integration
 V
 Interval average
 Sound pressure
 V
 Scale factor
 (Db, DbA,DbC)->
 point record

Sound

Data

Time

Location
 (M)
 Date-
 time
 (M)
 Sound
 Pressure
 Db
 (Unwtd)
 DbA
 DbC
 Air
 temperat
 ure
 Wind
 Directio
 n
 Wind
 Velocity
 Humidit
 y (other
 relevant
 paramet
 ers)

A/C flight event-----> Flight ID (M) [etc]

Data Uses

For a particular locale, the specific questions that may be asked during a Part 150 Project may be quite varied. Nevertheless, different constellations of the data within the information architecture are used in addressing these specific questions. Illustrating this situation are the questions that are being asked in the SeaTac Part 150 study. These general data can be phrased in terms of Purposes, Data Displays and Contributing Data. The Purposes may be served by general Data Displays and each Data Display may use several Contributing Data.

PURPOSES:

1. Validate standard INM and elaborate assumptions
2. Evaluate effectiveness of operations noise mitigation options
3. Evaluate noise exposures in neighborhoods
4. Evaluate noise annoyance in neighborhoods

5. Evaluate Noise remedy alternatives in Program boundaries
6. Evaluate land use planning methodologies/programs
7. Evaluate alternative air capacity planning strategies
8. Depict the data gathering process in terms of properties, measurements, raw data structures (see above)

DATA DISPLAYS:

	Display type	Contrib data	Purposes
1. Calcd Noise exposure maps	Contour map	1	1,2,3,5,6
2. Measured Noise Exposure maps	Contour map	7,8	1,2,3,5,6
3. dBA/dBC by A/C+engine type	Bar Chart/Contour	7,8	2,3,4,6,7
4. A/C increment maps for flight tracks	Map		1,3,4,7
5. Measurement Station locations	Map	7,8,9,10	1,2,3,4,8
6. Site Lmax, SEL, dttm interval, # Events	Table	5,6,10,11	2,3,4,5,6
7. Site TA, SEL, dttm interval, A/C typ, #Ev	Bar chart	3,4,9	3,4,9
8. Site LDN24, LDNamb, dttm interval	Bar chart	13	2,3,4
9. Site dBA, dBC vs time (1 sec)	Chart	7,8,12	2,3,4
10. Community Exposure	Table	3,9,13,14,15,16	2,3,4

CONTRIBUTING DATA:

1. dBA-TI
2. dBC-TI
3. SELAev-TI
4. SELCev-TI
5. SELAev/Evnum
6. SELCev/Evnum
7. dBA 1 sec
8. dBC 1 sec
9. TA-lvl
10. EVnum-TI
11. Lmax (Event Maximum Db)
12. SPL (Sound Pressure Level)
13. LDN Day/Night Average DbA over named interval
14. Community GroupProperty
15. Population
16. Number of Events

The (Abstract) Logical View:

A Part 150 Study is defined as an Airport having surrounding Airports each with potentially similar attributes and which could be characterized using the same domain information model as the subject airport. Each Airport has an operating organization which includes both Air Operations and (non-flight) Airport Operations. It hosts Airlines which operate Aircraft of various Aircraft Types out of the airport. Each Airport conducts its sound monitoring at Sound-Monitoring Locations resulting in sound level measurements using various Noise Metrics. Each Airport also conducts its Air Operations using Airport Traffic Control Procedures that include Flight Plan filing and Air Traffic Control (ATC) Flight Track recording. This is coordinated with FAA Air Route Traffic Control at National/Regional/Terminal Centers. The Airport is surrounded by local Property Locations, possibly having Structures, which are within Local Community Jurisdictions. Each Local Community Jurisdiction conducts its own land use planning and permitting.

Each entity above is involved in Processes which have Part 150 Information Services that involves the data attributes that characterize each entity but which are subject to constraints and responsibilities which must be satisfied.

November 29, 1999

Dear CAC Members,

Thank you for your document titled *Statement of Part 150 Objectives by the Sea-Tac Community Advisory Committee*, dated August 9, 1999. The attached table has been prepared by the Part 150 consulting team as a draft response to your Objectives paper. You have indicated that your document has two major purposes: to highlight issues of significance to the Committee, and to track the Study's progress on these issues.

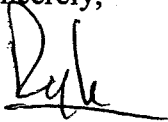
You have also emphasized that your document is iterative and may be amended as the Study moves towards completion. Although your document is not a final position paper, it is sufficiently developed for you to have requested a response from the consulting team.

In this spirit, our response(s) will be iterative also. For this reason we have chosen a table format, which can be updated as data is more fully developed and recommendations are formed. The table lists all the issues raised by CAC, as well as their status, and preliminary recommendations where these exist.

Some of the responses refer to other documents produced so far during the Study. For example, the methodology used to evaluate flight tracks has been described in a separate paper distributed to the CAC/TAC. Similarly results of the four season noise monitoring and their application to the INM model runs for Sea-Tac have been described previously and distributed. In addition many of the CAC's issues have been treated in the on-going Committee materials, which are regularly up-dated. As a result, this table is being provided as a status report rather than a full explanation of the issues themselves.

We hope that this information answers your request, and will be happy, as always, to answer questions by phone, fax, e-mail, on the web site, or in person at our next Committee meetings.

Sincerely,



Ryk Dunkelberg

CAC Objectives for the Sea-Tac Part 150 Study

ITEM NUMBER	ISSUE	STATUS
1.	Noise Metrics, Data, Etc.	
1.1	Information Architecture	The proposed methodology on flight track alternatives analysis is contained in separate memo. All noise metrics and analytical techniques used in this Study are consistent with industry standards and can be compared with KCIA and/or other relevant regional data. For the land use portion of the study, the latest available data has been used. The level of detail is appropriate and sufficient for the issues being addressed. A separate effort to produce an additional information architecture will not be undertaken, as this is beyond the scope of this Study.
1.2	INM Error Analysis	Completed - Four season noise monitoring program results are incorporated into Part 150 INM contours as described in a separate memo. Drafts of these contours were available at the Part 150 Open House at Highline High School on May 20, 1999. Several significant changes in the resulting DNL contours for Sea-Tac can be attributed to this noise monitoring data. The Study does not include statistical error bars/ranges for contours or other metrics.
1.3	INM Model Investigation	Completed - Adjustments were made to Part 150 INM run based on four season noise monitoring and actual operations at Sea-Tac. See 1.2 above and separate memo on noise monitoring and modeling.
1.4	Airport Noise Demonstration System	Citizen's groups are welcome to invite Dr. Dubbink to demonstrate the ISIS system. Providing that demonstration as part of the Part 150 work program, however, is beyond the scope of this Study.
1.5	Study Graphics	Based on comments from the Subcommittees, graphics produced during the Study will have fully descriptive titles. The significant quantity of graphics produced for the alternative flight track analysis is an example.

2.	Flight Track Corridors	
2.1	Compliance with Elliot Bay	Evaluation in progress
2.2	FMS	Actual FMS radar flight tracks have been used in the adherence to flight track analysis. Further use of this technology in procedures where it is not currently in effect is under review as part of the alternative flight track analysis.
2.3	East Turn Scatter Plan – North Flow	Evaluation in progress – Data developed under the flight track analysis methodology is to be presented at the 11/17/99, Operations Subcommittee meeting. A separate memo outlines this methodology, which will include evaluation of probable population impacted, sleep and speech interference and annoyance levels.
2.4	Minimum Population Density Flight Tracks – South Flow	As drafted, this text in your letter is unclear. The text mentions arrivals; however, the description seems applicable to departures. Clarification is needed.
2.5	Modification of 4-Post Plan South Flow	FAA has indicated that no wholesale change in the 4-Post air traffic system will be considered. However, the Study is considering specific flight track proposals recommended by the Committees. These alternatives were presented at Operations Subcommittee meetings on October 6, and November 17, 1999.
3	Noise Remedy Program	
3.1	Modification of Noise Remedy Boundaries to enclose 65 and 60 DNL.	New boundaries are being evaluated as part of this study (through the efforts of the Land Use Subcommittee), but extension of the residential noise insulation program out to 60 DNL is not contemplated.
3.2	School insulation	Insulation of schools is being handled in a separate process from residential insulation.
3.3	Special consideration for hospitals, churches and retirement homes	Wesley Home Health Care Facility is being evaluated for possible acoustical treatment. Initial discussions of the Land Use Subcommittee did not place high priorities on other institutional facilities.

4	Regional Solutions	
4.1	Sea-Tac/KCIA sub-system	Analyzing the SeaTac/KCIA regional subsystem is beyond the scope of this Study, as this is a Part 150 Study, not a airport system plan.
4.2	Sea-Tac/KCIA contour	The KCIA Part 150 is now underway. The Scope of that study includes investigation any overlap of noise contours between both Sea-Tac and KCIA airports.
5	Operational, New Technology Changes	
5.1	Curfews	No changes beyond the current Sea-Tac Airport noise regulations under consideration. To do so would require a Part 161 Study.
5.2	Fines/Enforcement	FAA is responsible for enforcement of aircraft in flight. For Sea-Tac ground noise fines see 5.3 below.
5.3	Ground Noise – Run-ups	An extension of the nighttime run-up rule is being evaluated. Amendments might involve added fines for violations. Health related issues are beyond the scope of this study.
5.4	PSRC Issues	See individual responses below.
	Social Surveys	Beyond the scope of the study
	Minimal Daytime Run-ups	See Item 5.3
	Enforce compliance with nighttime departure corridor	See Item 5.2 - The new Sea-Tac Noise Monitoring System will provide good data on adherence to the Duwamish/Elliott Bay nighttime departure procedure.
	Evaluate daytime use of Duwamish Corridor	Under evaluation
	Extend nighttime period for Duwamish Corridor	Under evaluation
	Evaluate Minimum Population Flight Tracks	Under evaluation
	Evaluate slope departure profiles	Under evaluation – An Alaska Airlines test of alternative departure profiles has been conducted, and data will be presented to the Operations Sub-Committee.
5.5	New Technology impacts on flight tracks	Under evaluation - See Item 2.2.
5.5.1	FMS	Under evaluation - See Item 2.2.

5.5.2	GPS and NASA/FAA study of LAAS	Use of FMS/GPS, which are available technologies, is under consideration. Additional research into developing technologies is beyond the scope of this study.
5.5.3	Cat II, Cat III GPS Johns Hopkins Study	Use of FMS/GPS is under consideration, and additional research is beyond the scope of this study.
5.5.4	Other Issues including airport growth and expiration of MII agreement.	Future NEM contours will be produced for 2004 and 2010. Airline/Airport financial agreements are beyond scope of this Study
6	Land Use Planning	
6.1	Run-ups related to King County noise ordinance	The Port of Seattle's new Noise Monitoring System is designed to measure run-up noise. Reports can indicate whether or not individual events exceed any particular noise level.
6.2	Noise Budget related to exceedences	The noise budget is not in itself a component of this Part 150 Study, as it has been in place for several years. The noise budget expires at the end of 2000. One of the recommendations of this Study is likely to be to continue the SNAC committee and to define a role and format for continuing mediation issues including the noise budget in the post 2000 period.
6.3	Loss of Tax Base	ATZ policies are under evaluation. Economically viable re-use of any residential property, which might be taken within the ATZ, is a goal.
7	Financial Analysis	
7.1	Management Policy Process	Meaning unclear
7.2	Funding Sources	A variety of funding sources is contemplated to support this program including AIP and PFC revenues.
7.3	Financial Plan	The Port will use available sources of federal funds to support this program. Treatment of homes below 65 DNL is not contemplated. Based on initial discussions with Land Use Sub-Committee, concentration is likely to be on treatment of mobile and multi-family residences in high noise level areas.
7.4	Mobile Homes	Based on initial discussions with Land Use Sub-Committee, acquisition of mobile home parks in high noise areas is under consideration.

28 Aug 2000

**A Project to Introduce a Region-wide
Air Transport Planning
Information Architecture**

Version 0.2
28 Aug 2000

Draft prepared by:
A. W. Forrey

Introduction to This Document

The ability for communities to be able to use Information and Communication Technology (ICT) in conducting long range planning for air transport capacity, and properly managing information concerning the dimensions of air transport during the coming years, will be important in the contribution of air transport to society. Thus, it is critical for Communities, together with the various governmental and organization bodies, to be able to select an information management environment that will allow growth with the use of the technology as the problem grows over the years. It is therefore important to begin the introduction of ICT correctly. This document is a specific guide for the various participants with respect to the considerations needed to introduce an Enterprise-oriented Information Architecture into the Regional Air Transport Capacity Planning (RATCP) Process so that not only all of the potentially applicable issues are addressed but also the Communities and designated Planning Steward organizations can conduct an optimally productive dialog with potential Suppliers of information products and services for driving the Process. It is also important to remember that this new environment has a Life Cycle from Acquisition to Disposition and that it is in an enterprise environment that will change over the years. Both the underlying knowledge and its application to Air Transport Capacity Planning will change and the information technology applicable to the planning enterprise will also change even more rapidly. It has been known by information systems engineers for some time that a clear understanding of both the capabilities and the manipulated data for any system must precede an implementation using any selected technology, if the Acquirer of the system is to avoid obvious major mistakes. This understanding does not mean that one has to know everything about potential impacts before proceeding but, rather, that one must be systematic about what one does know. This Guide, therefore, draws on the general literature documenting the best recommended practices in software engineering but tailors it for the Air Transport Capacity Planning Process, regardless of the level of previous informatics skills which the participants may possess.

The document is one of three possible Parts relating to Acquisition of an Information Architecture but all parts are inter-related. Formally, it might be thought that one should decide to acquire ICT and that decision then precipitates organizing a project as an initial step. Another approach might be to first consider the situation, looking first at the nature of air transport operations, how to Plan over the long term for such operations and then, secondly, to define the ICT requirements for serving operational planning followed by organizing a project that not only recognizes the growth and the evolution of understanding about the planning process but also about managing the Acquisition of the needed Information Architecture. This document promotes the second course of action. There is no single approach applicable to all situations but in any case there are the three major areas that need to be considered and this Guide allows entry at several points. These areas are: Concept of Operations (this Document: IEEE 1362-1998), a Requirements Document (IEEE 830-1998) and a Project Management Plan (IEEE 1058-1998). This document, the first step, is created using IEEE-1362-1998 format.

Of Note

In the End, more than they wanted freedom, they wanted security.
They wanted a comfortable life and they lost it all - security, comfort, and freedom...

When the Athenians finally wanted not to give to society but for society to give to them, when the freedom they wished for most was freedom from responsibility, then Athens ceased to be free.

Edward Gibbon

Table of Contents

Introduction to This Document

1. Scope

- 1.1 Identification
- 1.2 Document Overview
- 1.3 System Overview

Referenced Documents

- 2.1 ANSI Documents
- 2.2 ISO Documents
- 2.3 Terms and Abbreviations
- 2.4 Other References

3. Current Situation

- 3.1 Background, Objectives, Scope
- 3.2 Operational Policies, Constraints
- 3.3 Description of Current System
- 3.4 Modes of Operation of Current System
- 3.5 User Class Descriptions
 - 3.5.1 Organizational Relationships Among Stakeholders
 - 3.5.2 Profiles of User Classes
 - 3.5.3 Interactions of Users
 - 3.5.4 Other Users
- 3.6 Present Support Environment

4. Justification for Change

- 4.1 Justification for Changes
- 4.2 Nature of Changes
- 4.3 Priority of Changes
- 4.4 Considered Non-included Changes
- 4.5 Assumptions and Constraints

5. Proposed System Concepts

- 5.1 Background
- 5.2 Operational Policies/Constraints
- 5.3 Description of Proposed System
- 5.4 Modes of Operation of Proposed System

6. Operational Scenarios

- 6.1 Composition of the Regional Planning Group
- 6.2 Size and Population of the Region
- Geographic Location and Layout of the Region
- 6.4 Personnel in the Regional Planning Group
- 6.5 Services Supporting the Regional Planning Group

7. Summary of Impacts

- 7.1 Operational Impacts
- Organizational Impacts
- Impact During Development

8. Analysis of Proposed System

- 8.1 Summary of Improvements
- 8.2 Disadvantages and Limitations
- 8.3 Alternatives and Tradeoffs Considered

1. Scope

1.1 Identification

This Concept of Operations document for a Regional Air Transportation Planning Information Architecture is version 0.1 of an evolving document. It is at this time still incomplete.

1.2 Document Overview

This document describes the various activities that would encompass a Regional Air Transportation Planning Process and the identified information would be involved in these activities. The document will also describe the various objectives of Regional Planning and how such planning can address the problems that transcend local airport environmental and mitigation steps.

1.3 System Overview

The envisioned Information Architecture would be a resource for an appropriate regional planning body sponsored by a designated responsible governmental body. In the initial version of this document, this sponsoring governmental body is unidentified but the basic structure of the planning body will be outlined.

2. Referenced Documents

2.1 American National Standards

IEEE 830-98 Recommended Practice for Software Requirements Specification
IEEE1058-98 Standard for Software Project Management Plans
IEEE P1074-1991 "Development of Life Cycle Processes"
IEEE 1362 Guide for Information Technology - System Definition - Concept of Operations Document
ASTM E1340-90 "A Standard Guide for the Development of Systems by Rapid Prototyping"

International Standards

2.2.1 International Informatics Standards

ISO 12207 Information Technology - Software Life Cycle Processes
ISO 15288 Information technology - System Life Cycle Processes

2.3 Terminology

2.3.1 Acronyms

CAC	Citizens Advisory Committee
PSRC	Puget Sound Regional Council
EIS	Environmental Impact Statement
RATCP	Regional Air Traffic Capacity Planning
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
INM	Integrated Noise Model

2.3.2 Terms

<to be added>

2.4 Other Documents

1. ASNA 1979 Aviation Safety and Noise Abatement act 49 USC 47501 et seq.
2. ANCA 1990 Aviation Noise and Capacity Act 49 USC47521 et seq.
3. OMB Circular A-119 Federal Participation in the Development and Use of Voluntary Consensus Standards
and in Conformity Assessment Feb 10 1998
4. PL 104-113: National technology Transfer and Advancement Act of 1995 May 7 1996

3. Current Situation

3.1 Background, Objectives, Scope

3.1.1 Background

This document began in 1998 when the SeaTac Part 150 Citizens Advisory Committee (CAC) began the documentation of the Part 150 Process. This document is a general step in being able to address the long term evolution of the sequence of Part 150 studies that will be required not only at SeaTac but also at any other nearby established airport that may have its study coordinated with the Part 150 Studies being done at interacting surrounding airports within a region. These interactions lead to complex effects of air operations at a specific site. As an example, the CAC began an initial proposal for a generalized "Information Architecture" that would serve all aspects of the long term studies of all aspects of environmental impacts involving SeaTac with other regional sites. It was then recognized that this information architecture could be implemented as a designed information system by using the recently adopted national and international informatics standards for system and software engineering so that it could evolve into a long term local and regional information resource that would not only aid the immediate SeaTac Part 150 study but would also enable effective regional planning for air transport capacity that includes land use and other community planning under the Washington State Growth Management Act. The envisioned regional information architecture uses much of the same data that was being gathered in an ad hoc fashion during the SeaTac Part 150 study and organized it into a permanent well understood information resource for little more than the cost and effort of the ad hoc data gathering activities. This core resource has the potential of long term evolution in a systematic planned fashion into a more comprehensive Information Architecture that makes best use of all regional information resources, as well as presents the information in the most effective fashion for defined regional planning purposes, including the present SeaTac Part 150 Study.

While there is review of airport noise mitigation under FAR Part 150 for individual airports applying for FAA funds, there are no common conventions, either local, nation-wide or international, for organizing region-wide air transport capacity planning as a broader framework for local airport efforts. The fractionation of communities and other participants, local and nation-wide, with the limited considerations of "Part 150 Studies" has led to this document. During the conduct of the current expanded Part 150 review, stimulated by the Puget Sound Regional Council (PSRC) mandate in PSRC Resolution 96-3 to review aircraft noise mitigation issues relating to the expert arbitration panel that resulted from the SeaTac Third Runway Expansion program and its EIS process, the Citizen's Advisory Committee prepared a Statement of Objectives which noted several key issues, the first of which was the need for an "Information Architecture" to support such a study. Another key issue was the need for Regional Planning perspectives and mechanisms. This Statement of Objectives document has led to the realization that no regional planning can be effective without a systematic informational architecture that has regional, rather than local, scope. The questions that must be asked must have an objective basis for answers in a comprehensive, well designed set of databases - an "Information Architecture" - that contains observations and measurements that develops the questions being asked and provides a basis for a supportable answer. The current focus involves collecting ad hoc data for the particular "Part 150 Study", after being given ad hoc oral questions during public meetings followed by deciding on the specific data relating to answering only those questions. This is an oral process and is followed by gathering the immediate data and presenting it at subsequent public meetings. The structure and representation of the gathered data is generally unreported. Even though participants in this process include staff members for cities and community organizations whose regular jobs are directed at planning and other governmental processes, there are no agreed upon common conventions for representing and structuring the concepts that are the basis for the observations and measurements used in planning because no one has yet recognized the general need for such conventions. These conventions are needed in order to ensure clear

unambiguous communication either in local or in regional efforts organized to deal with the questions related to air transport capacity planning. This situation confounds dialog and subverts progress in both planning and executing the policies and procedures that result; it is, in addition, inefficient and uneconomic in gaining benefits from efforts and resources expended. Hence, the development of this document to systematically exploring answers to this situation.

3.1.2 Objectives

The Objectives for this Information Architecture are:

- Identify all Conceptual Objects that contribute in any way to the Regional Air Transport Capacity Planning Process
-
- Characterize each of these Objects in terms of data attributes that are used in any aspect of the Planning Process
-
- Develop a Model of the interrelationships of these Objects and of the Process by which each Object is involved in the Activities of the Planning Process
-
- Develop the means by which the data attributes would be gathered and stored within the Information Architecture for easy access and common use over a long term by a variety of agencies, with agreed upon privacy and confidentiality constraints

3.1.3 Scope

The Scope of this effort is, currently, to: 1) identify all of the related activities needed to reliably plan approaches to expanded Air Transport Capacity, in all of its aspects, in a unified and in a comprehensive fashion; 2) to define an Information Architecture to support it. In order to do that planning activity, a complete well designed Information Architecture will be required for the purpose of stating questions and issues in a fashion which can be answered with factual objective data accessible to all parties. This document describes the planning organization debated and adopted outside this effort, but within the Regional Governmental Agencies, which would utilize this common Information Architecture in their governmental roles in the process.

3.2 Current Operational Policies, Constraints

[Identify difficulties in current SeaTac Part 150 Study Products and Requests for Information: no uniquely identified analytical reports, no carefully characterized data sources; only embryonic statement of issues and identification of supporting data; no defined model for the analytical Process; no (data) model for the supporting data.]

At the present time in the Puget Sound Region each airport independently prepares its expansion plans and any FAR Part 150 Noise Mitigation Studies. None of these activities identify regional interactions of airports in any perspective or use common procedures, common organization of issues and data regarding the economics of air transport or the environmental impacts of such transport. There are no FAA Guidelines beyond preparation of a "Noise Exposure Map" using the "Integrated Noise Model" software provided by the FAA. There are few US National voluntary consensus standards relating to the process of RATCP. ASA xx is used to define the LDN metric for total noise exposure, as mandated in ASNA (1979). For standards supporting activities of federal agencies, OMB Circular A-119 and the PL-104-113 mandate the use of voluntary consensus standards bodies for the creation and maintenance of such standards for federal agencies wherever possible.

Description of Current System

3.3.1 Data Currently Identified

The following has been abstracted and updated from the CAC 1999 SeaTac Part 150 Objectives Statement:

Data Objects: The conceptual entities about which data are captured.

Aircraft
Proposed Aircraft
Aircraft Model
Airline
Airport
Air Operation
Proposed Air Operation
Airport Operation
Flight Track
Proposed Flight Track
Sound Monitoring Location
Sound Measurement
Sound Flight Event
Weather
Property Location
Property Occupancy Type
Structure Type
Environmental Metric
Noise Metric
Noise Complaint
Literature Reference
Document Location
Property Assessment
City Agency
Community Group
Healthcare Research Study
[INM Data Objects]

Object Detail:

(M)= Multiple values

AIRCRAFT

Aircraft Identifier
Aircraft Type->AIRCRAFT MODEL
Current Aircraft Operator

PROPOSED AIRCRAFT

Proposed Aircraft Identifier
Aircraft type---->AIRCRAFT MODEL
Proposed Aircraft Operator

AIRCRAFT MODEL

Aircraft model name
Abbreviation
Minimum take-off weight
Maximum Take-off weight
Engine type
No passengers

AIRPORT

Airport Name

Airport Code
Operating Organization
Number of Runways
Number of air operations/yr
Number of passengers/yr
Tons cargo/yr
Noise Program description
Nearby airports (M)->AIRPORT
Airlines using (M)->AIRLINE
Airport Operation (M)->AIRPORT OPERATION

AIRLINE

Name
Airline code
Airline Class
Noise Control Official
Noise Control Official address
Noise Control official phone
Aircraft Model----->AIRCRAFT MODEL

AIR OPERATION

Air operation identifier
Airport----->AIRPORT
Air Operation Datetime
Air Operation Type-----AIR OPERATION TYPE
INM Flight Procedure Name
INM Departure Stage Length
Aircraft Identifier----->AIRCRAFT
Aircraft Registration Number
ARTS Aircraft Type----->ARTS AIRCRAFT TYPE
ARTS Raw Aircraft Type
OAG Aircraft type
INM Aircraft Type
Aircraft model----->AIRCRAFT MODEL
Aircraft Class----->AIRCRAFT CLASS
Airline----->AIRLINE
Airline Class----->AIRLINE CLASS
Flight Plan ID
Flight Track Identifier-> FLIGHT TRACK
Destination/Origin----->AIRPORT
Inbound/Outbound
Direction----->AIR OPERATION DIRECTION
Minutes Different from OAG
Runway Assigned
Weather ID
Beacon Code
Flight Control Attributes (eg FMS)----->FLIGHT CONTROL CLASS
Datetime of First Flight Track Data
Datetime of Last Flight tTrack Data

PROPOSED AIR OPERATION

Proposed Air Operation alternate Identifier
Airport----->AIRPORT
Proposed Aircraft Identifier
Proposed Flight Track Identifier
Destination-----AIRPORT

AIRPORT OPERATION

Airport Operation Identifier

Airport----->AIRPORT

Airport Operation Date-time

Airport Operation Type----->AIRPORT OPERATION TYPE

Airport Operation Description

FLIGHT TRACK

Flight Track Identifier

Aircraft Identifier----->AIRCRAFT

Airport----->AIRPORT

Air Operation Identifier----->AIR OPERATION

Datetime of commencement

Runway used

Time interval

X Coordinate

Y Coordinate

Z Coordinate

PROPOSED FLIGHT TRACK

Proposed Flight Track Identifier

Proposed Aircraft Identifier----->AIRCRAFT

Airport----->AIRPORT

Proposed Air Operation Identifier----->PROPOSED AIR OPERATION

Datetime of Commencement

Runway Used

Coordinates (M)

SOUND MONITORING LOCATION

Sound Measurement ID

Sound Monitoring Station ID----->SOUND MONITORING LOCATION

Coordinates

Monitoring equip configuration

SOUND MEASUREMENT

Sound Monitoring Station ID

Time of measurement

LEQ Aircraft

LEQ Community

LEQ Total

LMAX during hour

L1

L5

L10

L50

L90

L95

L99

Lmin

Seconds missing

LEQ Final Airport Aircraft

LEQ Final Other Aircraft

LEQ Community

Events Total

Events Airport

Events other Airport
No Seconds in Hour above 85Db
No Seconds in Hour above 80Db
No Seconds in Hour above 75Db
No Seconds in Hour above 70Db
No Seconds in Hour above 65Db
No Seconds in Hour above 60Db
No Seconds in Hour above 55Db
No Seconds in Hour above 50Db
No Seconds in Hour above 45Db
Overload During Hr
Underranges during Hr
Overranges During Hr
Percent Time During Hr Active
Use Hr to calculate daily Noise Status

WEATHER

Location Identifier
Datetime
Wind Speed
Wind Direction
Temperature
Humidity
Pressure
Altitude Density
Sky-----→SKY CONDITION
Wind Gusts
Visibility

SOUND FLIGHT EVENTS

Sound Event Identifier
Sound monitoring site-----→SOUND MONITORING LOCATION
Event Type from ANOMS
Event Group
Event Profile
Datetime of Maximum dBA
Duration in seconds
Duration Start-to-Peak in seconds
Maximum 1 sec DBA interval
SEL
SEL Energy
dBA threshold value
Aircraft Identifier-----→AIRCRAFT
Flight Track Identifier-----→FLIGHT TRACK
Duration of SEL above threshold
Duration of Event above threshold
Event TA-105 dB
Event TA-100dB
Event TA-95 dB
Event TA-90 dB
Event TA-85 dB
Event TA-80 dB
Event TA-75 dB
Event TA-70 dB
Event TA-65 dB
Event TA-60 dB

Event TA-55 dB
Event TA-55 dB
Event TA-45 dB
Ground distance site of closest XYZ track point
Altitude of XYZ closest point
Time between event and closest XYZ time point

PROPERTY LOCATION

Property Identifier (M)-----|
Aggregated/Individual Parcel Category |-->PROPERTY PARCEL CATEGORY
Previous Included Parcel Identifiers (M)-----|
Airport Compatibility Class (M)----->COMPATIBILITY CLASS
Location Coordinates
Street Address of Property
Associated Community Group->COMMUNITY GROUP
Area of Property
Type of Occupancy-> PROPERTY OCCUPANCY TYPE
Number of Residents on Property
Owner Class of Property----->PROPERTY OWNER CLASS
Owner name (M)
Date Ownership Registered
Date Ownership Transferred
Type of Transfer-----PROPERTY TRANSFER TYPE
Sale Price
Description of Property
Comments About Property
Structure Identifier (M)
Type of Structure->STRUCTURE TYPE
Area of Structure
Occupancy Class of Structure
Number of Dwelling Units in Structure
Date Constructed
Date Modified
Type of Sound Insulation----->SOUND INSULATION TYPE
Value of Sound Insulation
Program Installing Insulation
Date of Internal Sound Measurement/calculation (M)
Type of sound measurement
Level of internal Sound Measurement/calculation
unit of internal sound Measure/calculation
Method of Sound Measurement
Instrument of Sound Measurement
Conditions of Sound Measurement/calaulation
Person Making Measurement
Comments
Current Attenuation Index
Attenuation Index Calculated date
Number of Persons Living in Structure
Number of Persons Working in Structure
Datetime of External Sound Measurement (M)
Type of Sound Measurement/calculation
Level of External Sound Measurement/calcaultion
Unit of External Sound Measurement/calculation
Method of Measurement
Instrucment of Measurement
Conditions of Measurement/calculation

Coordinates of Measuremnt
Person making Measuremnt
Comments
Datetime of Air-property measurement (M)
Method of Sample collection
Method of constituent measurement
Constituent (M)
Constituent Level
Constituent Unit of measurement
Datetime of Water Property measurement
Method of Constituent Measurement
Constituent Level
Unit of Measure

PROPERTY OCCUPANCY TYPES

Occupancy Name

STRUCTURE TYPE

Structure Type Name

NOISE METRIC

Noise metric Name

Abbreviation

Rationale

Reference >LITERATURE REFERENCE

ENVIRONMENTAL METRIC

NOISE COMPLAINT

Date-time of Complaint

Complainant Name

Complainant Phone Number

Complainant Location

Complainant Text

Candidate Flight Tracks (M)->FLIGHT TRACK

Staff Receiving Person

LITERATURE REFERENCE:

Document Name

Document Identifier

Document Description

Document Author

Sponsoring Organization

Document Location (M)->DOCUMENT LOCATION

Keywords (M)

DOCUMENT LOCATION

Location name

Address

Phone

PROPERTY ASSESSMENT

Property Identifier->PROPERTY LOCATION

City agency assessing->CITY AGENCY

Date of assessment

Method of Assessment----->ASSESSMENT METHOD
Source of Assessment----->ASSESSMENT SOURCE
Assessment ID
Value

CITY AGENCY

City
Agency name
Agency Phone

COMMUNITY GROUP

Community Group Name
Community Group Phone

HEALTHCARE RESEARCH STUDY

Healthcare Research Study Name
Study Sponsoring group
Description
Report Referencing->LITERATURE REFERENCE

INM MODEL

REFERENTIAL DATA

ASSESSMENT METHOD
ASSESSMENT SOURCE
PROPERTY TRANSFER TYPE
PROPERTY PARCEL CATEGORY
COMPATIBILITY CLASS
PROPERTY OCCUPANCY CLASS
PROPERTY OWNER CLASS
AIR OPERATION TYPE
ARTS AIRCRAFT TYPE
AIRCRAFT CLASS
AIR OPERATION DIRECTION
FLIGHT CONTROL CLASS
SKY CONDITION

Air Transport Processes: Functional activity associated with airports or aircraft operations

A/C Arrival
A/C Departure
Flight Plan Filing
A/C Maintenance Events
Flight Track Recording
Sound Monitoring
Environmental Monitoring
Sound Sensing
Flight Control

Regional Planning Processes:

Airport Expansion
Airport Mitigation
Rail Cargo Transportation Planning
Rail Passenger Transit Planning
Highway Transport Planning
Public Transit Planning

Air Pollution Control Planning
Water Quality Planning

3.4 Modes of Operation of Current System of Air Transport Capacity Planning

RATCP activities are currently focused (e. g. Part 150 Studies) and fragmented. Airports project their future operations individually. The implications on the economy, the environment, community land uses etc are only recognized and dealt with in an ad hoc fashion. There are no systematic principles for identifying the functions involved, or for organizing the process for deliberations and action. Each airport involves a "Part 150 Study" primarily to get funds for mitigation of noise effects that are not recognized as parts of a broader process. Thus, many of the issues are affected by uncontrolled factors.

3.4.1 Current Air Transport Capacity Planning Process

As presently understood, each regional airport independently develops its plans for meeting the capacity it identifies. Its plan must be submitted to the regional Growth Management process and produce an EIS if it affects the environment in any major way. There is no central data nor are there any central plans managing air transport capacity. In the four counties of the PSRC there is a review of the submitted EIS. The Washington State Dept. of Transportation has only a secondary role in the review process.

3.5 User Class Descriptions

The participants are presently identified only in an ad hoc fashion in extremis (when a crisis occurs). Planning priorities of surrounding communities are not recognized prospectively. A partial list of current participants is outlined below.

3.5.1 Organizational Relationships Among Present Regional Air Capacity Planning Participants

The current potential organizational participants in a truly effective RATCP Process should include:
Washington State Department of Transportation
Puget Sound Regional Council
King County
Port of Seattle

3.5.2 Profiles of User Classes

The current classes of both organizational and individual users of the information that should be maintained in the proposed Information Architecture to support the RATCP Process include:

- Airport Operators
- Airline Managers
- Air Cargo Operations
- County Officers
- City Officials
- Community Organizations
- Transit Planners
- State Air Transport Officials
- State Highway Officials
- Regional Governmental Body Representatives
- Transportation Consultants
- Transportation Labor Officers
- Transportation User Representatives
- Professional Societies
- Voluntary Consensus Standard Organization Representatives
- Financial Analysts

- Educational Institution Representatives
- Healthcare Representatives
- Federal Agency Representatives
- Water Resource Management Representatives
- Air Quality Representatives

3.5.3 Interactions of Users

The kinds of planning forums that currently contribute to the RATCP Process and would allow effective future interaction of participants and constituencies are the following:

- FAR Part 150 studies
- Airport Expansion Planning
- County Zoning
- City Zoning
- State Air Transport Affairs

3.5.4 Other Users

Other activities that currently contribute to RATCP are those of: federal/state regulating agencies, legal challenges, legislative sessions.

3.6 Present Support Environment

There is no systematic support for the full range of activities that constitute RATCP. Airports support individual Part 150 remediation s. Likewise, individual airports support their own exposure studies. There are no coordinated activities, or supporting data for looking at the full process of RATCP. PSRC has held focused public forums and FICAN meetings have been held in the Federal Office Building but none of these activities are a coordinated approach to the problem.

4. Justification for Change

4.1 Justification for Change

The key justification for change is that local, independent, targeted activities that contribute to what is now called RATCP are neither regional nor part of an integrated process that leads to a well defined outcome with attendant products due to the concerted work of the various participants. This situation has led to expensive legal challenges, projects that are violations of communities, ill-estimated costs and inability to defend benefits. These deficiencies can be attributed to the lack of understanding of the basis of the broader implications of a local project and its contribution to a "region of influence". All of this leads to expenditure of unproductive attendant RATCP resources. This error has been well known in information systems engineering for years, as that discipline evolved from a technology focus into a universally pervasive industry perspective. It was a recognized deficiency in the Airport Study of 1994. Nevertheless, the key error in the current process is conceptual, not technologic, and it is due to the key role of information in any project of the magnitude of RATCP. The justification for change, therefore, is the recognition of this error in the correct conceptual process. The solution is to embark on a systematic, robust, comprehensive effort to define the RATCP process and the attendant information needed to support it. It must then be followed by the specification of a corresponding information architecture to support the process and its evolution over an identified time frame.

4.2 Nature of Changes

The fundamental change is the establishment of a formal regional body with defined relationships to a responsible regional governmental body that would be in addition to any organizational structures that would be established by individual airport operating authorities. As shown in Fig 1, it would have stated responsibilities to address those issues that are outside the authority of the individual airports which thus

remain unaddressed and produce unpredictable effects that cause uncontrolled and unaccountable influences on action of the individual airports. Not only would an organization be mandated by this fundamental change but also the responsible and accountable organization would be directed to define a PROCESS by which issues are identified, work groups assigned, CRITERIA stated and DATA identified and gathered and then organized for a DECISION based upon the collected evidence. Only then can it be held truly accountable based upon its performance. The relationships of this organization to the other governmental bodies will also be clearly stated.

<Fig 1 to be supplied>

4.3 Priority of Changes

The first priority is to decide that there will be an organized, rather than an ad hoc fragmented process. Without that step, real progress toward understandable activities that produce recognized progress that is fair to all parties can not be made.

4.4 Considered Non-included Changes

None at this time.

4.5 Assumptions and Constraints

The key assumption in this proposal is that all parties who have already been involved in the independent focused activities that deal with the separate aspects of the RATCP now recognize the broad pervasive nature of the problem and that it cannot effectively be solved in a fragmented fashion. Thus, they must all work together in order to develop a new regional process that is tied to its national and international ramifications and will benefit all rather than a few interests. There will be both regional and national contacts in creating this process and these are:

- Standards Developer Organizations for recognized (PL 104-113 and OMB Directive A-119) voluntary consensus standards
- Professional Specialty Societies
- Federal Governmental Agencies
- State Government Agencies

5. Proposed System Concepts

5.1 Background

The proposed approach to RATCP involves first identifying a Regional Model for Air Transport Operations based upon all factors driving the demand for Air Transport services followed by proposed alternatives for satisfying the demand and assessing all of its impacts. All attributes of the description for demand and proposed service alternatives would be supported by an Information Architecture having a formal Domain Information Model supporting that Regional Model that identifies all data relating either to each described demand or to each proposed alternative. All activities related to RATCP would prepare a set of issues/concerns and each issue would then be characterized by a set of attributes from the Information Architecture. All analyses directed at identifiable issues related to each activity would have uniquely identified analysis data sets. Each data set will have all constituent data items identified by original data source, units of measure, datetime of the reference period, and the identification of all related activities and issues in order to clearly reflect their impact on the focal issue and the broader issues. These data set identifiers would allow modular parallel operation of working groups on separate aspects of a larger problem but with recognition of common interests so that broad implications of separate work items become apparent even though the working groups have relative independence. They would use common data and the availability of such common data would allow easy study of new aspects of complex problems.

5.2 Proposed Operational Policies/Constraints

The policy for operation of the RATCP Agency should envision a core staff funded by the participating governmental bodies that support the working groups. A standing working group on Information Architecture should guide the administration of the Information architecture by staff personnel. An Administrator and other supporting staff persons should be the minimal staff. Participants should be assigned to working groups, one for each key issue being addressed. An Executive Committee of key participants should assign participants, receive new issue proposals for work groups and identify needed resources to support the work program. This committee should be answerable to the participant membership. The program of work should include at least one public meeting a year that reviews the proposals and report on each issue.

5.3 Description of Proposed System

RATCP Process

The RATCP Planning Process should center around a Regional Model that includes all relevant concepts that affect Air Transport and the capacity of the region to serve the demand, including environmental, economic, governmental and social factors. The maintenance of this model, including its supporting Information Architecture, should be assigned to the standing work group on Information Architecture but the conceptual content should come from the active Work Groups composed of the participating membership and be driven by the active issues, which both draw form and contribute to, the Regional Model. Because some of the participating members would come from various professional specialty disciplines, the Regional Model would contain all economic, technical and social concepts that relate to these specialty disciplines and they can contribute best recommended practices and knowledge that contribute to elements of the Model. By also including the regional academic institutions, both input from specialty disciplines and dissemination of the knowledge and interpretations of the concepts that are in the Regional Model can be conveyed to the regional citizenry by a variety of avenues. This public understanding will be synergistic with the open systematic, deliberative process of the RATCP Agency. It will help produce the public support for the decisions that may be made on the issues before that Agency.

5.3.2 RATCP Information Architecture

The proposed RATCP Information Architecture would be based upon the initial RATCP Process Model and upon an Information Model that identifies all of the data needed to investigate active areas of regional concern, develop propositions for possible solutions, assemble the data needed for a decision on each proposition, criteria for deciding each proposition and for documenting the decision made on that proposition. The Data Objects and Attributes already identified in section 3.3 would serve as a starting point for the identification of the full Information Model and would identify any current sources where this data is already being collected and maintained. A data flow process would then be defined by which the data needed by the RATCP Process would be recognized and then systematically collected through electronic reportable data constellations. This electronic data collection should allow economic, systematic, accurate and timely construction and maintenance of the Information Architecture as a central information resource for the investigation and the analysis of all RATCP concerns in a public, objective fashion without the delays of assembling ad hoc project teams and then seeking out sources of data. A public advisory panel would supervise this data collection process and would formulate approaches for managing the privacy and confidentiality of designated data items.

5.4 Modes of Operation of Proposed System

5.4.1 Long Term RATCP

It has been recently noted that only 5 new runways have been added by existing airports in the US and only (3?) new airports (Kansas city, Dallas Fort Worth, Denver International) have been constructed in the past (35?). At the same time there has been no comprehensive discussion about the process by which national and regional demand for airports should be assessed and alternative strategies for satisfying this demand initiated.

For a challenge of this magnitude, an enterprise view is required. Many disciplines will contribute to identifying alternative solutions and initiating regional efforts that focus the broader national requirements into a set of regional requirements that can be functionally developed by RATCP organizations of the type proposed in this document. In the absence of any strategic vision by the national agency responsible (the FAA) and only current interest in "cleaning up the mess" made in absence of a strategic vision, an initial "bottom up" approach to RATCP must be taken by collaborative regional community and governmental groups to identify as elements of a Regional Process that could be integrated with a National Process at a time when such a national effort comes into being. In the interim, the de novo Regional Process will be Master of Its Own House, to the maximum extent possible, in developing a enterprise view that serves the Region. First, the "Region" must be defined to achieve a critical core domain having active participants and then document a Process that will encompass all of the areas of influence upon RATCP that could perturb the intended actions. A critical step will be identifying a host governmental agency, responsive to the electorate, that will be the focal point for enlisting the professional disciplines, the community participants, the industrial/commercial partners, and governmental members. It is clear that a number of "Views", represented by models, will be required to represent the multiple dimensions of an effective RATCP:

- Economic
- Transport mechanism
- Environmental Stressors
- Community/Land-use Planning
- Social services

Professional Specialty disciplines and academic resources exist that can contribute technical expertise. A unified structure for community groups can contribute a base of community support as well as focused expertise. The governmental agencies can organize the various levels of governmental responsibility into a consistent position able to guide debate and decision on the various alternatives proposed in different focus areas. Working together, these many perspectives can create a vision and an action plan for attaining that vision that is fair and equitable and supported throughout the region. Such a body can attain the achievable benefits and minimize the burdens to which all participants, by consensus, agree are necessary to gain these benefits.

The Regional Agency concurrently can then build on the action plan with other regions and the national agencies, such as the FAA, to develop a National Vision and National Process for ensuring that regional efforts lead to national and international consistency in principles, approach, and activities for air transport's contribution to human society. The Regional Agency, however, will not wait for the broader perspective to come into existence before taking action for regional benefit. This experience can then be modified to merge with the broader principles as other step up to the challenges.

5.4.2 Local System Planning

6. Operational Scenarios

6.1 Composition of the RATCP Agency

The Regional Air Traffic Capacity Planning Agency should have inputs from those organizations and individuals who:

utilize air transport in any fashion
are affected by the Operators of Air Transport
are responsible for governmental affairs affected by air transport

The provisional list of candidate participants is:

<To Be Determined>

6.2 Size and Population of the Region

The Puget Sound Region is defined to include the following Counties:

King, Snohomish, Pierce, Kitsap, Whatcom, Thurston, Jefferson, Island. The 1999 population in these counties is estimated to be the following:

King	x
Pierce	x
Snhomish	x
Kitsap	x
Whatcom	x
Thurston	x
Jefferson	x
Island	x

6.3 Geographic Location and Layout of the Region

The Puget Sound Air Transport Planning Region includes those counties surrounding Puget Sound which provide the travelers and the commerce that utilizes the region's airports and air transport support facilities and which are environmentally affected by the air transportation process. Puget Sound is oriented in a North-to-South fashion and is bounded by the Cascade Mountains on the East and the Olympic Mountains on the West. This geography shapes the nature of air transport operations and provides limitations on the nature of activities for its conduct.

6.4 Personnel in the Regional Planning Group

<To Be Determined>

6.5 Other Activities Supporting the Regional Planning Group

<To Be Determined>

6.6 Long Term RATCP Scenarios

<To Be Determined>

6.7 Airport Capacity Planning Scenarios

<To be documented>

6.8 Airport FAR Part 150 Studies

<To Be Explored>

7. Summary of Impacts

7.1 Operational Impacts

The initiation and use of a RATCP Process and its associated Information Architecture would have substantial impact on the plethora of uncoordinated activities that now attend events associated with the commercial aspects of air transport facility planning. The RATCP Process should have major impacts on the air carriers as well as the airport operators. These impacts should lead to better overall operational economics of the air transport industry as well as to the communities in which the activities are conducted. One specific

aspect would be the ability to explain the tradeoffs between the social benefits of air transport and the environmental effects of the air transport system to the constituent communities.

7.2 Organizational Impacts

Institution of RATCP would cause changes in the State, County and Municipal governmental organizational structures that have been, or may be involved. These governmental bodies would use the RATCP Process in an open objective fashion and the Process would enable the ability to achieve public consensus on planning, as well as achieving, the needed air transport capabilities. The Process would enable governments to work together and to be able to explain to their constituents, by means of data and criteria, the decisions that they have made. It would enable citizens to understand, by objective evidence, the nature of such agreements and to argue, based upon such data and criteria, for or against any proposed changes to be made by means of a defined governmental process.

7.3 Impacts During Development

<To Be Investigated>

8. Analysis of Proposed System

8.1 Summary of Improvements

<To Be Drafted>

8.2 Disadvantages and Limitations

<To Be Assessed>

8.3 Alternatives and Tradeoffs Considered

<None at this Time

SeaTac FAR Part 150 2000 Recommendations Summary

24 May 2000

Section IV.4 The CAC Operation Subcommittee recommendations that were voted approved by the 24 May CAC/TAC noted that the following general capabilities be included:

To the extent possible, the aircraft noise should be related to its effects on people including such factors as: annoyance, speech interference and sleep disturbance.

Comparative fleet quality between airlines should also be included in the program

The program should utilize measured data from the airports noise monitoring system.

Some method of normalizing data to account for airlines that most efficiently serve the region's air transportation needs should be developed. This normalization could account for number of passengers or tons of cargo per number of operations or flight distance.

The program should include incentives/disincentives of sufficient importance that airlines will take notice of the results.

Pilots and air traffic controllers should also be included in the program.

A continuing committee should be developed to finalize the details of the program and monitor its operation

Therefore, the following action is proposed:

PROPOSAL FOR A SEATAC "FLY QUIET" PROGRAM

Proposal Statement: The Port of Seattle shall establish a "Fly Quiet Program" that has formal commitment of staff and budget in order to pursue all defined issues of sound that are related to aircraft operations at SeaTac. It shall have a well defined structure that:

defines how a permanent balanced "Community Advisory Committee" that represents all affected surrounding communities, that replaces all previous temporary or permanent groups and that has a defined, documented and fair process for the ongoing appointments of community representatives over time. (See attached proposed Purpose and Scope)

identifies all air operations sound related issues

defines the information needed to examine these issues

defines criteria for decisions on air operations sound related issues

defines how the decisions of the participants will be documented, how public dissemination of the information about the decisions will be proliferated, and how public accountability for decision-followup will be assured.

defines how a sound-complaint office with well-documented procedures that acts as a integral resource to the "Fly-Quiet Program" organizational structure will be established and incorporated (see attached additional proposal)

"Fly Quiet" Program for SeaTac Airport Statement of purpose and scope

Purpose: Minimize the effects of aircraft overflight noise on the Puget Sound Region due to SeaTac Air Operations.

Scope: This permanent program of SeaTac Airport consists of those activities associated with SeaTac Air Operations that produce noise perceptible in the Puget Sound Region communities and the program proposes directed activities (standing and ad-hoc) with stated, defined propositions, decision criteria, methods and data needed to identify and address issues concerning the reduction of both the sound exposure and the effects of such noise.

Beginning Constituent Propositions:

1) Ongoing impacts of SeaTac Air Operations requires a permanent, citizen community working organization to state aircraft noise concerns in the form of well stated propositions with identified data requirements and decision criteria which can be allocated to multidisciplinary work groups for preparation for a decision process. This permanent working organization would replace both the previous SeaTac Noise Abatement Committee (SNAC) and the episodic "Citizens Advisory Committee" assembled ad hoc for "Part 150 Studies" which have expiration conditions and it would be composed of both ad-hoc and standing work groups that identify and address issues of sound related to air operations..

2) This standing working group of the Program would investigate and integrate any additional metrics and noise measurements and estimation techniques that exist into a general reference document which would be used in concert with a well-structured permanent information architecture to characterize both noise exposure and its effects that are related to any propositions being investigated by all other Program work groups who have been assigned to other propositions directed at SeaTac Air Operations.

3) A working group of the permanent organization would be assigned to investigate the proposition: "That Flight Track identification and compliance techniques can document not only the exposure but also the effects of aircraft overflights in the Puget Sound Region, including issues with respect to Glide Slope, in both arrival and departure, as coordinated with the geographic position of the flight track".

4) A working group of the permanent organization would investigate the proposition: "That SeaTac Ground Runups in support of Air Operations can be either virtually eliminated or contained in special facilities in order to minimize effects on surrounding communities in the Puget Sound Region."

5) A working group of the permanent organization would investigate the proposition: "That aircraft arrival and departure routes, including aircraft altitudes, can be assigned in order to minimize noise exposure and effect on Puget Sound Region communities."

6) A working group of the permanent organization would investigate the proposition: "The long term capacity of SeaTac Air Operations can be characterized not only in terms of likely numbers and types of aircraft but also in terms of the likely impact of this Air Operations Profile on the routing of such aircraft and the impacts of those routes on aircraft noise exposure and effect to the region."

Additional Proposal for the Noise Complaint Component of the "Fly Quiet" Program

Aircraft Noise Complaint System Basic Capabilities

SCOPE: This organizational component of any Airport, or consortium of Airports, but particularly SeaTac International Airport, is defined here, giving the capabilities of both the organization, its processes and the basic data that must be maintained as part of the basic processes. This document does not mandate how these capabilities should be implemented in each individual enterprise but, rather, gives the resultant behavior that must be exhibited in order to claim either effectiveness in responding to aircraft noise complaints or conformance to best recommended practices.

PURPOSE: This set of best recommended capabilities has been created to provide clear targets to air transport operating organizations and to airports who purport to be addressing issues of surrounding community aircraft noise complaints. At midyear 2000 there are no formal voluntary consensus approved common conventions by which such activities may be judged by either governmental or private evaluation bodies to which such aircraft noise complaint organizational activities may be referred either for review or for ongoing community dialog.

The essential properties of an Aircraft Noise Complaint System which must be documented as part of its established procedures are:

- Define the means by which complaint calls will be received
-
- Define the nature of the complaint call dialog
-
- Define the means of call followup and followup response
-
- Define the attributes of the Complaint call database
-
- Define the means for producing call statistics and those statistics meaningful for the surrounding communities
-
- Define the most useful analytical measures for both airport management and for community information purposes
-
- Define the means for handling exceptional callers
-
- Define the means by which airport management utilizes the noise complaint data and interacts with any regional air traffic capacity planning organization
-
- Define the means by which the community is kept informed of the analyses of noise complaint data
-
- Define the means by which noise complaint issues that result from data analyses are inserted into the regional air traffic capacity planning process
-

DESCRIPTION:

Receipt of Complaint Calls:

The noise complaint call-in line should be capable of capturing phone number, if it is presented electronically. This number should be displayed to the call operator, if on duty. Though most callers want to speak to a "live" person, if a call-operator is not on duty the dialog to leave a recorded message, and identity of the caller and his/her location, should be present. All of these messages should be converted by voice recognition

into a message text. For the noise complaint database. The date and time of the call should be automatically logged. If a recorded query dialog is present (with a query for the Caller name and message, for example), then text processing of the captured call into the noise complaint database could be achieved.

Complaint Call Dialog:

The call operator dialog should be carefully designed so that, if it is recorded as a part of the call receipt, the defined operator prompts will enable tags in the text for defined responses to be recognized as part of the text that can be processed into the database. Helpful queries from the call operator prompting guide will not only help the call operator, if on duty, but also provide informative responses to the caller reflecting current airport operating conditions. Such information could relieve some concerns of the caller by inducing a bit of real understanding of probably unanticipated airport operating conditions. Automating updates of the operating conditions information reports for use by the call operators could be achieved electronically. The use of these perspectives by the call operators and which are then captured in the call response dialog would produce context based cases to be used as response material for call followups.

Complaint Call Followup:

The noise complaint system organization must involve a followup mechanism that either activates individual followup activity or produce responses that are sent to individual callers who leave callback information. The exact procedures should be part of the policy of the "Fly Quiet" organization and produced by its community participants. Surveys should also be made of both the callers and the general public regarding the followup adequacy. This general followup process could also be a part of a webpage, once the immediate individual call followup has been made, in order to augment those individual followups by also informing the general caller population. The effectiveness of this followup activity should be regularly reviewed by both the "Fly Quiet" program staff and by the community participants.

Complaint Call Database Structure:

The attributes of each call that were noted in the earlier SeaTac Part 150 Information Architecture that was included in the CAC Objective Statement given to POS as part of the SeaTac Part 150 documentation and includes the following data elements.

NOISE COMPLAINT
Date-time of Complaint
Complainant Name
Complainant Phone Number
Complainant Location
Complainant Text
Staff Receiving Person
Candidate Flight Tracks (M)->FLIGHT TRACK

Complaint Call Data Analyses:

There is no defensible reason for establishing and operating an Aircraft Noise Complaint System if the collected data is not used for subsequent analyses directed at either continuing issues involving aircraft noise or at ad hoc questions. The substantial continuing issues that should drive regular include: 1) Call location maps that show correlated aircraft flight tracks; 2) time-of-day/month-of-year call frequency charts that relate the number of flights per hour to the number of calls/hr as fundamental baseline statistics that are regularly compiled and sent to participant organizations and which are supplemented with focused analyses related to current issues.

Procedures and measures for data analyses for airport management

The measures of aircraft noise complaint data and its analytical measures that are to be used in concert with other data, noted in the CAC Information Architecture, for the management by POS staff of air operations

events may need further investigation and development of data analysis procedures and presentation formats that are particularly appropriate to SeaTac airport. This investigation and development should be done collaboratively with the organized work groups of the Fly-Quiet

Procedures and measures for data analyses for community information

In addition to the procedures and resources used in data analyses of aircraft noise complaints for airport management, the participating communities in the Fly-quiet program will need analyses directed to community understanding of the aircraft noise problem in support of their participation in ongoing air operations through the Fly-Quiet Program. Responsibility must be defined within the Aircraft Noise Complaint System to develop those procedures and metrics that not only originate in aircraft noise complaint data but also in those data that are part of the Information architecture and that foster public debate and dialog on this topic leading to public understanding.

Exceptional Caller Procedures:

Long experience in numerous communities across the US with Noise Complaint Systems has shown that there are exceptional callers who are highly annoyed by aircraft noise. There is useful information in the repetitive calls that must be analyzed along with those calls from the more prevalent representative callers. These procedures for receiving and following up of such calls and for extracting the intrinsic information in their calls must be established by the Noise Complaint System. The key information contained in these behaviors must be recognized and further utilized as part of the data capture and analysis process.

Uses of Complaint Call Data for Regional Planning:

How aircraft noise complaint call data are to be used not only for local airport management but also by broader regional governmental bodies and community groups for planning of air transport capacity and air operations facilities and their operating policies must be actively probed. The encapsulated operation of airports located together in a broad region is ultimately not tolerable because there are unavoidable interactions, regardless of the strenuous individual airport efforts. Aircraft Noise Complaint data contribute to the spectrum of data that must be used in addressing these broader aircraft noise issues. Though the Noise Complaint System collects these data for SeaTac and uses it as a resource for its "Fly-Quiet" Program, these data must be offered to more regional organizational processes that may be established to recognize, and begin addressing, the broader aircraft noise issues. This capability needs to be part of the Noise Complaint System documentation.

Uses of Complaint Call Data for Airport Management

As new metrics and data analysis procedures, when applied to aircraft noise complaint data from the Noise Complaint System and with data other data from the Information Architecture, are able to reveal new insights about management of air operations, new air operations management procedures should be proposed to, and reviewed by, the "Fly-Quiet" Program participants and then tested.

Uses of Complaint Call Data for Community Information

In addition to the uses of Aircraft Noise Complaint System data for management improvement, the new procedures supported by testing data, should also be prepared for presentation to community groups. This preparation may also require preparation for display in different ways than may be useful for airport management and for the Fly-quiet Program participants. Continuing program but reviewed by all participants in that program. investigation must occur in ways to inform the public by means of the community groups participating in the Fly-Quiet" Program of which the Aircraft Noise Complaint System is an integral part.

PROPOSED RESOLUTIONS

RESOLUTION A.

The CAC and TAC shall hold one or more additional meetings as part of the FAR Part 150 Process. The first such additional meeting shall be scheduled immediately after the CAC and TAC are informed of the FAA's response to the recommendation that additional use be made of the Duwamish/Elliott Bay Noise Abatement Corridor. The CAC and TAC request that the Port of Seattle hold open the FAR Part 150 Process pending the outcome of such meetings.

RESOLUTION B.

Port of Seattle Resolution 3401, as adopted by the Port Commissioners, fails to accurately represent the results of the FAR Part 150 Study, including the technical analysis of the alternatives and the recommendations of the CAC and TAC.

RESOLUTION C.

The Port of Seattle never conducted a valid process or gave notice or an opportunity to be heard prior to adopting the "criterion" that the Port claims to have relied upon in rejecting the CAC and TAC recommendations. This criterion was never agreed to by the CAC or TAC and is inconsistent with the fundamental purposes of the flight track alternative analysis required by FAR Part 150.

RESOLUTION D.

The CAC and TAC shall contact the FAA directly to request that the FAA reject the Port's FAR Part 150 Study conclusions regarding flight track dispersion and to request that the FAA conduct further analysis of the alternatives recommended by the CAC and TAC in its Report. The communication shall also communicate any of the resolutions that are passed on this day.

RESOLUTION E.

The Port Staff demonstrated bias throughout the FAR Part 150 Process, prejudicing the outcome of the Process. For example, the Port Staff unilaterally adopted criterion that constrained the Study and prejudiced the consideration of flight track alternatives. The Staff also inaccurately characterized the results of the Part 150 Study to the Commission, and failed to fully and accurately communicate the CAC and TAC's recommendations and concerns to the Commission.

RESOLUTION F.

The Port shall undertake a Part 161 study to consider all additional methods and ways to reduce airport-related noise impacts on citizens and communities, including without limitation noise related landing fees, limits on the number or type of operations or aircraft, use restrictions including time of day of operations, and relocation of aircraft maintenance operations to less populated locations. ~~In accord with this resolution, all comments within the CAC/TAC Recommendations Matrix which state "no change recommended" shall be changed to state, "Part 161 Study recommended after study of noise reducing alternatives, in order to reduce noise impacts on the community."~~

Appendix Eight. Land Use Subcommittee Recommendations

Revised Generalized Sub-Committee Land Use Recommendations May 2000

Overall Action. Utilize Largest Contour (*Existing Base Case, 1998*) for Program Boundaries. In addition, the Sub-Committee recommends that schools and colleges impacted by aircraft noise should be sound attenuated and otherwise improved to mitigate noise levels in accordance with the *Sound Insulation Requirements for Mitigation of Aircraft Noise Impacts on Highline School District Facilities*. This should be a first priority.

Action II.2. Residential Uses within ATZ should be purchased, *based on specific criteria. Residential neighborhoods with houses experiencing noise levels of 65 DNL or greater with a slant distance to approaching aircraft of 968 feet or less should be purchased. Entire neighborhoods should be purchased and relocated, based on physical determinants (such as streets, highways, etc.) to identify the boundary of such neighborhoods, to avoid deterioration of remaining parcels.* Burien and SeaTac will work in conjunction with the Port to prepare **compatible** land use plans for the areas consistent with both community and Port goals. **Noise remedy actions will be generally agreed upon by the Port and the community.**

Action II.3. Acquire Mobile Homes and Parks within the **65 DNL, beginning with those in the 70 DNL.** If owners close their parks within 65DNL before the port has acquired the Park, the Port will continue its relocation assistance Program *as outlined in Port Resolution 3257.* Amend existing policy to increase the amount of moving assistance for manufactured and mobile homes that cannot be sound attenuated within the 65 to 70 DNL to the actual cost. Amend zoning regulations to prohibit replacement or additional mobile homes within the 65 DNL contour.

Action II.4. Expand Noise Remedy Boundary to include the 1998 Baseline 65 DNL noise contour.

Action II.5. *Sound attenuate* all multifamily structures within the 65 DNL noise contour, **beginning with those in the 70 DNL.**

Action II.6. Sound attenuate *medical facilities* that provide permanent living space as a first priority (2). Sound attenuate fire stations (1) within the 70 DNL contour and those within the 65 DNL (1) contour next, with those in the 70 contour first. Sound attenuate religious facilities (7) within the 70 DNL contour and within the 65 DNL contour (10) next, with those in the 70 DNL contour first.

Action. II.7. Amend Burien and SeaTac Comprehensive Plans, *as necessary,* to reflect ATZ recommendations *that may not be consistent with existing Plans.* Enter into Intergovernmental Agreement with Port concerning land use, development and infrastructure in these areas.

Action II.8. Amend Zoning Maps, as necessary, of Burien and SeaTac to reflect ATZ recommendations *that may not be consistent with existing Maps and to take into consideration FAR Part 77 height requirements.* Enter into Intergovernmental Agreement with Port concerning development and conversion of these areas. No zoning changes should be allowed that would permit additional mobile homes within the 65 DNL contour.

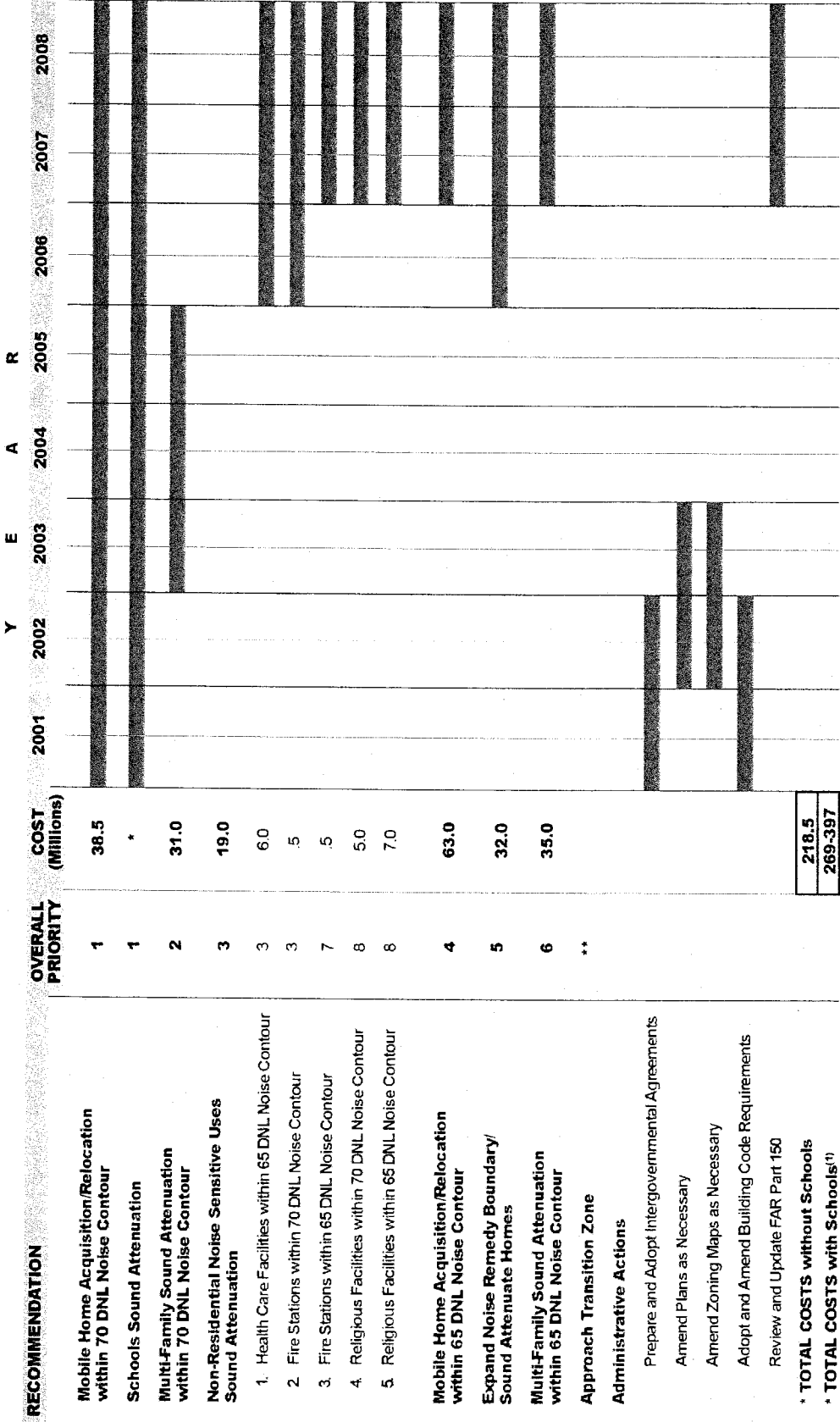
Action II.9. *In the communities surrounding Sea-Tac, amend the sound attenuation requirements of the building code to provide for consistency of materials and their installation; provided that these amendments recognize that buildings close to Sea-Tac will require a greater degree of sound attenuation than those farther away.* Any new schools, either public or private, should be required to achieve sound attenuation reduction to the same extent that the Port and the Highline School District have agreed upon.

Action II.10. Port shall provide a final build-out plan for Sea-Tac to enable surrounding jurisdictions to develop long-term land use plans consistent with 50 to 100 year building life span.

Bold indicate additions from last Land Use Sub-committee meeting.

RECOMMENDATION	OVERALL PRIORITY	COST (Millions)
Mobile Home Acquisition/Relocation within 70 DNL Noise Contour	1	38.5
Schools Sound Attenuation	1	*
Multi-Family Sound Attenuation within 70 DNL Noise Contour	2	31.0
Non-Residential Noise Sensitive Uses Sound Attenuation	3	19.0
1. Health Care Facilities within 65 DNL Noise Contour	3	6.0
2. Fire Stations within 70 DNL Noise Contour	3	.5
3. Fire Stations within 65 DNL Noise Contour	7	.5
4. Religious Facilities within 70 DNL Noise Contour	8	5.0
5. Religious Facilities within 65 DNL Noise Contour	8	7.0
Mobile Home Acquisition/Relocation within 65 DNL Noise Contour	4	63.0
Expand Noise Remedy Boundary/ Sound Attenuate Homes	5	32.0
Multi-Family Sound Attenuation within 65 DNL Noise Contour	6	35.0
Approach Transition Zones	**	
Administrative Actions		
Prepare and Adopt Intergovernmental Agreements		
Amend Plans as Necessary		
Amend Zoning Maps as Necessary		
Adopt and Amend Building Code Requirements		
Review and Update FAR Part 150		
* TOTAL COSTS without Schools		218.5
* TOTAL COSTS with Schools⁽¹⁾		269-397

** Costs for Approach Transition Zones are outside the FAR Part 150 Study Update budget and will be addressed separately.
 (1) Port Estimate is 50/100 Million, School Study Estimate is Approximately 178 Million



(1) Port Estimate is \$0100 Million, School Study Estimate is Approximately 178 Million

** Timeframe subject to Interlocal Agreement between Port and Community. Costs will be addressed in a separate Budget. Note: Port to provide funds for completion of projects by 2008. The completion of such projects will be consistent with the capital facilities plans of various entities involved. It is understood that actions can and should be undertaken in a concurrent manner as indicated, as conditions allow.

Land Use Sub-Committee Recommendation for the Planning and Implementation Process

Appendix Nine. CAC/TAC Recommendation Matrix

Sea-Tac FAR Part 150 Update Operations Subcommittee Recommendations Summary

5/24/0

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
II.1 Changes in runway length, strength, location	No change recommended	No change recommended
II.2 Displaced thresholds	No change recommended	No change recommended
II.3 High Speed taxiways	No change recommended	No change recommended
II.4 Placement of taxiways	No change recommended	No change recommended
II.5 Relocate terminals	No change recommended	No change recommended
II.6 Maintenance run-ups regulations and placement	<ul style="list-style-type: none"> • Adopt the revised run-up aircraft priority, so that under south flow conditions, the secondary position is used for wide body aircraft; • Extend the 2-minute run-up restriction by one hour from 7 AM to 8AM on weekends; • Increase fines for run-up violations at night from \$100 to \$1,000 for the first violation, to \$2,000 for the second violation and \$4,000 for the third violation. For violations thereafter, there would be a doubling for every violation during a 12-month period; • This fine would be implemented once the new noise monitoring system has been fully installed and tested for reliability; • Include run-up monitoring in Fly Quiet program; • Prohibit discretionary run-ups before 9AM on weekends with the term "discretionary" to be defined by a public committee. 	<ul style="list-style-type: none"> • Adopt the revised run-up aircraft priority, so that under south flow conditions, the secondary position is used for wide body aircraft; • Extend the 2-minute run-up restriction by one hour from 7 AM to 8AM on weekends; • Increase fines for run-up violations at night from \$100 to \$1,000 for the first violation, to \$2,000 for the second violation and \$4,000 for the third violation. For violations thereafter, there would be a doubling for every violation during a 12-month period; • This fine would be implemented once the new noise monitoring system has been fully installed and tested for reliability; • Include run-up monitoring in Fly Quiet program; • Prohibit discretionary run-ups before 9AM on weekends with the term "discretionary" to be defined by a public committee.

**Airport
Plan**

**Sea-Tac FAR Part 150 Update
Operations Subcommittee
Recommendations Summary**

5/24/06

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p>Airport Plan</p> <p>11.7 Ground Run-up Enclosure (GRE)</p>	<p>Operations subcommittee favors identifying an appropriate location for construction and utilization of a GRE as soon as possible.</p>	<p>Identify, locate and construct a ground run-up enclosures / hush house immediately</p> <p>Yes: 23 Docter, Schaut, Kennedy, Jones, Clark, Combs, Spencer, Forrey, Hakala, Rees (for Ivelj, D. Anderson, Rudolph, Ranta, Marshall, Furney, Ward, Saar, Loch, Odle, Haterbecker, Self, Kiehl, Stewart)</p> <p>No: 0 Abstain: 0</p>
<p>11.8 Noise Barriers</p>	<p>Operations Subcommittee recommends:</p> <ul style="list-style-type: none"> • Construction of a 20' barrier in north cargo area of the airport. • Incorporation of barriers into future cargo area design and development. 	<p>A. Construct a 20 foot noise barrier in the North cargo area of the airport no later than Jan. 1, 2006</p> <p>B. Incorporate noise barriers into future cargo area design and development</p> <p>C. Identify a suitable location for a noise barrier on the West side of the airport benefiting any community</p> <p>Yes: 23 Docter, Schaut, Kennedy, Jones, Clark, Combs, Spencer, Forrey, Hakala, Rees (for Ivelj, D. Anderson, Rudolph, Ranta, Marshall, Furney, Ward, Saar, Loch, Odle, Haterbecker, Self, Kiehl, Stewart)</p> <p>No: 0 Abstain: 0</p>

Sea-Tac FAR Part 150 Update Operations Subcommittee Recommendations Summary

	Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
Airport and Airspace Use	III.1 Preferential runway use - north vs south flow	Support the North Preferential Runway Use at night during curfew hours through Elliott Bay Y - 5; Rudolph, Self, Clark, Kennedy, Spencer N - 3; D. Anderson, J. Williamson/Marshall A - 5; Haferbecker, Reese, Tweit, Combs, Ranta During calm conditions, preferential runway use is north flow: (24-hours) Y - 3; Clark, Kennedy, Spencer N - 5; D. Anderson, Reese, Self, J. Williamson/Marshall, Tweit, A - 4; Haferbecker, Rudolph, Combs, Ranta Support 50/50 north flow/south flow during calm conditions Y - 6; Rudolph, Clark, Ranta, Kennedy, Spencer, Reese N - 5; D. Anderson, Self, J. Williamson/Marshall, Tweit, Combs, A - 1; Haferbecker	Support the North Preferential Runway Use at night during curfew hours through Elliott Bay Y - 9 N - 0 A - 8 During calm conditions, preferential runway use is north flow: (24-hours) Y - 5 N - 7 A - 5 Support 50/50 north flow/south flow during calm conditions Y - 10 N - 5 A - 2
	III.2 Preferential runway use - north flow	See III.1 above	See III.1 above
	III.3 Preferential runway use - south flow	See III.1 above	See III.1 above

**Sea-Tac FAR Part 150 Update
Operations Subcommittee
Recommendations Summary**

5/24/0

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
III.4 Compliance with noise abatement corridors	Operations Subcommittee requested Fly Quiet See IV.4 Subcommittee recommends FMS on all north flow west turns to improve compliance with established noise abatement corridors.	Operations Subcommittee requested Fly Quiet See IV.4 Subcommittee recommends FMS on all north flow west turns to improve compliance with established noise abatement corridors.
III.5 Compliance with north flow	See Action III.18	See Action III.18
III.6 Develop preferential flight corridors	See II.18 through III.20	See Actions III.18 through III.20
III.7 Develop minimum population flight corridor	See II.18 through III.20	See Actions III.18 through III.20
III.8 Preferential flight tracks	See II.18 through III.20	See Actions III.18 through III.20
III.9 Restriction of aircraft ground movement	No alternative taxiway patterns or taxiway locations are available that would alter ground movement noise impacts.	No alternative taxiway patterns or taxiway locations are available that would alter ground movement noise impacts.

**Airport
and
Airspace
Use**

Sea-Tac FAR Part 150 Update
 Operations Subcommittee
 Recommendations Summary

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p>Airport and Airspace Use</p> <p>III.10 Ground Equipment</p>	<p>Operations Subcommittee recommends</p> <ul style="list-style-type: none"> Installation of power and conditioned air in existing and all newly constructed gates to minimize use of APU/GPUs Consideration of language in new airline lease agreements regarding the provision of these utilities in jetways. Install fixed power in cargo area. 	<p>A. <u>Install power and conditioned air in existing and newly constructed gates to minimize use of APU/GPUs</u></p> <p>B. <u>Consider Language in new airline lease agreements regarding provision of utilities in jetways</u></p> <p>C. <u>Install fixed power in cargo areas no later than Jan. 1, 2006</u></p> <p>Yes: 23 Docter, Schaut, Kennedy, Jones, Clark, Combs, Spencer, Forrey, Hakala, Rees (for Ivie), D. Anderson, Rudolph, Ranta, Marshall, Furney, Ward, Saar, Loch, Odle, Haterbecker, Self, Kiehl, Stewart</p> <p>No: 0 Abstain: 0</p>
III.11 Minimize nighttime run-ups	See II.6	See II.6
III.12 Limits on number or type of operations or aircraft	No change recommended	No change recommended
III.13 Minimize late night flights	Work with the airlines on limiting operations for Stage 2 aircraft weighing less than 75,000 lbs between 10pm and 7 am. If no agreement is in place by end of 2003, Port would conduct a Part 161 to achieve same agreement.	Work with the airlines on limiting operations for Stage 2 aircraft weighing less than 75,000 lbs between 10pm and 7 am. If no agreement is in place by end of 2003, Port would conduct a Part 161 to achieve same agreement.
III.16 Use restrictions	Not allowed under ANCA, would require Part 161 study – no change recommended	No change recommended
III.17 Raise Glide Slope or angle of intercept	Operations Subcommittee considering monitoring adherence to glide slope be included in a Fly Quiet program. See IV.4	Operations Subcommittee considering monitoring adherence to glide slope be included in a Fly Quiet program. See IV.4

**Sea-Tac FAR Part 150 Update
Operations Subcommittee
Recommendations Summary**

5/24/06

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p>III.18 North Flow East Turn Departure Procedures</p> <p>(III.18A Disperse Flights on East Turn III.18B Concentrate Flights on East Turn</p> <p>Airport and Airspace Use</p>	<p>February Operations Subcommittee recommendations:</p> <ul style="list-style-type: none"> • Support increased use of Duwamish/Elliott Bay corridor • Support use of FMS on Duwamish/Elliott Bay corridor and other noise abatement corridors • Conditional support of north flow split east turn alternative only if combined with increased use of the Duwamish/Elliott Bay departure and depending on fuller analysis of data. • Oppose FMS on north flow Summa departure and other residential areas 	<p>If and only if Duwamish/Elliott Bay corridor capacity is fully utilized, use north flow dispersion of east turn flights; perform detailed study of equitable dispersion alternatives to be completed no later than January 1, 2002.</p> <p>Yes: 14 (Docter, Kennedy, Jones, Clark, Spencer, Forrey, Hakala, Rees [for Ivie], Rudolph, Ranta, Furney, Loch, Odle, Self)</p> <p>No: 4 (Combs, D. Anderson, Marshall, Stewart)</p> <p>Abstain: 5 (Schaut, Ward, Saar, Haferbecker, Kiehl)</p> <p>If and only if Duwamish/Elliott Bay corridor capacity is fully utilized, use north flow split east turn if dispersion is determined impossible after detailed study.</p> <p>Yes: 11 (Docter, Kennedy, Clark, Spencer, Hakala, Rees [for Ivie], Rudolph, Ranta, Furney, Loch, Odle)</p> <p>No: 5 (Combs, D. Anderson, Marshall, Self, Stewart)</p> <p>Abstain: 7 (Schaut, Jones, Forrey, Ward, Saar, Haferbecker, Kiehl)</p> <p>Oppose the stand-alone split east turn. Meaning that the committee opposes the split east turn without the Duwamish recommendation.</p> <p>Yes: 11 (Schaut, Jones, Clark, Combs, Forrey, Hakala, Rees [for Ivie], D. Anderson, Marshall, Odle, Stewart)</p> <p>No: 7 (Docter, Kennedy, Spencer, Rudolph, Ranta, Furney, Loch)</p> <p>Abstain: 5 (Ward, Saar, Haferbecker, Self, Kiehl)</p> <p>Support the status quo on the North Flow East Turn</p> <p>Yes: 0</p> <p>No: 20 (Docter, Schaut, Kennedy, Jones, Clark, Combs, Spencer, Forrey, Hakala, Rees [for Ivie], D. Anderson, Rudolph, Ranta, Marshall, Furney, Loch, Odle, Haferbecker, Self, Stewart)</p> <p>Abstain: 3 (Ward, Saar, Kiehl)</p>

**Sea-Tac FAR Part 150 Update
Operations Subcommittee
Recommendations Summary**

5/24/0

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p>Airport and Airspace Use</p> <p>III.19 Increased use of Elliott Bay</p> <p>III.19A Increased departures in north flow through Elliott Bay</p> <p>III.19B Develop FMS procedures for all Elliott Bay departures</p>	<p>February Operations Subcommittee recommendations:</p> <ul style="list-style-type: none"> Support increased use of Duwamish/Elliott Bay corridor Support use of FMS on Duwamish/Elliott Bay corridor and other noise abatement corridors 	<p>Make Maximum Use of Elliott Bay Corridor with FMS</p> <p>Yes: 19 (Docter, Schaut, Kennedy, Jones, Clark, Combs, Spencer, Forrey, Hakala, D. Anderson, Rudolph, Ranta, Marshall, Furney, Loch, Odle, Haferbecker, Self, Kiehl)</p> <p>No: 1 (Stewart)</p> <p>Abstain: 3 (Rees [for Ivie], Ward, Saar)</p>
<p>III.20 South Flow Departure Flight Tracks</p> <p>III.20A Use of 1-5 Corridor</p> <p>III.20B Use of dispersed tracks (3-track)</p>	<ul style="list-style-type: none"> Support south flow two track alternative Oppose south flow three track Support Commencement Bay at night 	<p>Support the South Flow Two Track Alternative with further consideration of options to disperse Elma and west bound traffic</p> <p>Yes: 15 (Docter, Kennedy, Jones, Clark, Spencer, Forrey, Hakala, Rees [for Ivie], D. Anderson, Rudolph, Ranta, Furney, Loch, Odle, Self)</p> <p>No: 1 (Schaut)</p> <p>Abstain: 7 (Combs, Marshall, Ward, Saar, Haferbecker, Kiehl, Stewart)</p>
<p>III.20C Nighttime Turn Through Commencement Bay</p>	<ul style="list-style-type: none"> Oppose the south flow three track option as evaluated by the study Yes: 17 (Docter, Schaut, Kennedy, Jones, Clark, Spencer, Forrey, Hakala, Rees [for Ivie], D. Anderson, Rudolph, Ranta, Furney, Loch, Odle, Self, Stewart) No: 0 Abstain: 5 (Combs, Marshall, Ward, Saar, Haferbecker, Kiehl) <p>Support nighttime (11pm-6am) use of a corridor through Commencement Bay for west bound south departures.</p> <p>Yes: 19 (Docter, Schaut, Kennedy, Clark, Combs, Spencer, Forrey, Hakala, Rees [for Ivie], D. Anderson, Rudolph, Ranta, Marshall, Furney, Loch, Odle, Self, Kiehl, Stewart)</p> <p>No: 0</p> <p>Abstain: 4 (Jones, Ward, Saar, Haferbecker)</p>	<p>Oppose the south flow three track option as evaluated by the study</p> <p>Yes: 17 (Docter, Schaut, Kennedy, Jones, Clark, Spencer, Forrey, Hakala, Rees [for Ivie], D. Anderson, Rudolph, Ranta, Furney, Loch, Odle, Self, Stewart)</p> <p>No: 0</p> <p>Abstain: 5 (Combs, Marshall, Ward, Saar, Haferbecker, Kiehl)</p> <p>Support nighttime (11pm-6am) use of a corridor through Commencement Bay for west bound south departures.</p> <p>Yes: 19 (Docter, Schaut, Kennedy, Clark, Combs, Spencer, Forrey, Hakala, Rees [for Ivie], D. Anderson, Rudolph, Ranta, Marshall, Furney, Loch, Odle, Self, Kiehl, Stewart)</p> <p>No: 0</p> <p>Abstain: 4 (Jones, Ward, Saar, Haferbecker)</p>

Sea-Tac FAR Part 150 Update Operations Subcommittee Recommendations Summary

	Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
Airport and Airspace Use	III.21 Nighttime EVA Special Voluntary Procedure	Support	See III.18 through III.20
	III.22 South Flow Elliot Bay Arrival Procedure Using GPS/FMS	<ul style="list-style-type: none"> Work with the FAA to develop a curved approach, in south flow, using the Duwamish Noise Abatement corridor from the west This would be a long-term goal as technology develops 	<ul style="list-style-type: none"> Work with the FAA to develop a curved approach, in south flow, using the Duwamish Noise Abatement corridor To be implemented first as a nighttime procedure for all south flow arrivals This would be a long-term goal as technology develops
	III.23 FMS assignment for departures through Elliot Bay	Request that FAA assign FMS departure procedure to all properly equipped aircraft with non-FMS aircraft to be given an equivalent procedure	Request that FAA assign FMS departure procedure to all properly equipped aircraft with non-FMS aircraft to be given an equivalent procedure
	III.24 Coastal Arrivals in Propeller Aircraft	Work with the FAA to keep aircraft over the Sound as much as possible	Work with the FAA to keep aircraft over the Sound as much as possible (without sacrificing altitude)
Aircraft Operation Procedures	IV.1 Change in Departure Climb Profile	Operations Subcommittee recommends the use of the "Close-in" Noise Abatement Departure Procedure.	Support the following departure climb profile: A. Support Close-in Procedure: 0 B. Support Ear-Out Procedure: 7 (Docter, Self, Jones, Rees [for Ivie], Ranta, Marshall, Schaut) C. Support the Status Quo: 14 (Odle, Forrey, Saar, Ward, Kiehl, Hakaia, Loch, Kennedy, Spencer, Clark, Haferbecker, Rudolph, Furney, Combs) D. Abstain: 2 (D. Anderson, Stewart)
	IV.2 Adherence to Arrival Descent Profile	See IV.4 – Fly Quiet Program	See IV.4 – Fly Quiet Program
	IV.3 Re-application of normal climb power at 3,000'	No recommendation at this time	No recommendation at this time

**Sea-Tac FAR Part 150 Update
Operations Subcommittee
Recommendations Summary**

5/24/0

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p>IV.4 Departure and arrival fly quiet program</p>	<p>To be included in a Fly Quiet Program that:</p> <ul style="list-style-type: none"> To the extent possible, the aircraft noise should be related to its effects on people including such factors as: annoyance, speech interference and sleep disturbance. Comparative fleet quality between airlines should also be included in the program. The program should utilize measured data from the airport's noise monitoring system. Some method of normalizing data to account for airlines that most efficiently serve the region's air transportation needs should be developed. This normalization could account for number of passengers or tons of cargo per number of operations or flight distance. The program should include incentives/disincentives of sufficient importance that airlines will take notice of the results. Pilots and air traffic controllers should also be included in the incentive program. A continuing committee should be developed to finalize the details of the program and monitor its operation. 	<p>To be included in a Fly Quiet Program that:</p> <ul style="list-style-type: none"> To the extent possible, the aircraft noise should be related to its effects on people including such factors as: annoyance, speech interference and sleep disturbance. Comparative fleet quality between airlines should also be included in the program. The program should utilize measured data from the airport's noise monitoring system. Some method of normalizing data to account for airlines that most efficiently serve the region's air transportation needs should be developed. This normalization could account for number of passengers or tons of cargo per number of operations or flight distance. The program should include incentives/disincentives of sufficient importance that airlines will take notice of the results. Pilots and air traffic controllers should also be included in the incentive program. A continuing committee should be developed to finalize the details of the program and monitor its operation.
<p>IV.5 Monitor reverse thrust</p>	<p>To be included in a Fly Quiet program – See IV.4 above</p>	<p>To be included in a Fly Quiet program – See IV.4 above</p>

**Aircraft
Operations
Procedures**

**Sea-Tac FAR Part 150 Update
Operations Subcommittee
Recommendations Summary**

5/24/0

	Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p>Noise Program</p>	<p>V.1 Noise related landing fees</p>	<p>Not recommended at this time, as any meaningful changes would either not be legal or would not be accepted by the airlines as part of the contract renegotiations.</p>	<p>Not recommended at this time, as any meaningful changes would either not be legal or would not be accepted by the airlines as part of the contract renegotiations.</p>
	<p>V.2 Expand Noise Monitoring System</p>	<p>Port is currently in the process of expanding and improving its system, no additional actions recommended.</p>	<p>Port is currently in the process of expanding and improving its system, no additional actions recommended.</p>
	<p>V.3 Establish citizen complaint mechanism</p>	<p>Continue current system and integrate into new expanded Noise Monitoring System and Fly Quiet Program</p>	<p>Continue current system and integrate into new expanded Noise Monitoring System and Fly Quiet Program</p>
	<p>V.4 Establish citizen participation process</p>	<p>Operations Subcommittee recommends convening a committee to monitor programs implemented as a result of Part 150 study after it is complete.</p>	<p>Operations Subcommittee recommends convening a committee to monitor programs implemented as a result of Part 150 study after it is complete.</p>

**Sea-Tac FAR Part 150 Update
Land Use Subcommittee
Recommendations Summary**

5/15/08

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
General Land Use		<p>General (VI.9): The Port shall perform noise mitigation and insulation actions substantially in accordance with the attached spending schedule. The Port shall raise necessary funding from all available sources, including (without limitation) revenue and general obligation bonds and property taxation.</p> <p>The Port shall spend a minimum of \$25 million per year through 2008 (excluding the insulation of schools).</p> <p>Finish the existing noise remedy program with additional funding.</p>
VI.1 Acquisition	<p>Residential Uses within ATZ should be purchased, based on specific criteria. Residential neighborhoods with houses experiencing noise levels of 65 DNL or greater with a slant distance to approaching aircraft of 968 feet or less should be purchased. Entire neighborhoods should be purchased and relocated, based on physical determinants (such as streets, highways, etc.) to identify the boundary of such neighborhoods, to avoid deterioration of remaining parcels. It is the desire of both Burien and SeaTac that the Port acquired properties within the ATZ be eventually returned to non-Port/private uses. Burien and SeaTac will work in conjunction with the Port to prepare compatible land use plans for the areas consistent with both community and Port goals. Noise remedy actions will be generally agreed upon by the Port and the community.</p> <p>The Approach Transition Area (ATZ) includes about 309 residential homes. This consists of a north area of about 82 single-family parcels, 2 apartment buildings, 2 mobile home parks (28 units) and 2 mobile home single-family homes, and 6 apartment buildings (32 units).</p> <p>The estimated cost of acquiring these properties is \$35 million.</p>	<p>Residential neighborhoods with houses experiencing noise levels of 65 DNL or greater and located within the ATZ should be purchased. Entire neighborhoods should be purchased and relocated, based on physical determinants (such as streets, highways, etc.) to identify the boundary of such neighborhoods, to avoid deterioration of remaining parcels. It is the desire of both Burien and SeaTac that the Port acquired properties within the ATZ be returned to private ownership as soon as possible. Burien and SeaTac will work in conjunction with the Port to prepare compatible land use plans for the areas consistent with both community and Port goals.</p> <p>The Approach Transition Area (ATZ) includes about 309 residential homes. This consists of a north area of about 82 single-family parcels, 2 apartment buildings (28 units) and 2 mobile home parks (96 units). The south area includes 71 single-family homes, and 6 apartment buildings (32 units).</p> <p>The estimated cost of acquiring these properties is \$35 million.</p>

Land Use

**Sea-Tac FAR 150 Update
Land Use Subcommittee
Recommendations Summary**

5/15/0

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p>VI.2 Sound Insulation</p> <p>Land Use</p>	<p>Using largest DNL contour (<i>Existing Base Case, 1998</i>) for Noise Remedy Program Boundaries.</p> <ul style="list-style-type: none"> ▪ Sound attenuate all multi-family structures within the 65 DNL noise contour, beginning with those in the 70 DNL. Within the 70 DNL, this includes about 1,400 units at a cost of about \$31 million. Within the 65 DNL, this includes about 1,600 units at a cost of \$35 million. ▪ Sound attenuate schools within 65 DNL noise contour. • Sound attenuate <i>medical facilities</i> that provide permanent living space as a first priority (2). • Sound attenuate fire stations (1) within the 70 DNL contour and those within the 65 DNL (1) contour next, with those in the 70 contour first. • Sound attenuate religious facilities (7) within the 70 DNL contour and within the 65 DNL contour (10) next, with those in the 70 DNL contour first. 	<p>Using largest DNL contour (<i>Existing Base Case, 1998</i>) for Noise Remedy Program Boundaries.</p> <ul style="list-style-type: none"> ▪ Sound attenuate all multi-family structures within the 65 DNL noise contour, beginning with those in the 70 DNL. Within the 70 DNL, this includes about 1,400 units at a cost of about \$31 million. Within the 65 DNL, this includes about 1,600 units at a cost of \$35 million. ▪ Sound attenuate schools within 65 DNL noise contour. • Sound attenuate <i>medical facilities</i> that provide resident or in-patient care within the 65 DNL, with those in 70 DNL first. • Sound attenuate living quarters within fire stations (1) within the 70 DNL contour and those within the 65 DNL (1) contour next, with those in the 70 contour first. • Sound attenuate religious facilities (7) within the 70 DNL contour and within the 65 DNL contour (10) next, with those in the 70 DNL contour first.

**Sea-Tac FAR 150 Update
Land Use Subcommittee
Recommendations Summary**

5/15/0

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
VI.3 Mobile Homes	<p>Acquire Mobile Homes and Parks within the 65 DNL, beginning with those in the 70 DNL. If owners close their parks within the 65 DNL before the Port has acquired the park, the Port will continue its relocation assistance program (Resolution 3257). The Port will amend the existing program/policy to increase the amount of relocation assistance to the actual cost. Amend zoning regulations to prohibit additional mobile home parks within the 65 DNL contour and property to be returned to private ownership as soon as possible.</p> <ul style="list-style-type: none"> Acquisition of mobile/manufactured homes parks within the 70 DNL, which includes 8 parks with about 475 units, for \$38.5 million. Relocation assistance for manufactured and mobile homes located in parks that cannot be sound attenuated within the 65 to 70 DNL, approximately \$10.3 million. Acquisition of manufactured and mobile home parks that cannot be sound attenuated within the 65 DNL, approximately \$63 million. 	<p>Acquire Mobile and Manufactured Home Parks within the 65 DNL, beginning with those in the 70 DNL. If owners close their parks within the 65 DNL before the Port has acquired the park, the Port will continue its relocation assistance program (Resolution 3257). The Port will amend the existing program/policy to increase the amount of relocation assistance to the actual cost. Amend zoning regulations to prohibit additional mobile home parks within the 65 DNL contour and property to be returned to private ownership as soon as possible.</p> <ul style="list-style-type: none"> Acquisition of mobile/manufactured homes parks within the 70 DNL, which includes 8 parks with about 475 units, for \$38.5 million. Relocation assistance for manufactured and mobile homes located in parks that cannot be sound attenuated within the 65 to 70 DNL, approximately \$10.3 million. Acquisition of manufactured and mobile home parks that cannot be sound attenuated within the 65 DNL, approximately \$63 million.
VI.4 Approach Transition Areas	See Item VI.1	
VI.5 Noise Remedy Program Boundaries	Expand Noise Remedy Boundary to include the 1998 Baseline 65 DNL noise contour. This would include about 1,800 homes at an estimated cost of \$32 million.	Expand Noise Remedy Boundary to include the 1998 Baseline 65 DNL noise contour. This would include about 1,800 homes at an estimated cost of \$32 million. The Port agrees to continue studying the combined noise effects with Boeing Field. The Port will work with King County to resolve means of addressing the properties located within the joint noise contour. The details of this program will be defined by the follow-on committee (see V.4)

Land Use

Sea-Tac FAR Part 150 Update Land Use Subcommittee Recommendations Summary

	Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p style="text-align: center;">Land Use</p>	<p>V1.6 Zoning</p>	<ul style="list-style-type: none"> • Amendments to Zoning Maps, as necessary, of Burien and SeaTac to reflect ATZ and SeaTac to reflect ATZ recommendations that may not be consistent with existing Maps and to take into consideration FAR Part 77 height requirements. • Entering into Intergovernmental Agreement with Port concerning development and conversion of these areas. • Prohibiting zoning changes that would permit additional mobile homes within the 65 DNL contour. 	<ul style="list-style-type: none"> • Amendments to Zoning Maps, as necessary, of Burien and SeaTac to reflect ATZ and mobile/manufactured home park recommendations that may not be consistent with existing Maps and to take into consideration FAR Part 77 height requirements. • Entering into Intergovernmental Agreement with Port concerning development and conversion of these areas. • All jurisdictions shall prohibit the location of additional mobile/manufactured homes that cannot be insulated within the 65 DNL contour.
	<p>V1.7 Building Code Modifications</p>	<ul style="list-style-type: none"> • The communities affected by aircraft noise would amend their sound attenuation requirements of the building code to provide for consistency of materials and their installation; provided that these amendments recognize that buildings close to the Airport will require a greater degree of sound attenuation than those farther away. • Any new schools, either public or private, should be required to achieve sound attenuation reduction to the same extent that the Port and the Highline School District agree upon through negotiation. 	<ol style="list-style-type: none"> 1. The jurisdictions would amend their sound attenuation requirements of the building code for properties within the 65 DNL to provide for consistency of materials and their installation; provided that these amendments recognize that buildings close to the Airport will require a greater degree of sound attenuation than those farther away. 2. Any new schools or school buildings, either public or private, should be required to achieve sound attenuation reduction to the same extent as recommended by the Highline School District study.

**Sea-Tac FAR Part 150 Update
Land Use Subcommittee
Recommendations Summary**

5/15/0

Possible Action	Subcommittee Recommendations	CAC/TAC Recommendations
<p style="text-align: center;">Land Use</p>	<p>Burien and SeaTac to amend their Comprehensive Plans, as necessary, to reflect ATZ recommendations that may not be consistent with existing Plans. Enter into Intergovernmental Agreement with Port concerning land use, development and infrastructure in these areas.</p> <p>Port shall provide a final build-out plan for Sea-Tac surrounding jurisdictions to develop long-term land use plans consistent with 50 to 100 year building life span.</p>	<p>Burien and SeaTac to amend their Comprehensive Plans, as necessary, to reflect ATZ and mobile home/manufactured housing park recommendations. Enter into Intergovernmental Agreement with Port concerning land use, development and infrastructure in these areas.</p> <p>Port shall provide a final build-out plan for Sea-Tac Airport to enable surrounding jurisdictions to develop long-term land use plans consistent with 50 to 100 year building life span.</p>

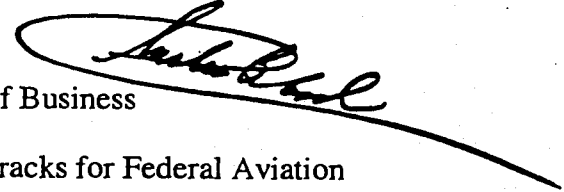
Appendix Ten. Staff Recommendations on Flight Tracks

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA-POLICY & STAFF BRIEFING

Item No. 6a
Date of Meeting 5/9/2000

DATE: May 8, 2000
TO: M. R. Dinsmore, Executive Director
FROM: Charles Blood, General Manager, Airfield Line of Business
SUBJECT: Staff Briefing and Recommendations on Flight Tracks for Federal Aviation Regulation (FAR) Part 150 Study Update.



BACKGROUND

Port Commission Resolutions No. 3212, as Amended, and No. 3245, authorized and directed Port staff to undertake, design, and implement certain improvements identified in the Master Plan Update for Seattle-Tacoma International Airport (Airport; Sea-Tac). In addition, a range of mitigation measures and studies were authorized, based on the results of the Master Plan Update, Final Environmental Impact Statement, Final Supplemental Environmental Impact Statement, and Puget Sound Regional Council (PSRC) Resolution A-96-02. Since those authorizations, the Federal Aviation Administration (FAA) has issued its Record of Decision (ROD), which also specifies mitigation requirements.

Among the mitigation measures and studies is an update of the Port's Noise Remedy and Noise Abatement programs through the Federal Aviation Administration's (FAA) Federal Aviation Regulation (FAR) Part 150 process. FAA approval of noise remedy and abatement actions under the Part 150 program, the Noise Compatibility Program (NCP), is also an eligibility component for the use of federal Airport Improvement Program funds or Passenger Facility Charge (PFC) revenues for program implementation. This will be the second major update of the Airport's Part 150 program since it was first established in 1985.

One task of a Part 150 process is to consider alternate operational procedures, which may provide noise reductions. A component of this task is an analysis of flight tracks. The goal of this portion of the Study is to determine if any alternate flight tracks would improve the noise environment around the Airport. Although this particular issue has been the most publicized and has engaged the widest variety of public participation, it is only one of a long list of possible actions to be taken as part of a full Noise Compatibility Program.

During this FAR Part 150 Study, Citizen and Technical Advisory Committees (CAC/TAC) suggested flight track alternatives for evaluation, and have been reviewing/commenting on information produced for each of the alternatives. In addition, three Subcommittees (Data, Land Use, and Operations) were established to focus on specific issues. Flight tracks have come under the purview of the Operations Subcommittee. Five meetings of the Operations Subcommittee

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 2

were dedicated to this topic with the progress of the analysis being initially presented to the CAC/TAC in December 1999. On February 9, 2000, the Operations Subcommittee voted on its recommendations for flight tracks and passed these along to the full CAC/TAC for consideration. CAC/TAC had final discussions, and made recommendations, on this topic on April 26, 2000.

During the course of these meetings, Subcommittee members suggested several options and variants of flight tracks for consideration. Each suggestion was screened by FAA Air Traffic Control (ATC), whose representatives participated actively at both the Subcommittee and full Committee levels. Only suggestions meeting ATC's screening for safety, operational feasibility, and maintenance of airspace capacity were carried forward for further review. In many instances ATC offered refinements to the Subcommittee member suggestions to make those ideas more feasible and, therefore, possible to carry forward for additional analysis. Once an alternative had passed through the initial review of safety and efficiency by ATC, it became an alternative for consideration by the consulting team and the Subcommittee.

At each Subcommittee meeting, the consultant team presented data prepared for the purpose of comparing alternatives to the status quo. Based on Subcommittee and public comments, several iterations of the data comparing alternatives were distributed and discussed. Refinements were made to both the alternatives and the analysis as the issues developed.

ALTERNATIVES CONSIDERED

1. Range of Study Alternatives

FAR Part 150 requires airport operators to consider a wide range of alternatives as part of the study process. The alternatives considered throughout this study process reflect actions specifically called out by the FAR Part 150, items suggested by the Puget Sound Regional Council as part of the processes discussed earlier, and actions suggested by the Study Committees as well as the general public. Port staff and consultants guided the study process by soliciting specific operational objectives as well as proposed actions. Committee members responded by describing objectives such as dispersing flights over certain residential areas, and concentrating flights over industrial corridors. Specific recommendations were as detailed as the location and degree of a flight turn.

At this time, Staff is bringing forward for Commission review only the actions related to Flight Tracks. The remaining actions will be brought before Commission for approval in August 2000.

2. Flight Track Alternatives

Six flight track alternatives resulted from the Part 150 process, each of which was compared to existing conditions. Alternatives were developed for South (South Flow) and North

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 3

(North Flow) departures. The following alternatives were compared to the existing conditions:

South Flow:

1. South Flow – two track option
2. South Flow – three track option
3. South Flow – west turn track through Commencement Bay at night

North Flow:

1. North Flow: Increased use of the Duwamish/Elliott Bay Corridor
2. North Flow: Flight Management System (FMS) for East Turn flights
3. North Flow: Split East Turn

Each alternative was analyzed from several perspectives using a combination of computer modeling and field noise measurement data. The purpose of this multi-faceted analysis was to consider the potential of each alternative to reduce annoyance, sleep and speech interference, as well as to compare the total population affected at various noise levels.

3. Analysis of Alternatives

During the study process, the Committees requested that the evaluation supplement the standard noise evaluation method with additional noise measurements (metrics) to more precisely describe the impact of noise on people. The consultants noted that because noise is a personal/subjective reaction to sound, precise relationships do not exist to describe the exact impact of noise on the exposed population. However, several scientifically accepted metrics were used to further define the impact of each alternative:

- **Day Night Average Sound Level (DNL)** was used as a means of describing community annoyance. This is also the official metric required by the FAA to evaluate community impacts of aircraft noise.
- **Time Above (TA)** – Number of Minutes that sound is above 65 decibels (dBA) or Time Above is used as an indicator of the impact on speech interference or communications.
- **Sound Exposure Level (SEL)** is a measure of noise from a single event that is used to predict sleep interference based on the noisiest event during nighttime hours. SEL is also used to describe the noisiest event.
- **Number of Daily Overflights (count of SELs)**

Applying these metrics to the six alternatives, and comparing them to the status quo, produced an enormous quantity of data, well beyond what is normally contained in a Part 150 Study. This quantity of data was used, by Committee members and the general public, to support many differing positions.

A description of each alternative and the results of the analysis follows.

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 4

A. South Flow Flight Track Alternatives

Nearly 70% of the year, weather conditions require that Sea-Tac Airport operate in a South Flow orientation (arrivals from the north, departures to the south). The Subcommittee members suggested the exploration of alternatives that would direct more flights over less densely populated areas south of the Airport. FAA ATC was approached with these objectives. The alternatives that FAA ATC considered potentially feasible are discussed below.

(1) South Flow Departure: Two Track - (Figure #1)

The citizens' suggestion was to direct as much traffic as possible over less populated areas, primarily into the Green River Valley located east and south of Sea-Tac Airport. This procedure, as presented by members of the Subcommittee, would have aircraft turning sharply to the east immediately after take-off, proceeding to the area identified as the Green River Valley, and then turning to the south. This suggestion was discussed with FAA ATC for feasibility prior to any analysis being completed. FAA ATC indicated that a flight pattern with this type of turn and so far to the east would interfere with departures from Boeing Field and would be a safety and efficiency concern. However, ATC responded with a variant of this alternative that would take aircraft in the general vicinity, over the Kent/Auburn Valley, while still meeting their initial screening for safety and efficiency. This scenario became known as the two-track alternative. This alternative would consist of the existing straight out departure as well as a departure track turning to the east, as soon as possible after departure, to a heading of around 145 degrees. This heading would provide the necessary 15-degree separation from departures out of Boeing Field, which uses a departure heading of 130 degrees. This was presented to the Committee members as the viable alternative to their suggestion. There was some disagreement among Committee members on this alternative with some members feeling that the original idea was feasible and should be explored further.

Under the two track alternative, approximately 40% of departures (those headed to destinations south and west of Seattle) would continue along existing straight flight tracks. Approximately 60% of departures (headed to destinations east) would turn along a 145-degree radial reaching the westerly portion of the Kent/Auburn Valley at about Kent-Des Moines Road.

Noise Analysis: The noise reduction benefits from the south flow two-track alternative are mixed. Results indicate:

- Increased annoyance impacts (number of people) at highest and lowest sound levels, decreased number at in between levels
- A decrease in the population experiencing speech interference
- An increase in total number of potential awakenings
- Noise reduction in total population affected due to shifting noise away from higher density areas.

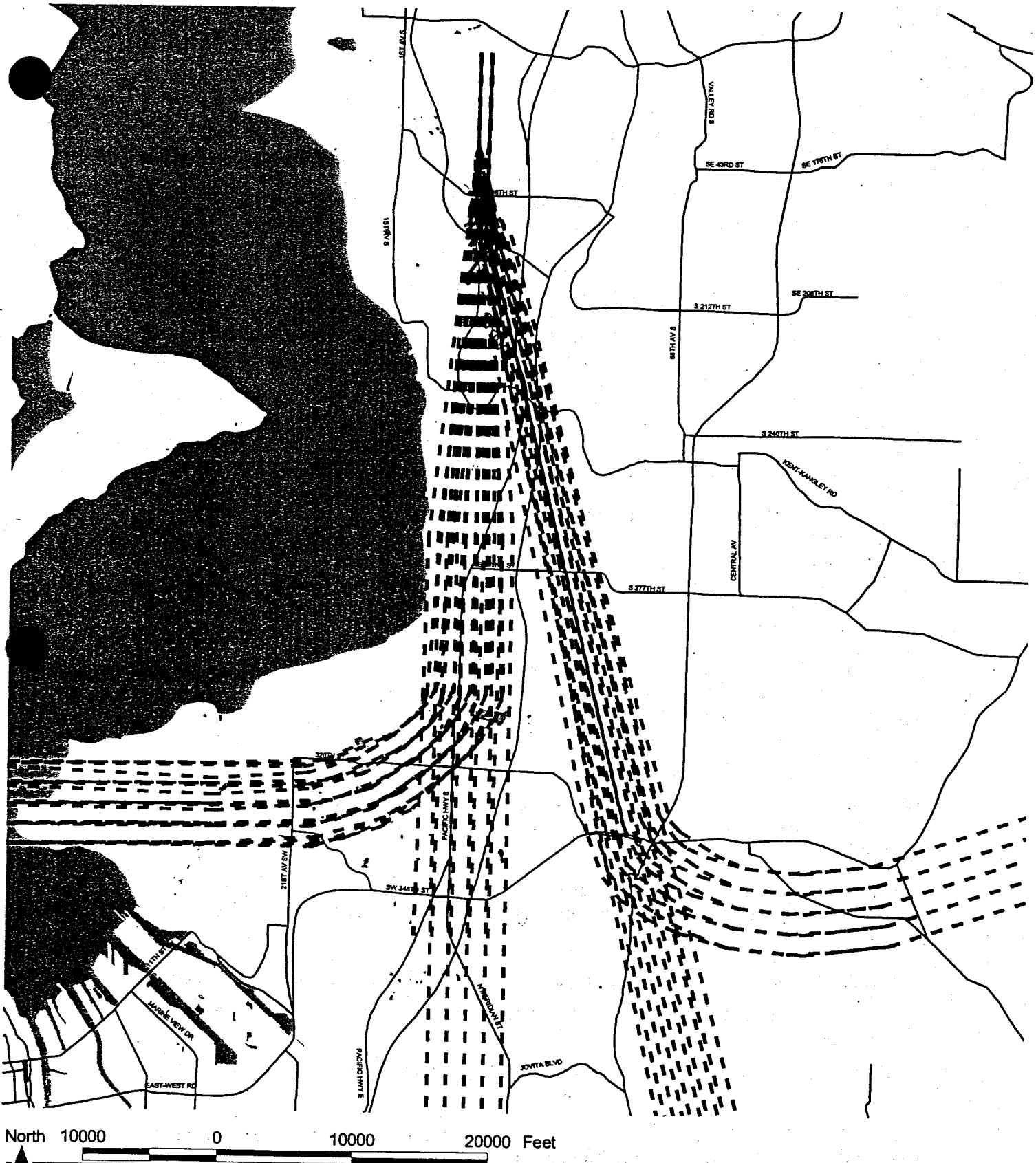


Figure 1 Flight Tracks Showing Two Track Alternative

--- Departure Tracks

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 5

On a south flow day, population affected would increase by 19% (1,450 people) at the highest 70 DNL contour. Within the 55 DNL, the number of impacted residents would increase by approximately 6% (an increase of 12,540 people). The number of newly impacted people within the 65 DNL would be 6,500; and a number of residents currently within the 65 DNL would experience an increase in noise also.

There is a benefit with the two track alternative also. Within the 65 DNL, the number of residents impacted would decrease by approximately 16%, which translates into a decrease of approximately 4,660 people at this noise level. While there would be a decrease in noise within the 65 DNL noise contour, the contour would shift from residences currently within the existing Noise Remedy Program Boundary to residences that are not receiving sound insulation from that program.

For speech interference, the analysis showed that the noise reduction benefit is also mixed based on time of exposure to sound above 65 dBA. This can be attributed to the dispersal of flights, which has the effect of shrinking the contours in towards the Airport. For those residents experiencing 60 minutes or more each day of sound above 65 dBA, the population impacted would decrease by approximately 33%, while the time above 10 minutes would increase by 3%.

Analysis conducted on potential sleep interference indicated that an increase of approximately 7% in the number of people impacted could be expected with this alternative. This translates into an increase in potential awakenings.

(2) South Flow Departure: Three Track – (Figure #2)

To address the FAA's determination that moving flight into the Green River Valley as originally proposed by the Subcommittee was not feasible, Committee members asked Port Staff to think "outside of the box" and come up with other alternatives for reducing the noise impacts. The result of this request was a three track alternative for south flow departures created by adding a westbound departure corridor to the two-track option. The third track would be at approximately the 190-degree radial, which would reach Puget Sound in the vicinity of the Des Moines Marina.

Noise Analysis: Of all the alternatives analyzed for south flow conditions, the three track offers the most potential noise reduction to the greatest number of people. Results indicate:

- Reduced noise annoyance to all areas (population within all DNL contours decrease)
- Reduced time of exposure to all residences (population receiving TA 65 dBA decreases)
- Shifts noise from areas receiving sound insulation under the Noise Remedy Program to areas that would be newly affected.

The analysis showed that most noise contour levels would experience a decrease in the overall number of people impacted. On a south flow day, the population impacted by the 70 DNL would decrease by approximately 2%, which translates into a decrease of 170 people within this contour. The population impacted by the 65 DNL would decrease by approximately 27%, or approximately 11,900 people within this noise level.

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 6

While there would be a decrease in noise within the 65 DNL noise contour, the contour would shift from residences currently within the existing Noise Remedy Program Boundary to residences that are not receiving insulation from that program. The number of newly impacted people within the 65 DNL would be 5,500.

For speech interference, the analysis showed that the number of people that are exposed to time above 65 dBA would decrease, except for locations very close to the Airport currently experiencing 150 minutes a day above 65 dBA. This can be attributed to the dispersal of flights, which has the effect of pulling the contours in towards the Airport. For those residents experiencing more than 60 minutes a day above 65 dBA, the population impacted would decrease by approximately 46%, while population experiencing time above 150 minutes would increase by about 26%.

Analysis conducted on potential sleep interference indicated that an increase of approximately 9% in the number of people impacted could be expected with this alternative. This translates into an increase of potential awakenings.

(3) Nighttime West Turn Track Through Commencement Bay (Figure #3)

A nighttime procedure for those aircraft making a turn to the west, between the hours of 11:00 p.m. and 7:00 a.m., was also suggested by the committee members. This procedure would shift these nighttime flights from over Federal Way to areas that are more industrial and less populated. FAA ATC was approached with this alternative for their initial screening. The indication from ATC was that the idea of using this procedure was possible, however, only during those hours that lower traffic volumes would permit. The hours of lower traffic volumes would primarily be between Midnight and 5:00 a.m. Discussions with ATC and analysis of flight track data indicated that this procedure is used occasionally now. The aircraft found to use the procedure now are those large, heavy aircraft that depart in the night to destinations in Asia.

Noise Analysis: There are between five and ten departures a night during the timeframe of midnight and 5:00 a.m. that could potentially use this procedure. The increased use of this departure procedure would not impact the 65 DNL. However, some people could be impacted by more overflights.

Analysis conducted on potential sleep interference indicated that a decrease of approximately 13% in the number of people impacted could be expected with this alternative. This translates into a decrease in potential awakenings.

B. North Flow Flight Track Alternatives

About 30% of the year, flights operate to the North. The current departure procedure directs those aircraft with final destinations east of Seattle to follow runway heading until reaching a distance of 8 nautical miles and an altitude of 4,000 feet Mean Sea Level (MSL) prior to commencing a turn to the east. Meeting these two criteria puts most aircraft in the vicinity of the I-90 Bridge at the beginning of their turn to the east. Other flights follow the Duwamish/Elliott Bay corridor over water, before turning north or south over Puget Sound. During the nighttime hours of 10 PM to 6 AM, east turning aircraft are directed through the Duwamish/Elliott Bay Corridor as air traffic conditions permit.



Figure 3 Commencement Bay Alternative
Departure Tracks

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 7

As an industrial or non-residential corridor does not exist for departures to the east, members of the Committees requested consideration of a track for the east turn that would disperse flights, to spread out the noise impacts. In addition, the members requested that the maximum amount of aircraft possible depart through the Duwamish/Elliott Bay Corridor utilizing as much of the industrial areas and Puget Sound as possible.

(1) North Flow: Increased Use of the Duwamish Corridor – (Figure #4)

One of the clearly stated objectives of the CAC was to increase the number of aircraft using the established noise abatement corridor over the Duwamish industrial area and through Elliott Bay. This corridor is the preferred noise abatement corridor for all north flow departures during the nighttime hours of 10 PM to 6 AM.

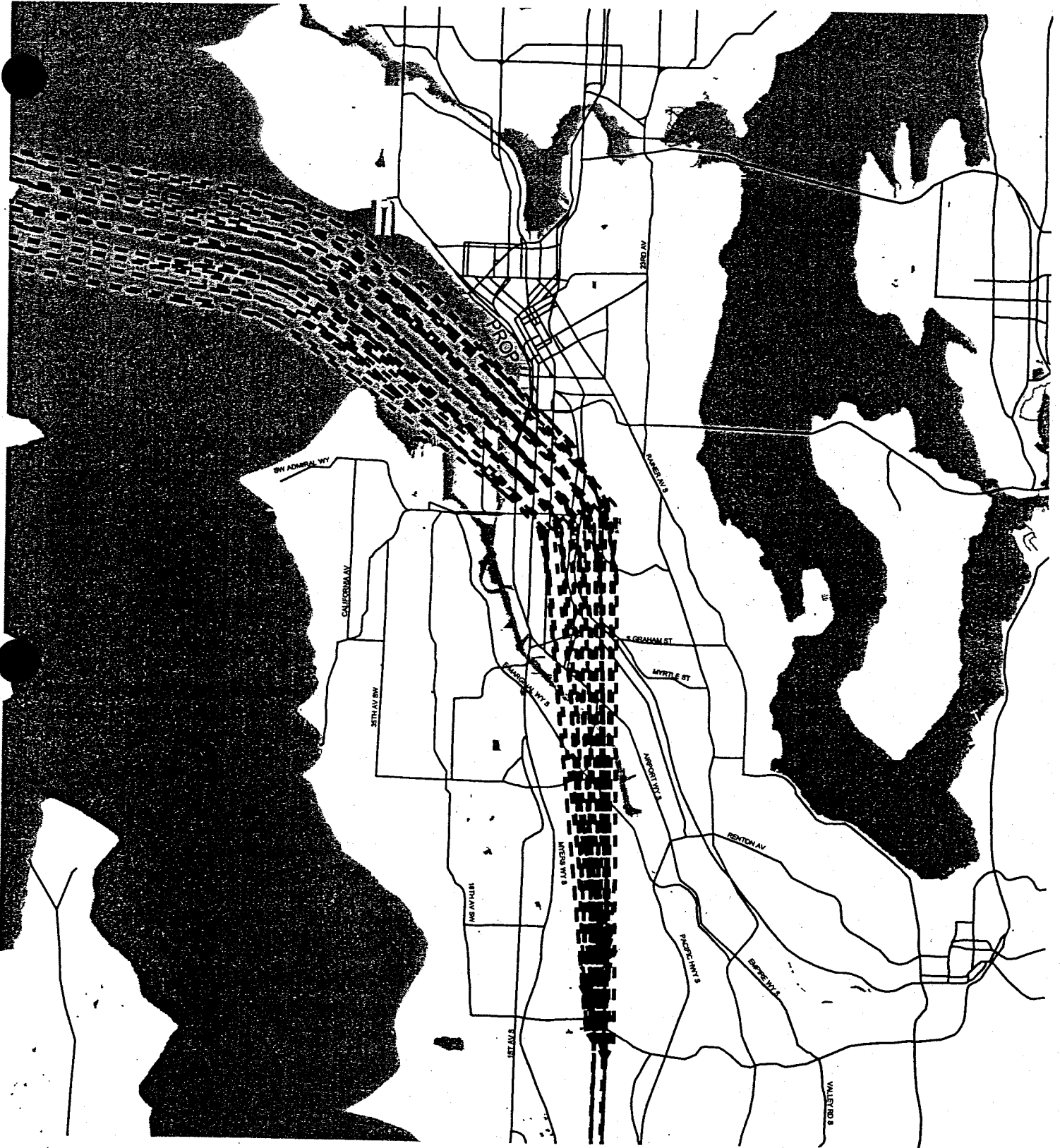
One of the outstanding questions raised during the course of this Study is how many flights if any, could be redirected into the Duwamish/Elliott Bay corridor from the east turn during daytime hours. Based on 1998 data, a little over one third of daytime traffic in north flow uses the Duwamish /Elliott Bay corridor. In 1998, on an average north flow day, approximately 37% (135) of jet departures used the Duwamish /Elliott Bay corridor; approximately 4% (15 jets) departed on a straight track through Seattle, and approximately 59% (215 jets) took the east turn. In addition to handling the Sea-Tac traffic, the Duwamish/Elliott Bay corridor also accommodates over 50 additional jet departures and 500 propeller aircraft per day from Boeing Field.

During the daytime, all traffic bound for northern California, Oregon, Alaska and the Pacific Rim is directed west into the Duwamish/Elliott Bay corridor. Traffic destined for all other locations is turned east. Adding traffic to the Duwamish/Elliott Bay corridor would mean redirecting some aircraft now turning east to the west, and then turning back to the east again. FAA has indicated that if any aircraft were to be redirected, it would be based on destination (for example, those aircraft destined to Los Angeles or Phoenix).

Defining the possible increase use of the Duwamish/Elliott Bay corridor is more complicated than the physical capacity between Bainbridge Island and Boeing Field. Placing eastbound aircraft in this corridor could place severe efficiency and safety constraints on related segments of the air traffic system beyond the bounds of the Seattle airspace (i.e., routes over Oregon and California). As a result, although the consulting team and others have theorized about certain destinations as possibilities to be turned west through Elliott Bay, only FAA can determine whether such a change would be either feasible or safe, and which destinations would be possible.

Noise Analysis: This alternative is different from the others in two ways. First, it is not a flight track change, since the procedure is currently in use and is already designated as a noise abatement flight track for Sea-Tac Airport, especially at night. Second, no noise evaluation has been conducted on potential benefits, because there is insufficient information on which to base a quantitative analysis.

The consulting team cannot assign any specific number of additional aircraft to this track until the FAA determines which flights might be rerouted. Without knowing the number of flights, their destination, aircraft type, time of departure, or the location where the aircraft would be turned back east, it is not possible to produce a credible noise analysis.



North 10000 0 10000 20000 Feet

Figure 4 Flight Tracks Showing Duwamish/Elliott Bay Corridor

--- Departure Tracks

Seattle-Tacoma

International Airport
FAR Part 150 Study Update



COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 8

Nevertheless, we know from current operating conditions, that increased use of the Duwamish/Elliott Bay route may have the potential to impact relatively few people. The flight track passes over several noise compatible areas including: a river basin, industrial zones, and Puget Sound. In addition, as aircraft become equipped with Flight Management System (FMS) technology, they will have the capability to fly a very precise route minimizing the overflight of residential areas and keeping to a very narrowly defined track over the water.

(2) North Flow: Flight Management System (FMS) for East Turn flights – (Figure #5)

FMS is a relatively new cockpit navigation technology that provides a higher degree of accuracy than previous systems. As a result, FMS allows pilots to more precisely adhere to noise abatement corridors. However, this precision can also concentrate flights in a narrower corridor over the ground.

There are currently two departure procedures used for those aircraft with a final destination east of Seattle when departing to the north. The Summa departure procedure is assigned to those aircraft with final destinations southeast of Seattle. The Mountain departure procedure is assigned to those aircraft with final destinations east of Seattle. An FMS procedure is already in use for the Mountain departure.

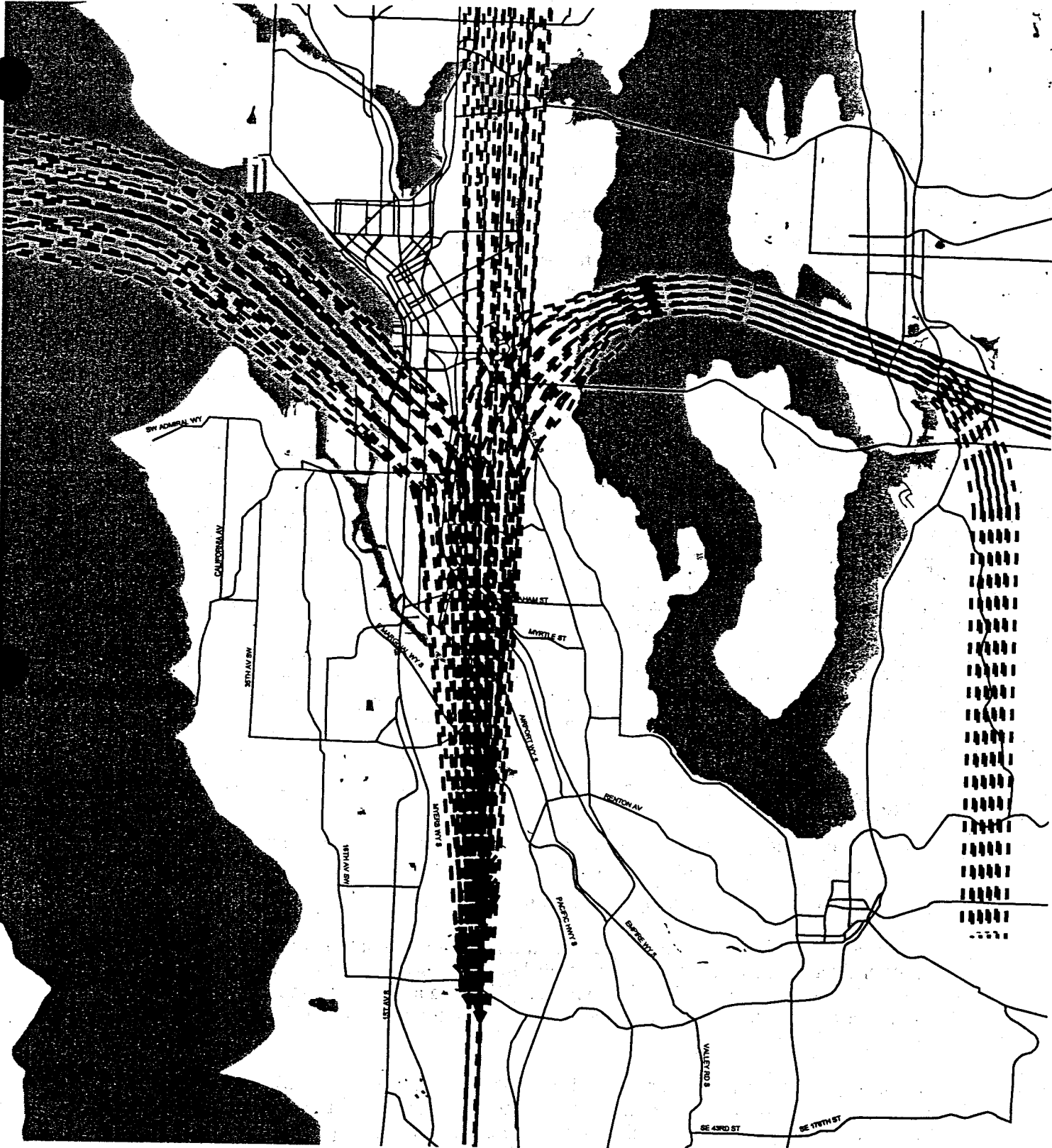
This alternative would define an FMS track for the Summa departure, the only north flow, east turn flight track where an FMS procedure does not already exist. An FMS procedure would follow the existing over water (between the land masses of the City of Medina and the City of Mercer Island) departure track more closely. This alternative would also concentrate flights over the land portion of the track, the west side of Lake Washington as well as the east side of Lake Washington.

As newer technology is implemented in aircraft cockpits, either through the purchase of new aircraft or retrofitting older models, FMS will become a dominant navigation method. At present roughly 50% of the jet fleet at Sea-Tac is FMS equipped, while upwards of 90% of the jet fleet at Sea-Tac is expected to have FMS by 2006. FAA and airlines currently support use of FMS procedures, and these will continue to develop as the fleet is equipped. In general, only the newest and quietest aircraft are equipped with FMS.

Noise Analysis: The same features, which make FMS a desirable component for the Duwamish/Elliott Bay corridor, cause it to be more of a mixed blessing on the east turn. Like the Duwamish, FMS on the east turn is not a new flight track, but an application of newer technology to an existing track. Results indicate:

- On an annual basis, there would be no change in population affected,
- On a north flow day slightly (2%) fewer total people would be exposed to 55 DNL and less people would be potentially awakened.

The analysis on speech interference indicated that no measurable change would exist when compared to the status quo. Analysis conducted on potential sleep interference, indicated that a decrease of approximately 8% in the number of people that could potentially be awakened.



North 10000 0 10000 20000 Feet

Figure 5 Flight Tracks Showing Flight Management System (FMS) for East-Turn Flights

 Departure Tracks

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 9

(3) North Flow: Split East Turn – (Figure #6)

The initial proposal from the Committee was for a true dispersal of flights on the east turn – meaning an altitude-based turn so the aircraft turn at many different locations. FAA was approached with this alternative to determine its feasibility from a safety and efficiency perspective, and it created many safety concerns. FAA suggested an alternative that would respond to the Committee's objective, while meeting an initial screening for safety and efficiency. This alternative became known as the split east turn and it was the alternative analyzed. Because this alternative did not affect the 65 DNL contour, the other descriptors of noise exposure impacts became more prominent in the analysis.

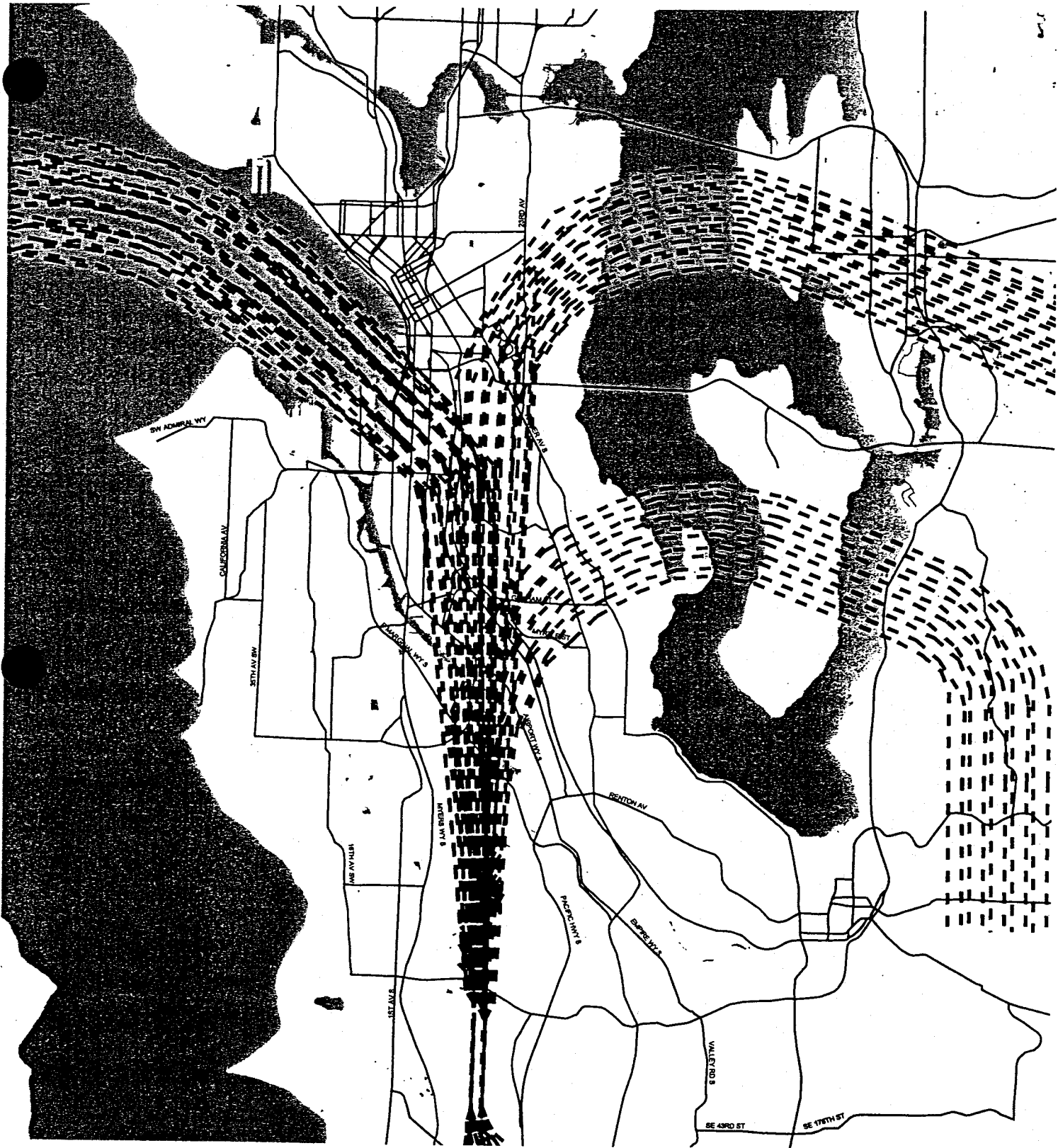
This alternative would divide the existing east turn into two corridors (Summa and Mountain) based on the ATC departure procedure. Aircraft headed east are assigned the Mountain procedure; aircraft headed southeast are assigned the Summa departure. With this alternative, the Summa procedure would turn east at the earliest point possible, approximately over Boeing Field, or at about 5 miles from the Airport. The Mountain procedure would turn east at approximately 9 miles north of Sea-Tac, which is one mile north of the current turn. FAA procedures require a minimum aircraft separation of 3 miles both in-trail and laterally although a greater distance is desirable to maintain adequate parallel separation between flights.

Noise Analysis: The split east turn is by far the most controversial flight track alternative under consideration because splitting one track into two reduces noise levels for people under the existing track, but raises noise levels for people under the newly created track(s). Results indicate:

- Noise exposure impacts are mixed as impacts increase to some areas and decrease to others
- Changes in noise exposure result from shifting some flights to the north of their current location and others to the south
- About 30% increase in people potentially awakened

On a north flow day, the split east turn would increase population within the 55 DNL contour by approximately 8%, which translates into an increase of approximately 3,480 people at this noise level. The analysis also predicted a 2% decrease in the population impacted by 60 DNL. No change would be anticipated in noise levels of 65 DNL or higher.

For speech interference, the analysis showed that the number of people exposed to minutes above 65 dBA would increase at some levels and decrease at others. This can be attributed to the dispersal of flights, spreading out the noise, impacting new residents, and decreasing impacts for some residents. For those residents experiencing above 60 minutes a day above 65 dBA, the population impacted would decrease by approximately 13%. Residents experiencing more than 10 minutes a day above 65 dBA would increase by approximately 23%.



North 10000 0 10000 20000 Feet

Figure 6 Flight Tracks Showing Split East Turn

 Departure Tracks

Seattle-Tacoma

International Airport
FAR Part 150 Study Update



COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 10

Sleep interference analysis indicated an increase of approximately 30% in the number of people impacted with this alternative. This translates into an increase in potential awakenings.

4. Summary of the CAC/TAC Recommendations on Flight Tracks

Flight tracks have been a subject discussed by the Citizen Advisory Committee and its various subcommittees from the beginning of the Study in 1998. Throughout the duration of the Study, a variety of opinions were expressed by the committee members as well as from members of the public who attended the committee meetings and the Open Houses. On April 26th, the recommendations of the Subcommittees were brought before the combined CAC/TAC for discussion and development of a recommendation. Key themes expressed at these meetings are noted in this section. It is anticipated that these, as well as other issues, will be raised by the committee members as representatives of their King County District, or local communities at the upcoming Port Commission meetings.

Attachment 1 lists the record of the votes taken on flight tracks at the April 26th meeting. The following summarizes these votes. The Committee spent considerable attention on the wording of their recommendations, as reflected in the attachment and the underlined sections below.

A. CAC/TAC's Recommendations on South Flow Alternatives:

There was no unanimous position on any South Flow alternative although there was a majority support for two of the three alternatives. The Committee expressed its support for the concept of flight track dispersion although there was dissatisfaction with the specifics of all the alternatives under consideration (when the turns into the Valley occur and where in the Valley flights overfly). The Committee believes that more study of dispersion alternatives is desirable. Their recommendations on the alternatives are as follows:

Support the South Flow Two Track Alternative with further consideration of options to disperse Elma and west bound traffic

Yes: 15, No: 1, Abstain: 7

Oppose the south flow three track option as evaluated by the study

Yes: 17, No: 0, Abstain: 5

Support nighttime (11pm-6am) use of a corridor through Commencement Bay for west bound south departures.

Yes: 19, No: 0, Abstain: 4

Community Input. In Committee meetings and Open Houses there was little public comment relative to any of the south flow flight track alternatives.

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 11

B. CAC/TAC Recommendations on North Flow Alternatives:

The Committee's deliberations on north flow alternatives were extensive and involved a detailed discussion of the particular wording of their votes. The Committee expressed its support for the concept of flight track dispersion, although there was a significant difference of opinion on the specifics of the alternatives under consideration. Without doubt, the greatest consensus was on the issue of the increased use of the Duwamish/Elliott Bay corridor especially when combined with the use of FMS.

Support for equitable dispersion on the east turn option was linked to maximum use of the Duwamish/Elliott Bay corridor and to a fuller study of dispersion alternatives. The Split East Turn was supported if no other dispersion alternative was found to be feasible or desirable, and if it was linked to the maximum possible use of the Duwamish/Elliott Bay corridor.

A summary of the CAC/TAC votes follow:

Make Maximum Use of Duwamish/Elliott Bay Corridor with FMS

Yes: 19, No: 1, Abstain: 3

If and only if Duwamish/Elliott Bay corridor capacity is fully utilized, use north flow dispersion of east turn flights; perform detailed study of equitable dispersion alternatives to be completed no later than January 1, 2002.

Yes: 14, No: 4, Abstain: 5

If and only if Duwamish/Elliott Bay corridor capacity is fully utilized, use north flow split east turn if dispersion is determined impossible after detailed study.

Yes: 11, No: 5, Abstain: 7

Oppose the stand alone split east turn. Meaning that the committee opposes the split east turn without the Duwamish recommendation.

Yes: 11, No: 7, Abstain: 5

Support the status quo on the North Flow East Turn

Yes: 0, No: 20, Abstain: 3

Community Input. There was substantial public comment concerning the north flow flight tracks, both for and against the east turn alternatives. There was generally a desire for sharing expressed by those living under the existing track. That concept was not supported by those who would be impacted by a new track. One common theme that was heard throughout the deliberations of the Committees, was the idea of reducing overall noise. Citizens expressed their desire to work together for a solution to reduce overall noise and to not pit one community against another.

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 12

STAFF RECOMMENDATIONS

Several criteria were set at the beginning of the Study by staff to help guide the process. These criteria were outlined in the Public Participation Plan and discussed at the outset of the Study. These criteria, or principles, as stated in the plan, are as follows:

- The proposed Part 150 noise mitigation program will improve the overall noise environment, not shift noise from one residential community to another.
- Programs, which benefit a community without adversely affecting another community, will be given priority.
- Programs reducing the highest residential community noise levels, without adversely affecting another community, will be given priority.
- The Part 150 Study Update will strive for a balanced approach producing realistic and practical solutions fair to both aviation and non-aviation interests.
- Regulatory constraints on the operating capacity of the Airport will not be entertained.

Ideally, new flight paths would reduce overall noise by offering environmental benefits, not create new noise impacts in residential communities (that is, shift noise from one community to another), and would not compromise safety and efficiency of the air traffic system.

Because meeting these criteria is so difficult, flight tracks are not easily or often changed, in Seattle, or in other regions of the country. FAA has altered flight patterns in the Seattle area in the past for reasons of safety and efficiency; most recently was the implementation of the 4-post plan in 1991. The motivation for alternatives considered in this Study, however, is noise reduction, so evaluation criteria are based on noise impacts.

In the past, the Port of Seattle has indicated that the shifting of noise from one community to another was not desirable. In 1990, the Port of Seattle set into place the Mediation Agreement that had a goal of reducing overall noise levels for the Seattle region. This process involved citizens, the airlines, the FAA, the users of the Airport, as well as Port staff. The theme of developing programs that reduce overall noise, and not simply shifting it from one community to another has been heard throughout this Part 150 Study Update by many citizens.

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 13

A. South Flow Departure Flight Tracks

Recommendation: Port Staff recommends the further study and coordination of the nighttime (midnight to 5 AM) use of Commencement Bay corridor on a more regular basis. Port staff, however, does not recommend implementation of the two or three track dispersal options considered by the Study at this time.

Nighttime Use of Commencement Bay - The south flow Commencement Bay flight track alternative was favored by members of the Committees. As this track is currently being used at times by ATC, it would not constitute a flight track change. Committee members saw the Commencement Bay nighttime alternative as a way to permanently lower the impacts of south flow nighttime departures for most residents. The Committee vote, however, endorsed an extension of the nighttime hours beyond what was considered during the Study. Specifically the alternative evaluated would use the Commencement Bay track from midnight to 5 AM when traffic levels are very low; whereas the Committee language recommended use of this track from 11 PM to 7 AM. Discussions with FAA indicate that traffic levels during this extended period would be too high to allow use of this procedure for all flights.

It is important to recognize, when considering the Commencement Bay nighttime alternative, that some of the increased impact under this alternative could potentially fall to residents of Pierce County. As currently constituted the CAC/TAC Committee includes representation from all districts of King County, but no farther, because the effects of the Part 150 Study recommendations were not originally expected to extend beyond King County. Before further consideration of this option, some coordination with representatives of Pierce County would be necessary. As a result, staff recommends that the original alternative (departures between midnight and 5 AM) be carried forward to FAA for further consideration after coordination with representatives from Pierce County.

Two Track - The two-track alternative offers increases and decreases in the number of people impacted depending on the DNL level being examined. Although it would offer noise relief in some areas, the overall reduction would be considerably less than the three-track alternative, which was not favored by the Committee. Furthermore, the Committee has stated its view that the tracks considered did not meet their ideal goal of moving most traffic into the Green River Valley away from residential areas, an option that the FAA did not find feasible.

The Operations Subcommittee and the Citizen's and Technical Advisory Committees voted to recommend the two-track alternative, because it involves some dispersion and sharing of the noise burden, and moving noise to less populated areas. The Committee's position was that shifting of noise from one community to another is acceptable for general noise relief in certain cases. From the Committee's perspective, shifting the noise could mean sharing it. However, the Committee was not completely satisfied that this alternative offered the best possible dispersion option and was interested in further pursuing tracks with lower population impacts.

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 14

The Staff does not recommend this alternative as a noise abatement procedure at this time. The predominant number of homes currently impacted have been insulated. Therefore the benefit of the total noise reduction does not outweigh the impacts of people not currently under a flight track.

Three Track - An overview of all the south flow alternatives indicates that the three-track offers the greatest potential for total noise reduction of the options considered. However, that decrease in total population impacted (a reduction of about 27% [11,900 people] within the 65 DNL) would be gained at the expense of some close-in residential areas (approximately 5,500 residents), which would be exposed to either higher noise levels or new noise. These residents would be located between the Airport and Puget Sound, largely in the City of Des Moines. Many of these residents are not within the current 65 DNL, while some of them are within the current 65 DNL but would experience greater noise levels with this alternative. The Committees rejected this alternative because the westbound traffic would fly directly over the heart of the City of Des Moines.

The Staff does not recommend this alternative as a noise abatement procedure at this time. The predominant number of homes currently impacted have been insulated. Therefore the benefit of the total noise reduction does not outweigh the impacts of people not currently under a flight track.

In summary, these alternatives would impact new residents by shifting some noise, and would not reduce overall noise levels for the region. As a result, staff does not concur with the recommendation of the Committees and does not recommend either the two or three track alternative be carried forward at this time.

B. North Flow Departure Tracks

Recommendation: For north flow operations, the Port Staff recommends for consideration, further analysis of the increased use of the Duwamish/Elliott Bay Corridor (with FMS); however, Staff does not recommend the East Turn FMS or Split East Turn alternatives at this time.

Duwamish/Elliott Bay Corridor - This alternative is one that has achieved the highest degree of consensus and support from the Committee and the general public, and offers the likeliest potential for reducing overall noise impacts on the population of the Seattle area. This is especially true if the procedure is used with FMS technology to keep the aircraft tightly within the noise abatement corridor. The increasing availability of FMS technology ensures that the rate of adherence to the optimum flight track will increase over time. The new Noise Monitoring System currently being installed at Sea-Tac will be able to produce detailed reports on adherence to this track if implemented.

The Duwamish/Elliott Bay flight pattern is already established as a noise abatement procedure and is the preferred procedure for flights during the nighttime hours. However, there are communities located on the edges of Elliott Bay as well as communities located on the west side of Puget Sound that may potentially receive more noise with this alternative. Since there is no indication of the nature or number of flights, which may move to the Duwamish, no analysis has been completed to quantify the potential benefits and/or increased impacts of this change. Staff feels, therefore, that this alternative warrants more analysis.

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 15

Port staff has been working with the FAA to determine which flights, if any, may be feasibly moved from the East Turn to over Elliott Bay. Because of safety and efficiency concerns, ATC is not sure of the answer to this question. In January of this year, a letter was sent from the Aviation Director to the FAA requesting that a Task Force be established to look at this issue. The response received from FAA indicated that this Part 150 Study Update would need to be completed prior to any flight tracks being further analyzed by the FAA.

For these reasons, staff recommends that the Port Commission vigorously pursue options for determining the feasibility of increased use of the Duwamish/Elliott corridor. No further analysis of this alternative to determine the potential benefits and/or increased impacts can be determined until the possible options are defined. Once that information has been determined, a further determination on whether to support increased use of the Duwamish/Elliott Bay Corridor can be made.

North Flow East Turn FMS - The Committee did not support use of FMS over any residential area. Although this alternative would reduce overall impacts, it would also slightly increase impact over a narrower corridor on the ground. The Committee agreed that FMS was not desirable over residential areas in general for this reason.

FMS flight tracks can become "pencil thin" on straight portions of the flight track. When turning, however, the operating characteristics of different types of aircraft will cause dispersion. Though not as wide as without FMS, the difference between the two is not that great.

This alternative, unlike the ones mentioned previously, would not impact new residents, and no increased impacts were found when compared to status quo. Since this procedure does not contribute toward the goal of reducing overall noise levels, staff recommends no change in the established procedures at this time. It should be noted, however, that FMS is the emerging navigation technology and most aircraft procedures in the country will increasingly rely on it during over next decade.

North Flow East Turn - Without a doubt, the east turn alternatives were the most controversial and engaged the highest level of public response. For many years, residents living under the east turn for north flow have been increasingly bothered by aircraft overflights, and have been seeking relief. In 1987, in response to these concerns, a scatter test for the east turn conducted. The idea then, as now, was to provide relief to areas under the existing flight tracks by dispersing or sharing the noise. That test was not considered a success here at Sea-Tac and that has also been the findings at other airports that have attempted such a test. Those tests, as well as the one at Sea-Tac, generated considerable opposition from areas newly affected by the scattered tracks and indicated that those communities that originally sought the scatter test did not notice a significant difference in noise impacts. As a result, residents living under the north flow east turn have been seeking alternate solutions, and this Part 150 Study offered an opportunity to consider the issue again.

Although Operations Subcommittee members again suggested a dispersion alternative, FAA did not find multiple tracks feasible and suggested a split east turn as an alternative for evaluation. Although this split turn alternative has found considerable support among communities under the existing flight path, it has also created a significant amount of unrest in areas that would be newly impacted. To some degree, the Committee's recommendations reflected this division with a number of votes taken on the topic.

COMMISSION AGENDA

M. R. Dinsmore, Executive Director

May 8, 2000

Page 16

Recognizing that the goal is to reduce overall noise levels, the Committee linked support for any east turn dispersion or split option to increasing the use of the Duwamish/Elliott Bay corridor (with FMS), thus insuring that the flights to be distributed would be fewer than the current number. Secondly, recognizing that the split east turn, as proposed, was not acceptable to many people, yet favoring the concept of dispersing or sharing the noise in principle, the Committee voted to support further study of a better dispersion option yet to be defined. Finally, if no other dispersion option is found to be feasible, a split east turn linked to maximum use of the Duwamish/Elliott Bay corridor was recommended. The split east turn as a stand-alone option, that is absent increased use of the Duwamish/Elliott Bay corridor, was not recommended.

Staff recognizes the desire of those communities, living under the current east turn flight pattern, to reduce current noise levels as well as the frequency of overflights in their neighborhoods. And, as noted above, staff recommends that the Port take a strong advocacy position in favor of defining what an increased use of the Duwamish/Elliott Bay corridor would mean in practical terms. Keeping in mind the primary goal of this effort, to reduce overall noise levels within the Seattle metropolitan area, staff believes that maximizing the number of flights on the west turn through the Duwamish/Elliott Bay Corridor holds the most potential for achieving that goal.

Although the concept of dispersal or sharing has a theoretical appeal, analysis indicates that the actual result would be an increase in noise for a large number of people and a decrease in noise for a small number of people. In effect, sharing means shifting the noise, and Staff does not believe that the benefits gained from this approach would justify that result. Consequently, Staff does not recommend pursuing the split east turn or a dispersal concept at this time, but does commit to working as closely as possible with FAA and the public to determine if a viable option for increasing the use of the Duwamish/Elliott Bay corridor can be developed.

Attachment 1

Support the south flow two track alternative with further consideration of options to disperse Elmaa and westbound traffic

Yes: 15

Lloyd Docter – City of Federal Way
Bud Jones – City of SeaTac
Guy Spencer – City of Normandy Park
Doug Hakala – King County District #3
Duane Anderson – King County District #5
Mike Ranta – King County District #10
Corbitt Loch – City of Des Moines
Billy Self – Southwest Airlines

Richard Kennedy – City of Des Moines
Rose Clark – City of Burien
Arden Forrey – King County District #2
Mike Rees – King County District #4
Bob Rudolph – King County District #6
Al Furney – King County District #13
Rob Odle – City of Burien

No: 1

JoAnne Schaut – City of Kent

Abstain: 7

Jim Combs – City of Seattle
Craig Ward – City of SeaTac
Dick Haferbecker – Alaska Airlines
Cynthia Stewart – Boeing Field

Connie Marshall – King County District #12
Loyce Saar – City of SeaTac
Steve Kiehl – PSRC

Attachment 1

Oppose the south flow three-track option as evaluated by the study

Yes: 17

Lloyd Docter – City of Federal Way
Richard Kennedy – City of Des Moines
Rose Clark – City of Burien
Doug Hakala – King County District #3
Mike Rees – King County District #4
Bob Rudolph – King County District #6
Al Furney – King County District #13
Billy Self – Southwest Airlines
Cynthia Stewart – Boeing Field

JoAnne Schaut – City of Kent
Bud Jones – City of SeaTac
Guy Spencer – City of Normandy Park
Arden Forrey – King County District #2
Duane Anderson – King County District #5
Mike Ranta – King County District #10
Corbitt Loch – City of Des Moines
Rob Odle – City of Burien

No: 0

Abstain: 5

Jim Combs – City of Seattle
Craig Ward – City of SeaTac
Dick Haferbecker – Alaska Airlines

Connie Marshall – King County District #12
Loyce Saar – City of SeaTac
Steve Kiehl - PSRC

Attachment 1

Support nighttime (11pm-6am) use of a corridor through Commencement Bay for west bound south departures

Yes: 19

Lloyd Docter – City of Federal Way
Richard Kennedy – City of Des Moines
Jim Combs – City of Seattle
Arden Forrey – King County District #2
Mike Rees – King County District #4
Mike Ranta – King County District #10
Al Furney – King County District #13
Rob Odle – City of Burien
Steve Kiehl – PSRC
Bob Rudolph – King County District #6

JoAnne Schaut – City of Kent
Rose Clark – City of Burien
Guy Spencer – City of Normandy Park
Doug Hakala – King County District #3
Duane Anderson – King County District #5
Connie Marshall – King County District #12
Corbitt Loch – City of Des Moines
Billy Self – Southwest Airlines
Cynthia Stewart – Boeing Field

No: 0

Abstain: 4

Bud Jones – City of SeaTac
Loyce Saar – City of SeaTac

Craig Ward – City of SeaTac
Dick Haferbecker – Alaska Airlines

Attachment 1

Make maximum use of Elliot Bay corridor with FMS

Yes: 19

Lloyd Docter – City of Federal Way
Richard Kennedy – City of Des Moines
Jim Combs – City of Seattle
Arden Forrey – King County District #2
Mike Ranta – King County District #10
Al Furney – King County District #13
Rob Odle – City of Burien
Steve Kiehl – PSRC
Bob Rudolph – King County District #6
Bud Jones – City of SeaTac

JoAnne Schaut – City of Kent
Rose Clark – City of Burien
Guy Spencer – City of Normandy Park
Doug Hakala – King County District #3
Duane Anderson – King County District #5
Connie Marshall – King County District #12
Corbitt Loch – City of Des Moines
Billy Self – Southwest Airlines
Dick Haferbecker – Alaska Airlines

No: 1

Cynthia Stewart – Boeing Field

Abstain: 3

Mike Rees – King County District #4
Loyce Saar – City of SeaTac

Craig Ward – City of SeaTac

Attachment 1

If and only if Duwamish/Elliot Bay corridor capacity is fully utilized, use north flow dispersion of east turn flights; perform detailed study of equitable dispersion alternatives to be completed no later than January 1, 2002.

Yes: 14

Lloyd Docter – City of Federal Way
Bud Jones – City of SeaTac
Guy Spencer – City of Normandy Park
Doug Hakala – King County District #3
Bob Rudolph – King County District #6
Al Furney – King County District #13
Rob Odle – City of Burien

Richard Kennedy – City of Des Moines
Rose Clark – City of Burien
Arden Forrey – King County District #2
Mike Rees – King County District #4
Mike Ranta – King County District #10
Corbitt Loch – City of Des Moines
Billy Self – Southwest Airlines

No: 4

Jim Combs – City of Seattle
Connie Marshall – King County District #12

Duane Anderson – King County District #5
Cynthia Stewart – Boeing Field

Abstain: 5

JoAnne Schaut – City of Kent
Loyce Saar – City of SeaTac
Steve Kiehl – PSRC

Craig Ward – City of SeaTac
Dick Haferbecker – Alaska Airlines

Attachment 1

If and only if Duwamish/Elliot Bay corridor capacity is fully utilized, use north flow split east turn if dispersion is determined impossible after detailed study

Yes: 11

Lloyd Docter – City of Federal Way
Rose Clark – City of Burien
Doug Hakala – King County District #3
Bob Rudolph – King County District #6
Al Furney – King County District #13
Rob Odle – City of Burien

Richard Kennedy – City of Des Moines
Guy Spencer – City of Normandy Park
Mike Rees – King County District #4
Mike Ranta – King County District #10
Corbitt Loch – City of Des Moines

No: 5

Jim Combs – City of Seattle
Connie Marshall – King County District #12
Cynthia Stewart – Boeing Field

Duane Anderson – King County District #5
Billy Self – Southwest Airlines

Abstain: 7

JoAnne Schaut – City of Kent
Arden Forrey – King County District #2
Loyce Saar – City of SeaTac
Steve Kiehl – PSRC

Bud Jones – City of SeaTac
Craig Ward – City of SeaTac
Dick Haferbecker – Alaska Airlines

Attachment 1

Oppose the stand alone split east turn. Meaning that the committee opposes the split east turn without the Duwamish recommendation

Yes: 11

JoAnne Schaut – City of Kent
Rose Clark – City of Burien
Arden Forrey – King County District #13
Mike Rees – King County District #4
Connie Marshall – King County District #12
Cynthia Stewart – Boeing Field

Bud Jones – City of SeaTac
Jim Combs – City of Seattle
Doug Hakala – King County District #3
Duane Anderson – King County District #5
Rob Odle – City of Burien

No: 7

Lloyd Docter – City of Federal Way
Guy Spencer – City of Normandy Park
Mike Ranta – King County District #10
Corbitt Loch – City of Des Moines

Richard Kennedy – City of Des Moines
Bob Rudolph – King County District #6
Al Furney – King County District #13

Abstain: 5

Craig Ward – City of SeaTac
Dick Haferbecker – Alaska Airlines
Steve Kiehl - PSRC

Loyce Saar – City of SeaTac
Billy Self – Southwest Airlines

Attachment 1

Support the status quo on the north flow east turn

Yes: 0

No: 20

Lloyd Docter – City of Federal Way
Richard Kennedy – City of Des Moines
Rose Clark – City of Burien
Guy Spencer – City of Normandy Park
Doug Hakala – King County District #3
Duane Anderson – King County District #5
Mike Ranta – King County District #10
Al Furney – King County District #13
Rob Odle – City of Burien
Billy Self – Southwest Airlines

JoAnne Schaut – City of Kent
Bud Jones – City of SeaTac
Jim Combs – City of Seattle
Arden Forrey – King County District #13
Mike Rees – King County District #4
Bob Rudolph – King County District #6
Connie Marshall – King County District #12
Corbitt Loch – City of Des Moines
Dick Haferbecker – Alaska Airlines
Cynthia Stewart – Boeing Field

Abstain: 3

Craig Ward – City of SeaTac
Steve Kiehl - PSRC

Loyce Saar – City of SeaTac

PORT OF SEATTLE
MEMORANDUM

DATE: May 15, 2000

TO: Port of Seattle Commission

FROM: Charles Blood, General Manager, Airfield Line of Business

SUBJECT: Clarification of Information Contained in Memo on Staff's Recommendation on Flight Track Issues

Several members of the Operations Subcommittee did not agree with Staff's portrayal of the Committee's desire in regards to the use of the Duwamish/Elliott Bay Corridor and asked that it be further clarified for your deliberations.

In the memo you received, on Page 16, Staff had indicated that the Committee linked support for east turn dispersion or split option to increased use of the Duwamish/Elliott Bay corridor (with FMS). The first sentence should read:

"Recognizing that the goal is to reduce overall noise levels, the Committee linked support for any east turn dispersion or split option to fully utilizing the capacity of the Duwamish/Elliott Bay corridor (with FMS), thus insuring that the flights to be distributed would be fewer than the current number."

Several Committee members also requested that it be made clear that they do not agree with the first criteria outlined on page 12 of the memo stating, "The proposed Part 150 noise mitigation program will improve the overall noise environment, not shift noise from one residential community to another." These criteria were set at the beginning of the Study by Staff and agreed to by members of the Citizen's and Technical Advisory Committee members (CAC/TAC). In June of 1999, the Operations Subcommittee took a straw vote to remove the words, "not shift noise from one residential community to another" from the criteria. The proposed changed criteria reading:

The proposed Part 150 noise mitigation program will improve the overall noise environment

The vote at the Operations Subcommittee meeting was not a consensus and this measure was not voted on by the full CAC/TAC membership. Staff continues to strongly support the original wording of the criteria and does not consider shifting noise from one community to over another community as improving the overall noise environment.



U.S. Department
of Transportation

Federal Aviation
Administration

FEB 11 2000

Gina Marie Lindsey
Director, Aviation Division
Port of Seattle
Seattle-Tacoma International Airport
P. O. Box 68727
Seattle, WA 98168

Northwest Mountain Region
Colorado, Idaho, Montana, Oregon
Utah, Washington, Wyoming

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AVIATION MANAGING DIRECTOR

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To	Ruk Dunkelberg	From	Ron Szymanski		
Co./Dept.		Co.	POS		
Phone #	(18) 585-8844	Phone #	(206) 248-6863		
Fax #	(918) 585-8857	Fax #			

Dear Ms. Lindsey:

I have reviewed your letter of January 25, 2000, requesting that a task force be initiated to "consider all possible solutions to the problem of redirecting some portion of east turn traffic westbound through Elliott Bay."

While I recognize the sincerity of your request, I don't feel I am at liberty to initiate such a task force without seriously compromising the integrity of the FAR Part 150 Study being considered for your airport and surrounding community.

I am aware of some of the challenges associated with administering such a complex study as your FAR Part 150. However, I feel at this time it is critical for the process to continue through conclusion.

Through this important process and the participation of the interested communities, I am confident many recommendations will be considered. When presented with the final product, you can be assured we will review recommendations with our focus on safety and efficiency of operations within the National Airspace System.

I do appreciate the efforts you and your staff have made to date to ensure the best possible results of the Part 150 Study and look forward to the completed report.

Sincerely,

Daniel A. Boyle
Acting Manager, Air Traffic Division

**Appendix Eleven. Comments on Staff Flight Track
Recommendations**

**CAC/TAC COMMITTEE REPORT RELATING TO NORTH FLOW FLIGHT TRACKS
SEATAC PART 150 STUDY, MAY 9, 2000**

A. DESCRIPTION OF THE NORTH FLOW VOTES by CAC/TAC APRIL 26, 2000

1. **Make maximum use of the Duwamish/Elliott Bay corridor with FMS**
Yes: 19 No: 1 Abstain: 3

The committee almost unanimously favored this. The Duwamish/Elliott Bay corridor is an industrial/water corridor and was the only flight path for departing jets in north flow prior to initiation of the east turn in 1979. It is recognized as the only noise abatement corridor in north flow conditions. The committee recommends that its use be maximized in conjunction with FMS technology to keep the planes in the middle of the corridor. The Committee recognizes that the FAA will have to study this recommendation to determine the maximum operational capacity of the Duwamish. This study will include operational issues outside of immediate SeaTac airspace.

2. **If and only if Duwamish/Elliott Bay corridor capacity is fully utilized, use north flow dispersion of east turn flights; perform detailed study of equitable dispersion alternatives to be completed no later than January 1, 2002**

Yes: 14 No: 4 Abstain: 5

By this super majority vote the committee voted for maximum use of the Duwamish and asked the FAA to initiate a study of an equitable dispersion of departing jets on the east turn to be completed no later than January 1, 2002. During the Part 150 study, the committee asked the Consultant to model the noise impacts of an altitude based dispersion on the east turn. This modeling was done using a 4000 foot turning altitude for the planes and produced a rather even dispersion of the noise impacts on the east turn. However, at the 10/6/99 meeting the FAA reported it could not do this particular altitude based dispersion due to controller workload and safety issues. The committee recommended that another review of equitable dispersion alternatives should be undertaken by the FAA.

3. **If and only if the Duwamish/Elliott Bay corridor is fully utilized, use north flow split east turn if dispersion is determined impossible after detailed study.**

Yes: 11 No: 5 Abstain: 7

By another super majority vote the committee voted that if, after appropriate study, an equitable dispersion alternative for departing jets on the east turn cannot be found, that the split east turn as presented by the FAA during the Part 150 study should be implemented.

4. **Oppose the stand alone split east turn, meaning that the committee opposes the split east turn without the Duwamish recommendation.**

Yes: 11 No: 7 Abstain: 5

The stand alone split east turn was not recommended by the majority of the committee because it ignores utilizing an industrial corridor which the

committee agrees is the most appropriate avenue for flight traffic.

5. Support the status quo on the north flow east turn.

Yes: 0 No: 20 Abstain: 3

By a unanimous vote the committee agrees that the status quo is not acceptable on the east turn.

B. CONCLUSION

By this series of votes the CAC/TAC committees firmly supported the maximization of the Duwamish corridor operationally as determined by the FAA, in conjunction with a study of dispersion or a split east turn as part of a comprehensive package that the overall community would perceive as fair.

C. ANALYSIS OF THE PROBLEM

The east turn was implemented in the late 1970's during the gas shortage. Restrictions were placed on its use because departing jets flew over residential neighborhoods in east Seattle and the eastside for the first time. Due to the restrictions the FAA estimated that only 20% of departing jets could take the east turn and those that did were to be vectored to spread the noise impact. During the next several years the FAA lifted those restrictions. In 1987 all the Los Angeles basin flights were added to the east turn. Since 1990 traffic on the east turn has doubled. Both Mountain and SUMA departures follow the same 070 standard instrument departure heading. What was begun as a low volume procedure, accommodating at most 20% of 1979 SeaTac north flow departures and vectored to spread the noise impact, now is a concentrated corridor for 70% of the greatly increased 2000 SeaTac volume. At present 227 jets/day use the east turn on a north flow day. It is the heaviest departure corridor out of SeaTac, and it goes over heavily populated residential communities of Seattle and the eastside.

The CAC committee recognized this problem and asked the Part 150 consultant, Mr. Dunholter, to explore ways to mitigate it. He suggested an altitude based dispersion which would turn each plane when it achieved an altitude of 4000 feet. Noise modeling of this procedure produced a fairly even dispersion of noise among Seattle and eastside communities. However the FAA told the CAC committee that this procedure could not be done operationally. They presented instead a split east turn at 5 and 9 miles north of the airport as a procedure they could do safely and efficiently to meet the committee's goal of dispersion.

D. ANALYSIS OF POTENTIAL SOLUTIONS

The CAC committee asked Mr. Dunholter to do noise modeling of the split east turn versus the current procedure and to evaluate the following flight track options:

- Probable Number of Overflights by Geographic Area
- Number of People Likely to Be Annoyed by Aircraft Noise
- Number of People Experiencing Potential Speech Interference
- Number of People Potentially Awakened from Aircraft Noise

No noise modeling is available on the effects of increased use of the Duwamish, but if it were, it would demonstrate a further mitigation of overall noise, especially on the early east turn because SUMA departures relocated to the Duwamish would be subtracted from the

early turn.

1. OVERALL NOISE REDUCTION

There is overall noise reduction with the split turn. The first criterion selected by the CAC committee, the CAC committee consultants, and the Port of Seattle staff for study was Probable Number of Overflights by Geographic Area. Mr. Dunhofer selected 23 points as "representative locations for their surroundings". The selection of these locations is outlined in the Methodology section of the part 150 study and was approved by the CAC committee and Port of Seattle staff.

The total events/day exceeding 75 SEL decreases at 17 of the 23 points selected for study. Of the 17 most heavily populated areas studied north of the airport, 14 show a decrease in 75 SEL overflights/day, nine have a decrease in overflights of more than half. Of the six least densely populated locations, 3 show an increase and 3 show a decrease in 75 SEL overflights/day. These were locations selected by the consultant for analysis because they might show a difference between a split east turn and the current procedure. Indeed they do.

The population living within one nautical mile of each of the 23 sites selected for study has been calculated by the consultant. The total population is 149,371. 113,404 of these people, or 76%, would experience a decrease in 75 SEL overflights/day with a split turn. This data applies to the areas within one nautical mile of the 23 points. There is no reason to think this population is not representative of the general population in those areas as that was the criteria for their selection by the consultant.

That there are fewer points under the early split turn reflects the much shorter course the SUMA departures would take on the early turn. With the existing procedure, the SUMA departures fly three miles north of the 5 mile mark over populated Seattle neighborhoods before turning and then flying three more miles south over populated eastside residential neighborhoods since these flights are all headed to southern destinations.

With a split turn three of the four parameters chosen for study support an overall noise reduction. The fourth parameter, sleep disturbance, shows an increase with the split turn. Sleep disturbance is not as relevant because there is a curfew on the east turn from 10 PM to 6 AM. Its importance is mostly between 6-7 AM.

The overall DNL metric at the 60 level decreases by 1% with the split turn. On a north flow day, the 55 DNL increases by 8% while the 60 DNL decreases by 2%. While DNL accurately captures increased noise over newly exposed areas, it misses very substantial noise reductions in areas currently overflowed. As an example, Leschi and Madrona (points 8 and 9 on the enclosed map) are directly under the current east turn. These communities have a decrease in 75 SEL overflights/day from 156 to 58 with a split turn, a decrease in 80 SEL overflights/day from 88 to 31, and the 85 SEL overflights/day are reduced by two thirds with the split. With the DNL metric that substantial noise benefit is missed. Leschi/Madrona are counted as within the 55 DNL contour with both the single and split turn procedures. With the existing single track procedure Leschi and Madrona are just below the 60 DNL contour, close to 59 DNL. With the split turn procedure they are just above the 55 DNL contour, close to 56 DNL. A 3 DNL decrease is a reduction of noise by one half. This corresponds to the 50-60% decrease in overflights/day producing 75 and 80 SEL impacts over those communities. This benefit is entirely missed by the DNL metric. This applies as well to other locations north of the split which do not drop below the arbitrary 5 unit DNL measuring points even though they may have a substantial decrease in

overflights.

2. BENEFITS TO COMMUNITIES UNDER THE EXISTING TRACK

It is often said that a change in flight tracks does not benefit the people under the current track enough to justify exposing new people to noise. With the split east turn this is not the case. Most communities under the current track will experience roughly half the number of 75 SEL overflights/day. This is a substantial benefit to communities that have the entire noise burden now and it should not be dismissed or minimized.

The communities that would be under the early turn would obviously have an increase in jet noise. In the case of central Mercer Island that increase would be over 400%. This is because the baseline on central Mercer Island is the lowest of any location studied north of the airport, 13 SEL events/day. This low level of noise is not from overflights, but from events heard from a distance. An increase from low level noise produces a large percentage increase in noise. If the Los Angeles planes are rerouted to the Duwamish, the noise increase over central Mercer Island would be reduced by 45 planes/day.

3. NOISE IMPACTS ON THE TWO TURNS ARE EQUAL

The noise impacts are the same on the early and late turn despite the earlier turn being at a lower altitude. Mr. Dunholter stated that for an identical plane, similarly loaded, the noise difference of that plane on the early vs. the late turn typically would be 2 decibels. Mr. Dunholter said that this difference is not perceptible to the average person on the ground. Planes on the later turn are heavier and noisier which would tend to eliminate even that 2 db difference. This equality in noise impacts on the two turns is also demonstrated by DNL, SEL and TA data presented to the committee by the consultant. This data applies to an even split turn without increased use of the Duwamish.

4. NOISE IMPACT ON THE EARLY TURN WOULD BE SUBSTANTIALLY REDUCED WITH INCREASED USE OF DUWAMISH

If, for example, planes destined for the Los Angeles basin are shifted to the Duwamish, those 45 jets/day would be removed from the early turn. This would result in 68 planes/day on the early east turn, 114/day (a 50% reduction) on the late turn and 180/day out the Duwamish Industrial corridor using FMS technology.

E. PROBLEMATIC ISSUES DISCUSSED DURING THE PART 150 STUDY

1. Since the planes turning on the early east turn would be lower, would they not be louder and place an unfair burden on those communities? This is answered in D-3 above. The average difference in turning altitude between the two turns is approximately 2000 ft. This produces a 2 decibel difference in noise on average.
2. Why not put all the planes possible out the Duwamish and forget about dispersion or splitting the east turn? The Duwamish corridor has operational limits which involve potential crossover problems for planes bound for eastern or Los Angeles basin destinations. The FAA may determine that the Duwamish corridor is maximized operationally at present. The FAA has indicated that if any planes can be rerouted to the Duwamish from the east turn, the leading candidates are those bound for Los Angeles destination airports. These number only 45/day and would leave 182 planes/day on a single east turn.
3. Is it fair to place new noise over new communities? The number of jets on the east turn

has increased 100% in the past ten years and an additional 40% growth is anticipated in the next ten years. This is all "new noise" from an expanding vibrant economy. How can the Port of Seattle justify exposing the communities under the east turn to all this "new noise" without environmental assessment? This dramatic growth alone should be enough to justify a study of equitable east turn dispersion.

4. Does the Part 150 mandate permit an evaluation of potential flight track changes? The Part 150 regulations do permit this and the CAC committee voted unanimously at the June 1999 meeting to study dispersion on the east turn.

5. Won't the noise problem become moot when the noisiest planes are retired from the fleet? The biggest problem is frequency of flights. This will not change with the eventual retirement of the MD 80's and F 28's. If this retirement of the noisiest planes would solve the problem, why would people proposing this as a solution object to a split turn when they would get at most half the jets?

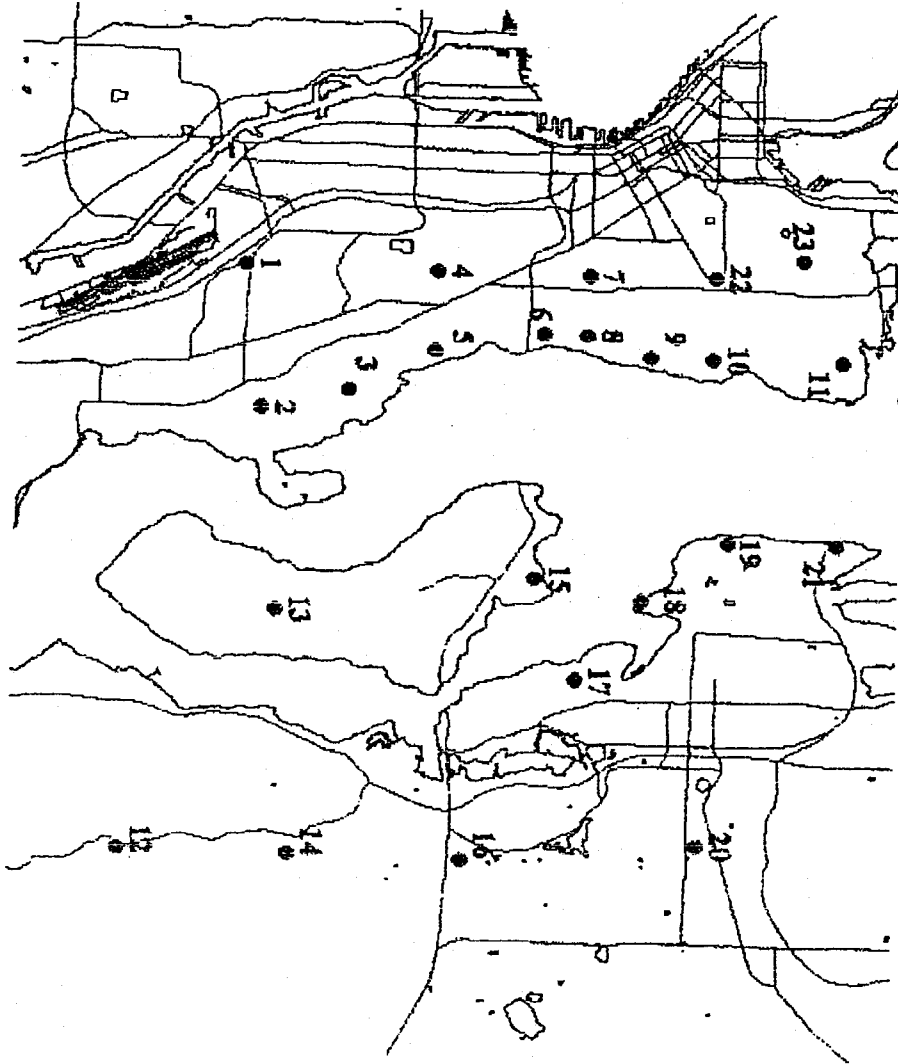
Probable Number of Overflights

Table III.18A-2 presents the number of daily aircraft overflights during north flow conditions at each of the locations shown in Exhibit III.18-6. This evaluation was prepared to consider frequency of overflights in each alternative. Table III.18A-2 shows that the following sites show a general decrease in the probable number of overflights; 1, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20, 21 and 22. The following sites would have a general increase in the probable number of overflights; 2, 3, 12, 13, 14 and 23.

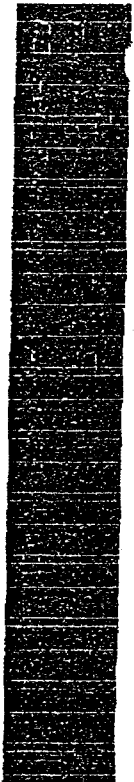
Table III.18A-2 Average Number of Daily Overflights during North Flow

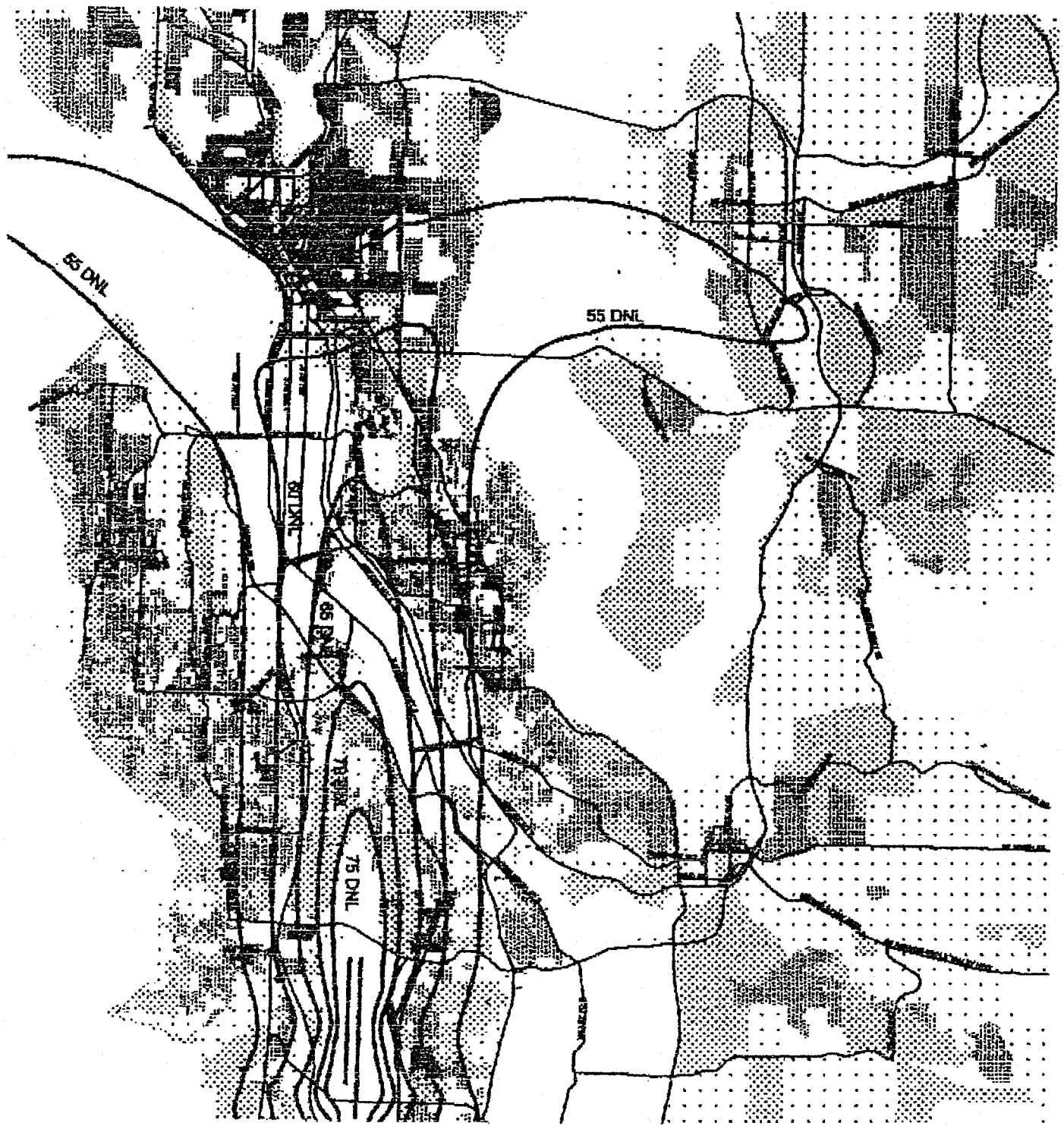
Location*	Existing Procedures					Number of Daily Flights Exceeding the SEL								
	90 SEL	85 SEL	80 SEL	75 SEL	70 SEL	Track III.18A (Spit East Turn)								
						90 SEL	85 SEL	80 SEL	75 SEL	70 SEL				
1	52	100	193	277	53	88	168	240						
2	0	2	16	51	12	29	61	100						
3	0	4	18	71	7	42	84	117						
4	17	77	129	231	10	34	77	147						
5	2	12	56	127	2	11	43	105						
6	9	49	88	156	2	10	29	70						
7	12	66	97	170	7	24	44	77						
8	11	63	88	168	3	13	31	58						
9	9	63	84	148	3	16	30	55						
10	3	27	69	119	3	18	33	54						
11	0	1	11	50	0	4	16	37						
12	0	4	22	23	1	5	45	60						
13	0	0	1	13	3	29	45	75						
14	0	4	33	42	0	3	31	55						
15	1	7	46	83	0	1	9	38						
16	0	10	60	78	0	1	11	37						
17	2	14	75	93	0	3	17	34						
18	3	15	77	103	1	6	20	36						
19	2	12	72	98	1	9	27	37						
20	0	2	15	65	0	5	10	32						
21	0	1	13	52	0	5	18	32						
22	0	5	27	77	1	12	43	66						
23	0	5	7	26	0	5	15	39						

Section III 01/1/00



North Points





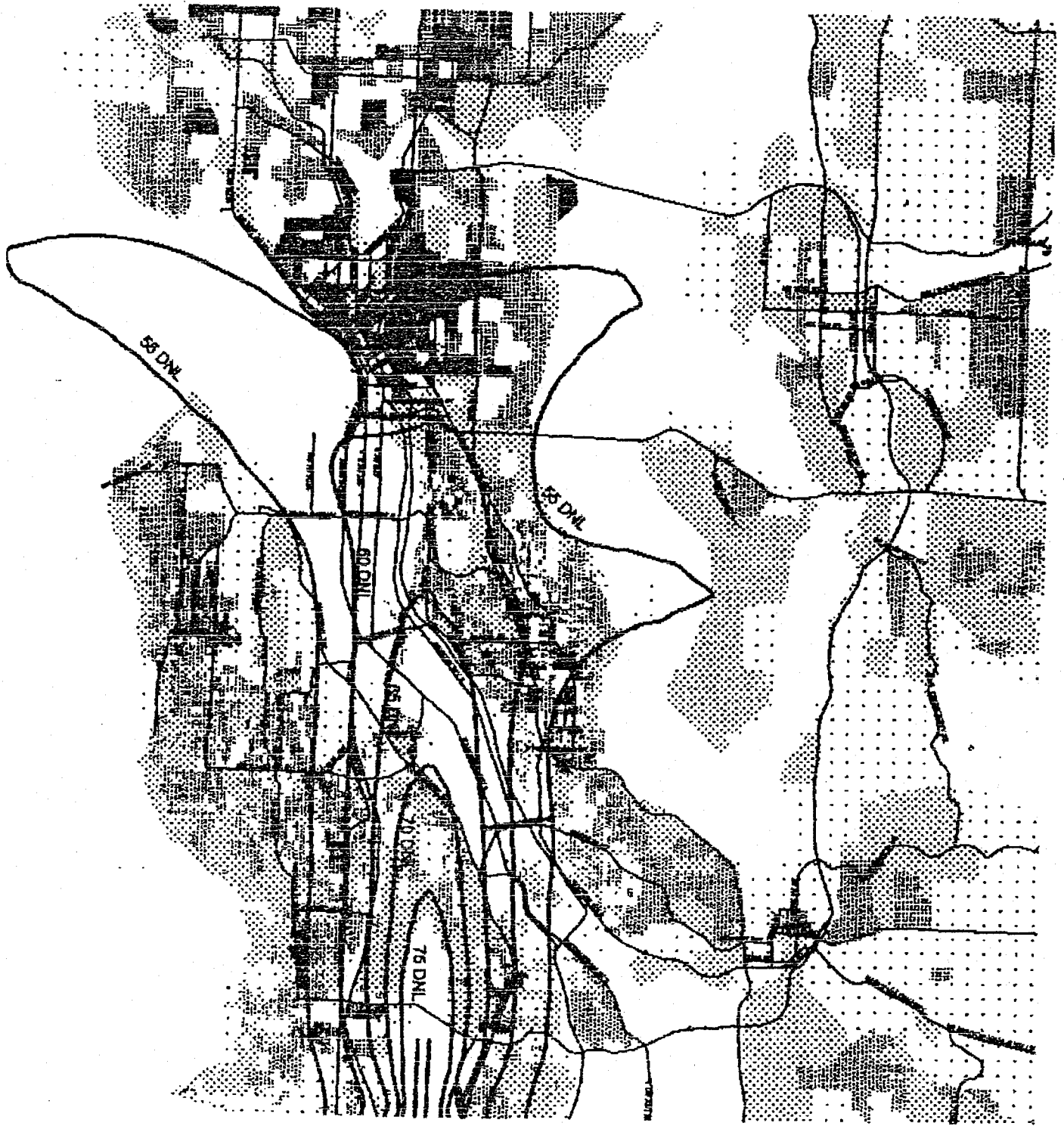
North 10000 0 10000 20000 Feet

18-2 Existing Conditions North Flow Only - DNL Contour

Population Density - Persons per Acre

0 - 0.5
0.5 - 4
4 - 8
8 - 12
12 - 14
14 - 100

Seattle-Tacoma International Airport
 FAR Part 150 Study Update



18 A-1 Dispersion Flight Tracks - North Flow Only DNL

Population Density - Persons per Acre

0 - 0.6
0.6 - 4
4 - 8
8 - 12
12 - 14
15 - 100

Seattle-Tacoma International Airport
 FAR Part 150 Study Update

August 11th, 1999

Barnard Dunkelberg & Company, Inc.
Cherry Street Building
1616 East 15th Street
Tulsa, Oklahoma 74120-6027

Attention: Ryk Dunkelberg

Dear Mr. Dunkelberg,

We represent the neighborhoods in the City of Seattle who are under the north flow east turn departure and south flow arrival flight paths of Sea-Tac airport. We are writing to you to provide our input to the Seattle-Tacoma Airport Part 150 noise impact study that your firm is currently conducting on behalf of the Port of Seattle.

As you may be aware, our neighborhoods have borne the brunt of an unfair proportion of air noise from the north flow east turn departure and south flow arrival routes for many years. In 1975, the FAA established the North Flow East Turn departure procedure, whereby planes typically initiate a turn at Jefferson Park and fly over the Central Area and then the Leschi, Mt. Baker and Madrona communities. During the first few years, the number of daily East Turn flights was less than 20. Currently, the East Turn procedure results in as many as 220 flights daily.

In April 1990, the FAA imposed the Four-Post Plan to expand the jet corridors serving Sea-Tac airport. The Four-Post Plan provided that planes arriving at Sea-Tac on South Flow days would cross Seattle's Central Area and Rainier Valley neighborhoods. As a result, many of Seattle's central and southern communities have since been affected by both north and south flow airplane traffic. The Four-Post plan promised a gradual reduction in air noise; however, air noise from Sea-Tac has greatly worsened, due to the increase in the number and frequency of flights.

As users of the airport, we are prepared to tolerate our fair share of airplane noise. However, with more than two hundred flights per day departing or arriving over our neighborhoods, the noise we are experiencing is not a minor annoyance, it is a serious quality of life issue. During peak hours, flights pass overhead as frequently as every 60 or 90 seconds, interfering with residents' ability to carry on conversation outside and to speak on the telephone with a window open, and making it difficult for some residents to work, to study and to sleep. Thus, we view with great alarm the recent sample Part 150 recommendation to use FMS technology to further concentrate air traffic over our homes.

To concentrate air traffic over a few neighborhoods, when everyone in our region is a user of Sea-Tac airport, defies basic principles of fairness. To do so over neighborhoods that were densely populated long before the existence of Seattle-Tacoma airport violates the rights of property owners, many of whom have been in their homes for decades. It also runs counter to measures passed at the city, county and regional level aimed at controlling urban sprawl by improving the livability of Seattle's established in-city neighborhoods.

We submit to you the following recommendations. We believe these would remedy the present situation, would help to address what will be an ever-worsening problem as Sea-Tac airport operations expand in the future, and would be consistent with your mandate to prepare a noise reduction plan for the Port of Seattle:

- Determine and utilize the full capacity of designated noise abatement routes, such as the Duwamish Valley industrial corridor and Elliott Bay, 24 hours per day.
- Work with airlines to send all older, noisier aircraft through noise abatement routes.
- When such industrial corridors are used to full capacity or are not available, disperse flights to reduce airplane frequency and minimize unfair impact on any one residential community.
- Determine a maximum number of flights per day and per hour that any single neighborhood that is not close enough to the airport to be receiving mitigation benefits can be expected to endure.

- Extend night-time restrictions over residential neighborhoods for north flow departures, especially in the early morning. Introduce night-time restrictions over residential neighborhoods for south-flow arrivals. Strictly enforce all night-time restrictions.
- To the extent that is safely possible, revise glide paths to allow for steeper departures and arrivals so that aircraft reach a higher altitude more quickly. Enforce compliance with glide paths such that pilots do not fly below designated altitudes.

As you can see, we understand that there is no single solution to the problem of airplane routes over residential neighborhoods. We have put forth several suggestions that we hope you will consider, along with others that may be proposed during the study. We recognize that changing airplane routes and procedures is difficult and complex, but it is a critical task for maintaining Seattle's quality of life. As we understand it, the purpose of the Part 150 study is to consider such issues.

Thank you,

(name)
(position)
(organization)

(signature)

William E. Hanson
President

William E. Hanson

Malvern Community Council
THURSTON D. MUSKELLY
PRESIDENT

Thurston D. Muskelly

LESCHI COMMUNITY COUNCIL

Ms. Adrienne W. Bailey
President

Ms. Adrienne W. Bailey

Central District Comm Council

Gary Ernshe
President

Gary Ernshe

Greater Madrona Valley Community Council

Erica M. Watson
President
Garfield Community Centre

Erica M. Watson

Cc:

Sea-Tac Part 150 Committee Members:

Mike Anderson
Jules Bloomenthal
Rose Clark
James Combs
Lloyd Docter
Arden Forrey
Al Furney
Doug Hakala
Betty Ivie
Bud Jones
Richard Kennedy
Steve Mullet
Robert Rudolph
JoAnne Schaut
Guy Spencer
Duane Anderson
Lois Gere

Ron Seymour, Seattle-Tacoma International Airport, Noise Abatement Office

Seattle Council on Airport Affairs

Mayor Paul Schell, City of Seattle

Seattle City Council Members:

Sue Donaldson, President
Martha Choe
Richard Conlin
Jan Drago
Nick Licata
Richard McIver
Margaret Pageler
Tina Podlodowski
Peter Steinbrueck

Seattle Community Council Federation

Port of Seattle Commissioners:

Jack Block
Pat Davis
Gary Grant
Clare Nordquist
Paige Miller

King County Council Members:

Cynthia Sullivan, 2nd district
Larry Phillips, 4th district
Larry Gossett, 10th district

Ryk - FYI - This cover + copy of letter
went out to everyone on cc: list .

To: Please refer to attached cc: list

Date: August 11th, 1999

Re: Letter from Seattle neighborhoods regarding Sea-Tac Part 150 noise study

Enclosed please find a copy of the letter sent to the consultants who are conducting the Port of Seattle's Sea-Tac Part 150 noise study, on behalf of the community councils of those Seattle neighborhoods currently bearing a disproportionate amount of jet noise from Sea-Tac airport operations.

The names and phone numbers of neighborhood representatives whose signatures appear on the letter are as follows:

William Hansen, President, Madrona Community Council	206-287-4837
Thurston Muskelly, President, Leschi Community Council	206-325-3683
Adrienne Bailey, President, Central District Council	206-323-3738
Gary Emslie, President, Greater Madison Valley Community Council	206-324-7139
Erica M. Watson, President, Garfield Community Council	206-329-6398
Sharon Coleman, Co-president, Jackson Place Community Council	206-325-8962
Karen A Johnson, PhD, President, Judkins Park Community Council	206-824-4030
Carla Cole, President, South Beacon Hill Community Council	206-722-1122
Michael Richmond, President, North Beacon Hill Community Council	206-721-1113
Andre V. Helmstetter, Vice-President, Squire Park Community Council	206-322-4497

Please contact volunteer organizers Liz Dunn at 324-3738 or Gwen Rench at 324-3786 if you have questions or would like to discuss this issue.

Thank you.

RECEIVED
AUG 16 1999
Barnard Dunkelberg

April 20, 2000

Port Commissioners
Port of Seattle
P.O. Box 1209
Seattle, WA 98111

Ms. Gina Marie Lindsey
Director of Aviation
SeaTac International Airport
PO Box 68727
Seattle, WA 98168-0727

Mr. Lawrence Andriesen
Regional Administrator
Federal Aviation Admin.
1601 Lind Avenue, S.W.
Renton WA 98055

Dear Friends:

We, the undersigned, strongly support the original purpose and intention of the Part 150 Study. The Port is about to complete the largest Part 150 Study that has ever been undertaken in the country. We applaud the Port and the consultants for their efforts. However, one of the Operation Subcommittee's recommendations, "to further study the Split-Turn flight path with the Duwamish Corridor," fails to meet the spirit or guidelines established for the Part 150 Study.

The Study's Public Involvement Plan of November 20, 1997, clearly states:

Policy 1 - The proposed Part 150 noise mitigation program will improve the overall noise environment, not shift noise from one residential community to another.

The Split East Turn proposal shifts noise from one set of communities to another in direct violation of Policy 1. We urge you to adhere to this policy for the welfare of the region. Communities in the Puget Sound region should be working with you to implement this policy. If this fails to happen, communities will be pitted against one another endlessly.

Policy 2 - Programs which benefit a community without adversely affecting another community will be given priority.

Clearly, the Split East Turn proposal fails to meet this criterion. While the Split Turn would benefit a few neighborhoods, it would impose additional noise on many more neighborhoods, most of whom were not represented in this process.

Policy 3 - Programs reducing the highest residential community noise levels without adversely affecting another community will be given priority.

Again, by adversely affecting additional communities, the Split Turn proposal fails to adhere to the committee's established policies.

In reviewing the Study's Public Involvement Plan, we find no indication this committee was to focus its efforts on finding new flight paths, particularly when doing so would contravene the Study's stated policies. We urge the Port of Seattle Commission, the Port staff, and the Part 150 Study Committee to adhere to the purpose and policies that have been established and reject the Split East Turn proposal in any form or combination.

Thank you for your consideration.

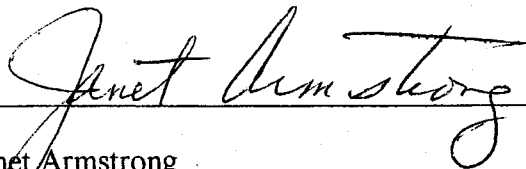
Sincerely,

Community leaders from across King County

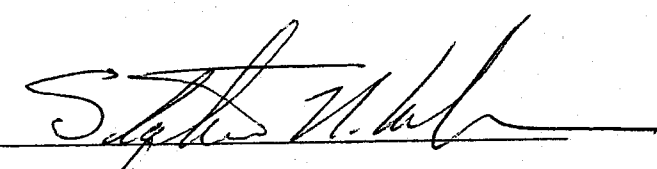
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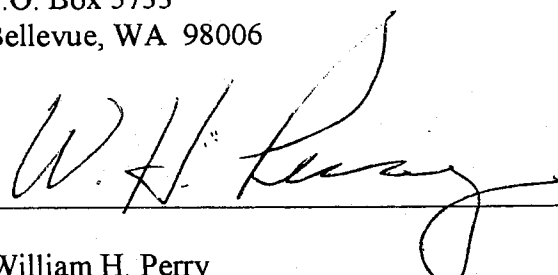
Bernard Dunkelberg



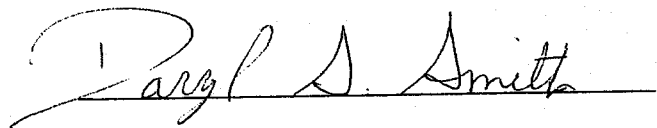
Janet Armstrong
President
Somerset Community Club
P.O. Box 5733
Bellevue, WA 98006



Steve Coleman
President
Bridle Trails Community Club
4000 140th Ave. NE
Bellevue, WA 98005-1128



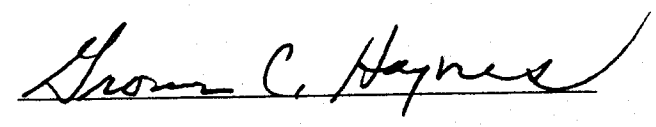
William H. Perry
Co-Chairman
Neighborhood Network South
4429 - 156th Pl. SE
Bellevue, WA 98006



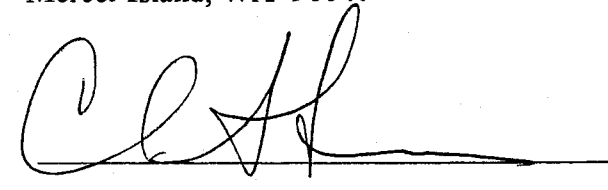
Darryl Smith
Chairman
Columbia City Revitalization Committee
5608 Renton Ave. S
Seattle, WA 98118



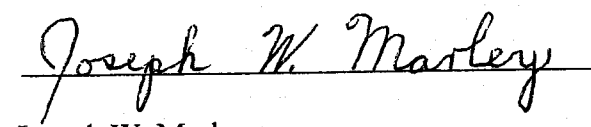
Carol S. Heltzel
Community Liason
Air Noise Abatement Committee
8245 SE 61st Street
Mercer Island, WA 98040



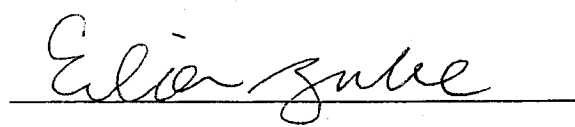
Grover C. Haynes
President
Lakewood-Seward Park Community Club
5217 S. Alaska St.
Seattle, WA 98118



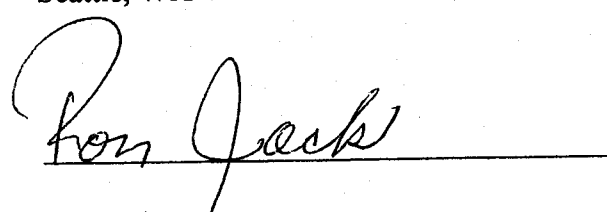
Charles Anderson
President
Hilltop Community Association
14806 SE 54th Street
Bellevue, WA 98006



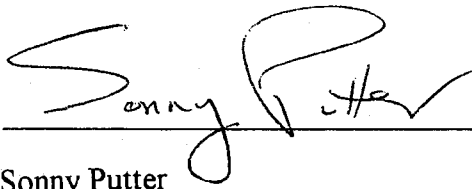
Joseph W. Marley
President
Rainier Beach Community Club
4847 S. Gazelle St.
Seattle, WA 98118




Eileen Zube
Vice President
Vuemont Homeowner's Association
17302 SE 45th Street
Bellevue, WA 98006



Ron Jack
President
Newport Shores Community Club
4 Crescent Key
Bellevue, WA 98006



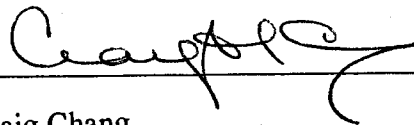
Sonny Putter
Mayor
City of Newcastle
13020 SE 72nd Place
Newcastle, WA 98059



Heidi Carlson
President
Renton Highlands Community Association
P.O. Box 2041
Renton, WA 98056



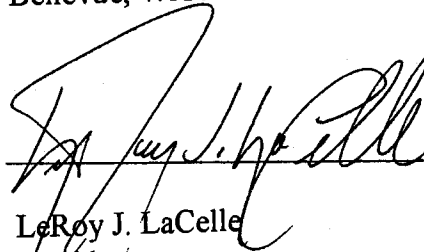
Kim Browne
President
Kennydale Neighborhood Association
1003 N 28th Place
Renton, WA 98056



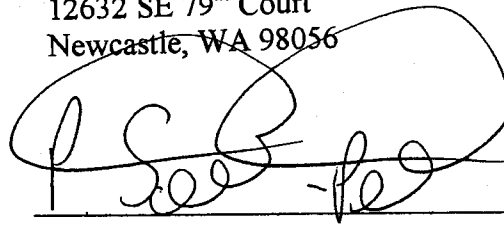
Craig Chang
Co-Chairman
Neighborhood Network South of I-90
P.O. Box 5787
Bellevue, WA 98006



Colleen Browne
President
Save Our Valley
5218 Rainier Ave S
Seattle, WA 98118



LeRoy J. LaCelle
President
Olympus Homeowner's Association
12632 SE 79th Court
Newcastle, WA 98056



Philip Schmidt-Pathmann
President
Vineyards Homeowner's Association
12632 SE 83rd Court
Newcastle, WA 98056

cc:

Port of Seattle Commissioners

Ms. Gina Marie Lindsey, Director of Aviation, SeaTac International Airport

Mr. Lawrence Andriesen, Regional Administrator, FAA

U. S. Senator Slade Gorton

U. S. Senator Patty Murray

U. S. Representative Jennifer Dunn

U. S. Representative Jim McDermott

Washington Senator Adam Kline, Legislative District 37

Washington Representative Sharon Tomiko Santos, Legislative District 37

Washington Representative Kip Tokuda, Legislative District 37

Washington Senator Jim Horn, Legislative District 41

Washington Representative Ida Ballasiotes, Legislative District 41

Washington Representative Mike Wensman, Legislative District 41

Honorable Ron Sims, King County Executive, King County Council

Honorable Dwight Pelz, King County Council, District 5

Honorable Rob McKenna, King County Council, District 6

Honorable David Irons, King County Council, District 12

Honorable Paul Schell, Mayor, City of Seattle

City Council Members, City of Seattle

Honorable Chuck Mosher, Mayor, City of Bellevue

City Council Members, City of Bellevue

Honorable Jesse Tanner, Mayor, City of Renton

City Council Members, City of Renton

Honorable Alan Merkle, Mayor, City of Mercer Island

City Council Members, City of Mercer Island

Honorable Sonny Putter, Mayor, City of Newcastle

City Council Members, City of Newcastle

Honorable Ava Frisinger, Mayor, City of Issaquah

City Council Members, City of Issaquah

Honorable Jack Berry, Mayor, City of Sammamish

City Council Members, City of Sammamish

Mr. M. R. Densmore, Executive Director, Port of Seattle

Mr. Charles Blood, Seattle Tacoma International Airport

Ms. Marsha Holbrook, Seattle Tacoma International Airport

Ms. Sara Dalton, Seattle Tacoma International Airport

Mr. Ron Seymour, Seattle Tacoma International Airport

Members of the Part 150 Study Citizens Advisory Committee

Members of the Part 150 Study Technical Advisory Committee

Ryk Dunkelberg, Barnard Dunkelberg & Company

Paul Dunholter, BridgeNet International

Mary Vigilante, Synergy Consultants, Inc.

Claire Barrett, Claire Barrett & Associates

Michael J. West, Michael J. West Communications

Ryk

From: Bosl, Frank @ Seattle [fbosl@cbrichardellis.com]
Sent: Thursday, May 11, 2000 4:33 PM
To: 'ryk@bd-c.com'; 'sales@airportnetwork.com'
Cc: 'blood.c@portseattle.org'; 'seymour.r@portseattle.org'; 'miker@pobox.com';
'debra.adler@cexp.com'; 'lesjam@drizzle.com'; 'rena@post.com'
Subject: GPS/FMS for Southflow Arrivals

Ryk and Paul,

I am sorry Ron did not feel there was time last night to allow the public to comment on the proposed fly quiet recommendations. I had intended to ask for a clarification on the language relating to "FMS curved approach through Elliott Bay." The recommendation reads, "Work with FAA to develop an FMS curved approach for aircraft from the west."

My question is whether the use of the word "west" is intended to include flights arriving from the north and east. I ask this question in light of the consultant's recommendations dated 4/6/99, pages 10 through 12. In that report, the consulting team recommended GPS/FMS for southbound nighttime flights arriving from the east and north as well as the southwest.

Is this still the recommendation? If so, those communities currently under the southbound arrival track would like the report to explicitly reference use of GPS and FMS for nighttime flights. In fact, Debra Adler asked me to raise this issue last night on behalf of the Montlake Community Council, as well as the northeast district council, comprising 15 Seattle neighborhoods, who have recently voted to ask the Port to take an affirmative position on this issue. I also feel comfortable in stating the communities stretching from Beacon Hill to Montlake, who also bear the brunt of the southflow arrivals, would also support this request.

I suspect you intended to include reference to GPS and north and east flights in the recommendation, but we would appreciate a clarification in your final draft. Please let me know either way so I can pass your response on to the community councils.

Thanks, as usual, for your help.

Frank Bosl

P.S. Ryk, I also look forward to your clarification of the confusion relating to the staff recommendation for the existing FMS procedure for the Mountain flights on the Northeast Turn. As noted, the staff verbally recommended no FMS over resident neighborhoods to the Commissioners on Tuesday. An affirmative act of terminating the existing procedure for the Mountain flights would be required as opposed to "staff recommends no change in the established procedures at this time."

Ryk

From: Mike [miker206@pobox.com]
Sent: Friday, May 12, 2000 10:55 AM
To: ryk@bd-c.com
Cc: seymour.r@portseattle.org; phd@airportnetwork.com
Subject: Sea-Tac Part 150

Ryk,

Could you please look into a matter for me? The final recommendations from the Port Staff stated the committee preferred not using FMS on the SUMA East Turn track. The committee stated several times, however, they do not want FMS used on any predominately residential track and this includes the MOUNTAIN East Turn track which already has an FMS procedure.

Was there any behind the scenes discussion of this point or was it an accidental omission? Many folks (including the CAC/TAC) would like to see the MOUNTAIN FMS procedure removed by the FAA. We realize some planes may continue to fly it, but hopefully as new flights are added, they would not. Particularly in light of the fact the Port Staff did not recommend the Split East Turn, we really have to try to do what we can for those residents that are hammered by the existing East tracks.

If you could let me know the status of this point, I'd really appreciate it so I can explain to the folks in my district what the story is. Thanks.

Mike Ranta
KC District 10 CAC

December 1, 1999

AN ANALYSIS OF:

THE ANALYSIS OF THE PORT OF SEATTLE NOISE COMPATIBILITY STUDY CONSULTANT'S REPORT REGARDING NOISE IMPACTS OF A SPLIT VS. THE CURRENT SINGLE EAST TURN PROCEDURE, submitted on November 14, 1999 by Robert H. Rudolph, M.D.

SUMMARY

It appears that the data was misunderstood by Robert Rudolph because there is a fundamental error of use. The data points are not statistical samples of the population in a geographic area. Accurate definitions are presented below to aid in understanding and use of the data provided by the Port of Seattle.

Each of the criteria and the numerical data itself is accurate.

However, of the four arguments presented by Dr. Rudolph, only one sustains a review. The overall result is actually inconclusive based on this analysis. Two of the four criteria are not correctly addressed, one is negative towards the split east turn and one is a judgment call on 48,000 negatively affected residents vs. a partial improvement for some 8,000 residents.

In addition, for some reason, the data on the FMS alternative was not addressed at all by Dr. Rudolph resulting in an incomplete analysis. This document will only address the errors in logic.

Recommendations are provided for your consideration.

DEFINITIONS

Location: A location is a geographic point that satisfies two conditions:

1. It is a "point of interest." That is, it is a location that a group of people care about.
2. It is a "point of change." That is, it is a location where there are expected changes in noise levels due to a change in flight tracks.

Note: An even more interesting part of the definition is what the location is not. It is not a statistical sample of the population in a geographic area. This study happens to display a population associated with each location (one square nautical mile centered at the locations) which is an interesting artifact of population density at the location but it is not a measure of geographic population. Thus no representations or conclusions whatsoever can be drawn regarding populations.

The data is accurate and meaningful to compare two individual locations, or "points of interest," which is the purpose for which they were created.

CRITERIA FOR THE EVALUATION OF FLIGHT TRACK OPTIONS

The criteria are:

1. Probable Number of Overflights by Geographic Area
2. Number of People Likely to Be Annoyed by Aircraft Noise
3. Number of People Experiencing Potential Speech Interference
4. Number of People Potentially Awakened from Aircraft Noise

1. Analysis of Overflights by Geographic Area

In the interest of completeness, I have shown only the location or "point of interest" with the greatest decrease (# 9) and the "missing locations" from Dr. Rudolph's analysis which happen to be all the locations with noise increases. There are a total of 23 locations.

<u>Location</u>	<u>No. of Flights Exceeding 75 SEL</u>		<u>Change</u>
	<u>Existing Procedure</u>	<u>Split Turn</u>	
2.	51	100	+ 96%
3.	71	117	+ 65%
9.	149	55	- 63%
12.	23	60	+ 161%
13.	13	75	+ 477%
14.	42	55	+ 31%
22.	38	104	+ 174%

Reference: Table III.18A-1 Number of Overflights

Given that there is no geographic population data, no conclusions can be drawn other than that the noise shifts from some people to others. Some of the increases reflect the magnitude of the change one could anticipate along the entire new path which is why a few locations were created as examples for study purposes.

2. Number of People Likely to be Annoyed by Aircraft Noise

The referenced letter states that the population highly annoyed decreases by 3%. First and foremost, no population conclusions can be drawn – only individual, specific location comparisons.

Since many locations happened to be established along the existing path and only a few (about 1/3 or less as many) are along the proposed path, any conclusions of the many locations against the few are obviously misleading. Again, the locations are points of interest, not population comparisons.

Also, any change is the arithmetical result of larger increases and decreases with a small net change. With actual population numbers one could make these measurements and draw some conclusions. At best the current data suggests a shift in extreme annoyance from some locations to others with a number of newly affected locations experiencing large increases in annoyance while providing only modest relief to others.

Reference: Table III.18A-2. It is suggested that the title of the table be as in the column heading, i.e., Population at Location.

3. Number of People Experiencing Potential Speech Interference

This data which deals with residents exposed to sound above 65 dBA, shows a change between the existing North Flow and the Split Turn of:

	<u>Existing North Flow</u>	<u>Split Turn</u>	<u>Change</u>
Greater than 30 minutes/day	94,494	86,272	- 9%
Greater than 10 minutes/day	211,114	258,722	+23%

There is an increase in the >10 min./day category by some 48,000 residents (+23%) and a reduction in the > 30 min./day category by some 8,000 residents (-9%).

4. The Number of People Potentially Awakened from Aircraft Noise

I quote from the referenced letter: "The number of people possibly awakened increases with a split turn from 4700 to 8400 with closed windows." This is a 79% increase.

Dr. Rudolph's conclusion was that 3 of 4 criteria favored a split east turn for the people of the Puget Sound area North of SeaTac airport.

My review would lead one to conclude, for each criteria, that:

1. Overflights. No population related conclusion can be drawn due to absence of geographic population data. Current "location comparisons" best suggest a shift from some neighborhoods to others.
2. Annoyance. No population related conclusion can be drawn due to absence of geographic population data. Current "location comparisons" best suggest a shift from some neighborhoods to others.
3. Speech Interference. Judgment call regarding noise for 48,000 negatively affected residents (> 10 minutes/day) vs. 8,000 partially benefited residents (> 30 minutes/day).
4. Sleep Awakening. Agree with Dr. Rudolph. Does not favor split east turn.

Given that half the criteria cannot be addressed by the use of "points of interest" applied to populations, the results are inconclusive. Therefore, I would draw no firm conclusions.

Based on this data, one certainly cannot logically assert that the split east turn is favorable for the people of the Puget Sound area North of SeaTac airport.

Additionally, recommendations are:

- A. Determine the actual geographic populations affected by the proposed change to enable a meaningful analysis.
- B. Create additional locations by which to comprehensively gauge the effects of the proposed changes.

I would welcome any review of this analysis. Contact information is below.

Very truly yours,



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**Analysis of the Seattle-Tacoma International Airport
Part 150 Noise Compatibility Study Consultant's Report
Regarding
East Turn Proposals for North Flow Conditions
(Report Dated November 3, 1999)**

Prepared by:



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November 30, 1999

Contents

- Analysis Format
- Final Conclusions and Recommendations
- Recap of Topical Conclusions
- Comments Regarding Model Input Parameters
- Comments Regarding use of “By Location” Data
- Analysis by Topical Area
 - Overall Noise Condition
 - Number of Overflights by Location
 - Number of People Likely to be Annoyed by Location
 - Number of People Experiencing Potential Speech Interference
 - Number of People Potentially Awakened

Analysis Format

This analysis is based on the Consultant's Report dated November 3, 1999 and Synopsis dated November 16, 1999. The analysis is restricted to data and comments provided for the East Turn flight track alternatives under North Flow conditions. The data provides for comparison among the existing East Turn, the Split East Turn alternative and the FMS East Turn alternative.

Consultant's data is reviewed for five topical areas:

- Overall Noise Condition
- Number of Overflights by Location
- Number of People Likely to be Annoyed by Location
- Number of People Experiencing Potential Speech Interference
- Number of People Potentially Awakened

For each of the topical areas, the analysis presents

- Data derived directly from the consultant's report
- Observations and Comments regarding the data
- Conclusions

Areas of concern regarding model input parameters and use of "By Location" data are expressed.

Final Conclusions and Recommendations are made.

Final Conclusions and Recommendations

Conclusions

- The Split East Turn would expose new and significantly increased populations to substantial air noise. It would significantly increase noise in some areas while providing only modest population relief to other current air noise recipients. In nearly all respects, the Split East Turn would either increase total population noise exposure or shift it from one community to another.
- The study team has set a policy to improve the overall noise environment while giving priority to programs which benefit communities without adversely affecting other communities. It is very apparent the Split East Turn adversely affects the communities to which the noise would be shifted.
- There is clearly not enough substantive data available to endorse an action as extreme as a major flight path change like the Split East Turn.
- What data does exist supports continuation of the existing flight track, with the possible inclusion of FMS procedures.
- The currently scheduled phase-out of Alaska and Horizon MD-80 and F-28 aircraft will provide significant relief to recipients of existing noise in the same relative timeframe that a major flight track change could be accomplished.

Recommendations

- The current alternatives should be closed out and the study team's energies focused on solutions which reduce the overall noise environment for all Lake Washington communities (e.g., Use of the Duwamish corridor, aircraft-type considerations, noise abatement takeoff procedures, overflight hours, etc.)

Recap of Topical Conclusions

Overall Noise Condition

- The Split East Turn would increase the number of people exposed to 55 DNL by 17,720 and decrease the number exposed to 65 DNL by 2390.
- The FMS East Turn would decrease the number of people exposed to 55 DNL by 3480.
- The accumulated noise impact for the total population is increased for the Split East Turn and slightly decreased for the FMS East Turn.

Sleep Awakenings

- The Split East Turn would create a significant increase in potential awakenings (47%) while the FMS East Turn would have a significant decrease (17%).
- The "75 SEL - Windows Open" scenario should be analyzed.

Number of Overflights

- Significant swings of percentage change between neighborhoods indicate the Split East Turn alternative represents a "shift" in noise.
- The study does not provide analytical data to determine changes in total population affected by the two alternatives.
- Empirical data suggests an increase in population exposed to overflights under the Split East Turn alternative, and a reduction in population exposed to overflights under the FMS East Turn alternative.

Population Highly Annoyed

- Significant swings of percentage change between neighborhoods indicate the Split East Turn alternative represents a "shift" in noise.
- The study does not provide analytical data to determine changes in total population affected by the two alternatives.
- Empirical review of DNL data suggests a reduction in total population highly annoyed under the FMS East Turn alternative, and a slight increase in total population highly annoyed under the Split East Turn alternative.

Speech Interference

- The Split East Turn would create a significant increase in population exposed to speech interference of 10 minutes or greater per day (47,608 people) while providing relief to speech interference of 30 minutes or more per day to a smaller population (8,222 people.)
- The increased population exposure from the Split East Turn would result from shifting of the noise between neighborhoods.
- The FMS East Turn would decrease the number of people exposed to speech interference of 10 minutes or more per day (6,968 people)

Model Input Parameters

- Certain model input parameters used in this study cause overstatement of noise impacts for the northern (Mountain) turn and understatement of noise impacts for the southern (SUMA) turn for the expected Split East Turn "to be" scenario.
- The currently scheduled phase-out of Alaska and Horizon MD-80 and F-28 aircraft will provide significant relief to recipients of existing noise in the same relative timeframe that a major flight track change could be accomplished.

"By Location" Data Usage

- "By Location" data can provide interesting "neighborhood-to-neighborhood" comparisons, but is invalid for projecting total population impacts.

Comments Regarding the Model Input Parameters for the Split East Turn

- Modeling of the Mountain Turn (the north turn for the split track proposal) utilizes MD-80 and F-28 aircraft types in the generation of noise profiles, particularly for the SEL calculations. Alaska and Horizon's noisy MD80's and F-28's are being phased out of operation in the same relative time frame the Split East turn would become operational, if approved. As such, the model does not accurately represent the "to be" scenario, and the noise impact for the Mountain Turn is overstated for this known future condition.
- Modeling of the SUMA Turn (the south turn for the Split Track proposal) does not consider altitude limits for departing flights. Tunneling under the arriving flights in the four-post plan would require that the SUMA flights remain under ceiling limitation over Mercer Island, southeast Bellevue and Renton, with a "lower and louder" result. As such, the model does not accurately represent the "to be" scenario, and the noise impact for the SUMA turn on these communities is understated.
- The model assumes a 50%/50% split of the flights between the northern (Mountain) track and the flights on the southern (SUMA) track based on annual average traffic volumes. However, FAA data indicates that in the summertime traffic increases, with about 45% of the flights on the northern track and 55% of the flights on the southern track. Under the typical north flow conditions of summertime, the modeled noise data would be relatively overstated for the northern track and understated for the southern track.

Conclusion:

- Certain model input parameters used in this study cause overstatement of noise impacts for the northern (Mountain) turn and understatement of noise impacts for the southern (SUMA) turn for the expected Split East Turn "to be" scenario.
- The currently scheduled phase-out of Alaska and Horizon MD-80 and F-28 aircraft will provide significant relief to recipients of existing noise in the same relative timeframe that a major flight track change could be accomplished.

Comments Regarding Use of "By Location" Data

- The "By Location" data only provides for a comparison of relative impact, "neighborhood-to-neighborhood."
- There is a substantial bias in the density of sample points (locations) across the affected geography (i.e., many more locations are under the existing tracks than under the proposed tracks.)
- As the points do not represent statistical samples of the geographic area, attempts to derive total population impacts from the location population data are invalid.
- Similarly, attempts to compare counts of the number of locations benefiting vs. the number of negatively impacted points are also invalid.

Conclusion

- "By Location" data can provide interesting "neighborhood-to-neighborhood" comparisons, but is invalid for projecting total population impacts.

Overall Noise Condition

Population within DNL Noise Levels – North Flow Track

Single Day North Flow					
DNL Contour	Existing	Population Change		% Change	
		Split Turn	FMS	Split Turn	FMS
55	212710	17720	-3480	8.3%	-1.6%
60	98720	-2390	-	-2.4%	-
65	31920	-	-	-	-
70	9860	-	-	-	-
75	0	-	-	-	-

Observations:

- This measure provides a “total Population” view of averaged noise exposure

<p>Split East Turn</p> <ul style="list-style-type: none"> Increase of 17, 720 people (8.3%) exposed to 55 DNL. Decrease of 2,390 people (2.4%) exposed to 60 DNL. 	<p>FMS East Turn</p> <ul style="list-style-type: none"> Decrease of 3,480 people (1.6%) exposed to 55 DNL.
--	--

Conclusions:

- The Split East Turn would increase the number of people exposed to 55 DNL by 17,720 and decrease the number exposed to 65 DNL by 2390.
- The FMS East Turn would decrease the number of people exposed to 55 DNL by 3480.
- The accumulated noise impact for the total population is increased for the Split East Turn and slightly decreased for the FMS East Turn.

Number of Overflights by Location

Location	Neighborhood	Flights Exceeding 75 SEL				
		Existing	Increased Flights		% Change	
			Split Turn	FMS	Split Turn	FMS
1	Holly Park	277	-37	0	-13.4%	0.0%
2	Seward Park	51	49	0	96.1%	0.0%
3	Lakewood/ Ranier Valley	71	46	0	64.8%	0.0%
4	Beacon Hill	231	-84	0	-36.4%	0.0%
5	Mt. Baker	127	-22	0	-17.3%	0.0%
6	Leschi - South	156	-86	2	-55.1%	1.3%
7	Lower Capitol Hill/Central Area	170	-93	0	-54.7%	0.0%
8	Leschi - North	156	-98	1	-62.8%	0.6%
9	Madrona - South	149	-94	2	-63.1%	1.3%
10	Madrona - North	119	-65	-10	-54.6%	-8.4%
11	Madison Park	50	-13	-13	-26.0%	-26.0%
12	Coal Creek Pkwy - South	23	37	-6	160.9%	-26.1%
13	Mercer Island - Central	13	62	-7	476.9%	-53.8%
14	Somerset/Newport Hills/Newcastle	42	13	1	31.0%	2.4%
15	Mercer Island - North Shore	83	-45	4	-54.2%	4.8%
16	Bellevue - Eastgate	76	-39	10	-51.3%	13.2%
17	Bellevue - Enatai	93	-59	7	-63.4%	7.5%
18	Medina - South	103	-67	5	-65.0%	4.9%
19	Medina - Central	98	-61	-2	-62.2%	-2.0%
20	Bellevue - Central	65	-33	5	-50.8%	7.7%
21	Medina - North	52	-20	-5	-38.5%	-9.6%

Observations:

- The "By Location" data only provides for a comparison of relative impact, neighborhood-to-neighborhood."
- Insufficient other data was provided in the report to determine increases or decrease of total population for noise levels exceeding 75 SEL. (i.e., There was no integration of the population under the 75 SEL contour for either alternative.)
- Empirical review of flight track maps indicates that a much larger population would be exposed to overflights (with lower elevations for the south turn) under the Split East Turn alternative. Similarly, a somewhat smaller population would be exposed to overflights with the FMS East Turn alternative

Split East Turn	FMS East Turn
<ul style="list-style-type: none"> • Significant swings of percentage change between neighborhoods (e.g., -65% to +477%) indicate this alternative represents a "shift" in noise. 	<ul style="list-style-type: none"> • The data reflects the tightening of the flight paths, with neighborhoods under the east end of the FMS (e.g., Bellevue -Eastgate and Bellevue-Enatai) experiencing more overflights, while other neighborhoods having little or no change.

Conclusions:

- Significant swings of percentage change between neighborhoods indicate the Split East Turn alternative represents a "shift" in noise.
- The study does not provide analytical data to determine changes in total population affected by the two alternatives.
- Empirical data suggests an increase in population exposed to overflights under the Split East Turn alternative, and a reduction in population exposed to overflights under the FMS East Turn alternative.

Number of People Likely to be Highly Annoyed by Location

Location	Neighborhood	Population Highly Annoyed				
		Existing	Increase People		% Change	
			Split Turn	FMS	Split Turn	FMS
1	Holly Park	562	-7	0	-1.2%	0.0%
2	Seward Park	91	110	0	120.9%	0.0%
3	Lakewood/ Ranier Valley	97	67	1	69.1%	1.0%
4	Beacon Hill	631	-48	9	-7.6%	1.4%
5	Mt. Baker	144	-24	2	-16.7%	1.4%
6	Leschi - South	239	-71	3	-29.7%	1.3%
7	Lower Capitol Hill/Central Area	498	-7	-7	-1.4%	-1.4%
8	Leschi - North	284	-68	4	-23.9%	1.4%
9	Madrona - South	257	-30	0	-11.7%	0.0%
10	Madrona - North	161	24	-17	14.9%	-10.6%
11	Madison Park	64	12	-2	18.8%	-3.1%
12	Coal Creek Pkwy - South	14	8	0	57.1%	0.0%
13	Mercer Island - Central	11	37	0	336.4%	0.0%
14	Somerset/Newport Hills/Newcastle	31	-2	2	-6.5%	6.5%
15	Mercer Island - North Shore	62	-32	6	-51.6%	9.7%
16	Bellevue - Eastgate	68	-32	6	-47.1%	8.8%
17	Bellevue - Enatai	87	-39	8	-44.8%	9.2%
18	Medina - South	25	-9	1	-36.0%	4.0%
19	Medina - Central	37	-1	-5	-2.7%	-13.5%
20	Bellevue - Central	48	9	-7	18.8%	-14.6%
21	Medina - North	15	7	-3	46.7%	-20.0%

Observations:

- The above data can only be used for "neighborhood-to-neighborhood" comparisons
- Insufficient other data was provided in the report to determine increases or decrease of total population categorized as highly annoyed. (i.e., There was no integration of the population under the DNL contours using the Schultz Curve.)
- Empirical review of the DNL data tables indicates that a larger population would be exposed to 55 DNL level under the Split East Turn alternative and a somewhat smaller population at the 65 DNL level. Similarly, a somewhat smaller population would also be exposed to DNL levels of 55 and above with the FMS East Turn alternative

Split East Turn

- Significant swings of percentage change between neighborhoods (e.g., -51% to +336%) indicate this alternative represents a "shift" in noise.

FMS East Turn

- The data reflects the tightening of the flight paths, with neighborhoods on the north and south sides of the FMS track having a reduction in the percentage annoyed, while neighborhoods under the east end of the FMS track having an increased percentage.

Conclusions:

- Significant swings of percentage change between neighborhoods indicate the Split East Turn alternative represents a "shift" in noise.
- The study does not provide analytical data to determine changes in total population affected by the two alternatives.
- Empirical review of DNL data suggests a reduction in total population highly annoyed under the FMS East Turn alternative.
- Empirical review of DNL data suggests a slight increase in total population highly annoyed under the Split East Turn alternative.

Number of People Experiencing Potential Speech Interference

Residences Exposed to Sound Above 65dBA - North Flow					
	Existing	Increased Residences		% Change	
		Split Turn	FMS	Split Turn	FMS
Greater than 150 minutes/day	1,058	-	-	-	-
Greater than 120 minutes/day	9,379	-	-	-	-
Greater than 90 minutes/day	18,284	-147	-	-0.8%	-
Greater than 60 minutes/day	41,131	-5,356	-	-13.0%	-
Greater than 30 minutes/day	94,494	-8,222	-225	-8.7%	-0.2%
Greater than 10 minutes/day	211,114	47,608	-6,968	22.6%	-3.3%

Speech Interference by Location - North Flow							
Location	Neighborhood	Existing	Change in Minutes			% Change	
			Split Turn	FMS	Split Turn	FMS	
1	Holly Park	80.4	-4.4	0.1	-5.5%	0.1%	
2	Seward Park	4.3	16.0	0.0	372.1%	0.0%	
3	Lakewood/ Ranier Valley	9.5	12.7	0.1	133.7%	1.1%	
4	Beacon Hill	61.3	-18.2	0.2	-29.7%	0.3%	
5	Mt. Baker	29.7	-8.7	0.7	-29.3%	2.4%	
6	Leschi - South	41.5	-17.9	1.2	-43.1%	2.9%	
7	Lower Capitol Hill/Central Area	35.9	-7.1	-0.4	-19.8%	-1.1%	
8	Leschi - North	38.7	-14.8	1.0	-38.2%	2.6%	
9	Madrona - South	32.3	-9.3	-0.4	-28.8%	-1.2%	
10	Madrona - North	20.1	0.9	-2.1	4.5%	-10.4%	
11	Madison Park	2.2	5.1	-0.8	231.8%	-36.4%	
12	Coal Creek Pkwy - South	4.7	7.2	1.3	153.2%	27.7%	
13	Mercer Island - Central	0.0	14.2	0.0	1000%*	0.0%	
14	Somerset/Newport Hills/Newcastle	7.1	-1.5	1.2	-21.1%	16.9%	
15	Mercer Island - North Shore	16.7	-14.0	5.6	-83.8%	33.5%	
16	Bellevue - Eastgate	20.3	-16.4	3.3	-80.8%	16.3%	
17	Bellevue - Enatai	27.6	-18.4	2.4	-66.7%	8.7%	
18	Medina - South	30.2	-16.1	0.6	-53.3%	2.0%	
19	Medina - Central	21.4	-3.5	-2.6	-16.4%	-12.1%	
20	Bellevue - Central	3.7	6.2	-3.1	167.6%	-83.8%	
21	Medina - North	2.4	7.2	-2.1	300.0%	-87.5%	

*Actual % increase is infinite . 1000% is substituted as an indicator of relative impact.

Number of People Experiencing Potential Speech Interference (continued)

Observations:

- This first chart provides a "total Population" view of Speech Interference Impacts
- The second chart can only be used for neighborhood-to-neighborhood comparisons

Split East Turn	FMS East Turn
<ul style="list-style-type: none"> • Increase of 47,608 people (22.6 %) exposed to speech interference of 10 minutes per day. • Decrease of 8,222 people (8.7%) exposed to speech interference of 30 minutes or more per day. • Significant swings of percentage change in speech interference minutes change between neighborhoods (e.g., -84% to +372%) indicate this alternative represents a "shift" in noise. 	<ul style="list-style-type: none"> • Decrease of 6,968 people (3.3%) exposed to speech interference of 10 minutes per day. • The data reflects the tightening of the flight paths, with neighborhoods on the north and south sides of the FMS track having a reduction in speech interference minutes, while neighborhoods under the east end of the FMS track having increased minutes.

Conclusions:

- The Split East Turn would create a significant increase in population exposed to speech interference of 10 minutes per day (47,608 people) while providing relief to speech interference of 30 minutes or more per day to a smaller population (8,222 people.)
- The increased population exposure under the Split East Turn would result from shifting of the noise between neighborhoods.
- The FMS East Turn would decrease the number of people exposed to speech interference of 10 minutes per day (6,968 people)

Number of People Potentially Awakened

Windows Open:		Population Potentially Awakened			% Change	
SEL Noise Contour	% Population Potentially Awakened	Existing	Increased: Spit Track	Increase: FMS	Spit Track	FMS
105	12%	600	-	-	-	-
100	11%	900	-	-	-	-
95	10%	1900	-	-	-	-
90	9%	4400	2100	-200	47.7%	-4.5%
85	8%	4700	1700	-800	36.2%	-17.0%
75	6%	??	??	??	??	??

Windows Closed:		Population Potentially Awakened			% Change	
SEL Noise Contour	% Population Potentially Awakened	Existing	Increased: Spit Track	Increase: FMS	Spit Track	FMS
105	10%	500	-	-	-	-
100	9%	700	-	-	-	-
95	8%	1500	-	-	-	-
90	7%	3400	1600	-100	47.1%	-2.9%
85	6%	3600	1200	-600	33.3%	-16.7%
75	0%	0	-	-	-	-

Observations:

- This measure intends to provide a "total population" view of the number of people potentially awakened. However, data was not included in the study for the "75 SEL – Windows Open" situation, which would yield a bedside 60 dBA, sufficient to wake 6% of that population. Open Window conditions are important during north flow periods which typically bring nice-weather.
- Empirical evidence from the flight path coverage maps indicate the population under a 75 SEL contour for the Split East Turn would be considerably larger than with the existing condition, while under an FMS East Turn would be smaller. Thus, inclusion of the 75 SEL contour would lead to an even more pronounced distinction between the alternatives.
- The 75 SEL contour should be analyzed for the "Windows Open" condition.

Split East Turn	FMS East Turn
<ul style="list-style-type: none"> • Increased potential awakenings between 6-7am by up to 47%. 	<ul style="list-style-type: none"> • Decreased potential awakenings between 6-7am by up to 17%.

Conclusion:

- The Split East Turn would create a significant increase in potential awakenings (47%) while the FMS East Turn would have a significant decrease (17%).
- The "75 SEL – Windows Open" scenario should be analyzed.

1455 Evergreen Point Road
Medina, Wa. 98039
February 24, 2000

RECEIVED

FEB 29 2000

Barnard Dunkelberg

Mr. Ron Seymour
Seattle-Tacoma International Airport
Noise Abatement Office
P.O. Box 68727
Seattle, Wa. 98168

Dear Ron,

I am writing to bring to your attention some omissions and inaccuracies in the Consultant's report of 1/11/00.

An error detailed below is:

1) On an annual basis there is no difference in the 55 DNL level between the split and current east turn. #1 below.

Three of the omissions are:

- 1) The omitted data demonstrates that fewer people will be exposed to speech interfering noise with the split turn. #5 below.
- 2) The population data that helps demonstrate the overall decrease in noise with the split turn was omitted. #3 below.
- 3) The report doesn't mention that the east turn doesn't operate from 10 PM to 6 AM in regard to the sleep disturbance analysis. #4 below.

1. Page III-5. At the bottom of this page under the DNL table 18A-1, the comment should read: "On an annual basis a reduction of 1% would occur at 60 DNL. No other contours would be materially affected on an annual basis. On a north flow day, population affected would increase by approximately 8% at 55 DNL and decrease by approximately 2% at 60 DNL". (the actual figures are 8.3% and 2.4%). The first sentence "the north flow split turn would result in more people being affected by noise at 55 DNL on an annual basis" is wrong. On an annual basis there is no difference at the 55 DNL level.

2. Page III-6. The comment above Table III 18A-2 is incorrect. Points 10, 15, and 16 are omitted, all of which show decreases of more than 50% in overflights/day with a split turn.

3. Page III-6. The "population within one nautical mile of location" data is missing from Table III 18-A-2. It was present in that table in the Consultant's report of 11/04/99. This data is important for the reader to assess the populations at each of these representative points selected for study by the consultant and the committee. Without that population data, the reader can not determine that of the 17 most heavily populated areas selected for study, 14 of the 17 show a decrease in 75 SEL overflights/day with the split turn. 9 of these sites would experience a decrease in 75 SEL overflights/day of more than 1/2 with the split turn. This is significant data which helps to make the case for an overall decrease in noise with the split turn. It must be included in the table as it was in the initial report.

4. Page III-10. No mention is made that the East Turn does not operate from 10 PM until 6 AM in the analysis of potential sleep disturbance. That piece of information is obviously critical in a sleep disturbance analysis.

5. Page III-11. Table III.18A-5 shows the people exposed to sound above 65 dBA for a single north flow day. It does not show the annual time above 65 dBA for the existing procedure and the split turn. This data was presented in the Summary of Flight Track Alternatives dated 11/29/99 and show an annual decrease of 6.4% with a split turn for people exposed to Time Above 65 dBA for greater than 60 minutes/day and an annual decrease of 3.7% for people exposed to greater than 30 minutes/day. There was an increase of 2.0% in people exposed greater than 10 minutes/day. The annual data and north flow day data are presented by location. The annual data is certainly as important as the single north flow day data and should be summarized in the same way, just as was done in the report dated 11/29/99 (enclosed). This omission may well account for the erroneous impression on the part of some that more people will be exposed to speech interfering noise with the split turn. The opposite is actually true.

Since the Consultant's report will be studied by members of the TAC, Port Staff and Port Commission, it must accurately report the data.

Sincerely,



Robert H. Rudolph, M.D.

copy: CAC members
Ryk Dunkelberg
Paul Dunholter

Speech Interference - North Flow

Minutes	Annual Time Above 65 dBA				% Change	
	Existing Annual	Track III-18A		Track III-18B		
		Split East Turn	FMS	Split East Turn	FMS	
>150	500	500	500	0.0%	0.0%	
>120	2,100	2,100	2,100	0.0%	0.0%	
>90	8,700	8,700	8,700	0.0%	0.0%	
>60	20,300	19,000	20,300	-6.4%	0.0%	
>30	52,000	50,100	52,000	-3.7%	0.0%	
>10	120,300	122,700	118,600	2.0%	-1.4%	

Minutes	Single Day North Flow				% Change	
	Existing Single Day	Track III-18A		Track III-18B		
		Split East Turn	FMS	Split East Turn	FMS	
>150	1,100	1,100	1,100	0.0%	0.0%	
>120	9,400	9,400	9,400	0.0%	0.0%	
>90	18,300	18,100	18,300	-1.1%	0.0%	
>60	41,100	35,800	41,100	-12.9%	0.0%	
>30	94,500	86,300	94,300	-8.7%	-0.2%	
>10	211,100	258,700	204,100	22.6%	-3.3%	

Track III-18A - North Flow - East Turn Dispersed (2 corridors)
 Track III-18B --North Flow - East Turn Concentrated 1 corridor

January 29, 2000

SeaTac Part 150 Noise Compatibility Study
Citizen Advisory Committee
% Ron Seymour
Seattle-Tacoma International Airport
Noise Abatement Office
P.O. Box 68727
Seattle, WA 98168

*Part 150 Committee
c/o Michael West*

Robert Rudolph, M.D.
County Council District #6 Representative
Part 150 Study - Citizen Advisory Committee
1100 9th Avenue
Seattle, WA 98101

RE: Seattle-Tacoma International Airport - Part 150 Compatibility Study

Dear Committee Members and Dr. Rudolph,

I take exception to several of Robert Rudolph's assertions in his Eastside Journal Opinion article dated Jan. 29, 2000 regarding a proposed "split east turn" flight pattern that would allow aircraft to turn east several miles earlier than the present east turns. In comparing the noise level between Medina and Mercer Island, he stated, "Even if the jets on each turn were identical and similarly loaded, the noise difference on the ground would be only two to three decibels, a difference that consultants say is not perceptible to the average person on the ground." I don't know how the "consultants" gathered their data to make that statement, but it couldn't have been from empirical evidence.

I believe the laws of physics will support a detectible difference of four times more noise on the ground when an aircraft turns at an altitude of 3,000 feet rather than at 6,000 feet. As residents of Mercer Island since 1970, my family lived through the summer of the 1987 East Turn "Scatter Test" that allowed such low level turns. Our homes, schools, businesses, cars and persons shook from the rumbling, and all verbal communication had to cease until the aircraft was miles away. Often, as the noise was fading away, we could already hear the next flight approaching.

Dr. Rudolph listed several neighborhoods that he believes would have a significant decrease in noise if the "split east turn" were adopted. However, a Port of Seattle news release, dated Oct. 16, 1987 regarding the test of the flight pattern conducted by the Federal Aviation Administration June 9 to Aug. 12, 1987, stated, "The committee concluded that the test did not provide significant benefit to neighborhoods under the standard flight pattern, and that it significantly increased noise levels in other neighborhoods." (Joint Committee on Aircraft Overflights) As a matter of fact, the test was ended prematurely because of the negative impact it had on the residents of Rainier Valley, Seward Park, Mercer Island, South Bellevue and Renton.

The interests of these communities are not represented on the current Citizen Advisory Committee to the SeaTac Port 150 Noise Compatibility Study. As the County Council District #6 Representative on the committee, and a resident of Medina, it is impossible for Dr. Rudolph to represent these other communities objectively. Hopefully, these communities have discovered that inequity in time to speak for themselves and be heard.

The eastside is no longer a quiet place. I live on the top of Mercer Island and am constantly aware of the drone of vehicles from I-405 across the lake. I am frequently shaken awake mornings by the rumblings of cargo planes taking off from SeaTac. In addition, there is the noise of seaplanes, Renton Field, Boeing Field and I-90. Please don't consider adding more.

I, too, would like to see relief for Medina and Bellevue, but not by compounding the problem. Prior to fuel shortages in the early 1970s, flights leaving Seattle turned west over Elliot Bay. In 1974 the FAA temporarily allowed the airlines to turn east in order to conserve on fuel. It was never intended to be a permanent change. Returning to the 1970s west turn flight pattern and eliminating east turns altogether can give the needed relief. I urge the Citizen Advisory Committee and the Port of Seattle Commission to support a return to the west turn pattern.

Thank you for the opportunity to be heard.

Patricia Fuqua

Patricia Fuqua
5708 92nd Ave SE
Mercer Island, Washington 98040

206-232-4141
Fax 206-230-0342
pdfuqua@aol.com

cc:

Port of Seattle Commissioners

Patricia Davis, President

Jack Block

Paige Miller

Clare Nordquist

Bob Edwards

Director of Aviation at the Port of Seattle, Gina Marie Lindsey

Part 150 Committee c/o Michael West

U. S. Representative Jennifer Dunn

U. S. Senator Slade Gorton

U. S. Senator Patti Murray

Senator Jim Horn

Representative Ida Ballasiotes

Councilman Rob McKenna

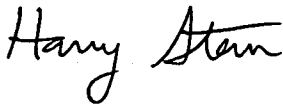
January 18, 2000

Patricia Davis, President
Port of Seattle Commissioners
P.O. Box 1209
Seattle, WA. 98111-1209

Dear Commissioner Davis,

Please find enclosed a Resolution to the Port of Seattle passed by the 37th District Democrats of Washington State at our monthly meeting on January 10.

Thank you,



Harry Stern

Cc: Commissioner Jack Block
Commissioner Bob Edwards
Commissioner Paige Miller
Commissioner Clare Nordquist
Senator Adam Kline, 37th Legislative District
Representative Sharon Tomiko Santos, 37th Legislative District
Representative Kip Tokuda, 37th Legislative District
Representative Jim McDermott, 7th Congressional District
Councilmember Dwight Pelz, 5th King County District
Mayor Paul Schell, Seattle
Ron Seymour, Sea-Tac Noise Abatement Office
Michael West, Barnard Dunkelberg & Co.

Resolution to the Port of Seattle Passed by the 37th District Democrats

January 10, 2000

We, the 37th District Democrats, ask the Port of Seattle and its consultants and advisory committees to drop from consideration the change in flight path known as the “split east turn” for northward-departing, east-turning aircraft taking off from Seattle-Tacoma International Airport.

Alec Stephens, Chair
Harry Stern, Secretary

37th District Democrats
c/o 5718 55th Avenue S.
Seattle, WA 98118

Seattle-Tacoma International Airport
Federal Aviation Regulation (FAR) Part 150 Study

Thank you for taking the time to comment on this FAR Part 150 Study. You may submit your comments to the address below:

Barnard Dunkelberg and Company
c/o Mr. Michael West
1122 E. Pike Street, #1286
Seattle, Washington 98122

Comments will be accepted at this address through the end of the Study. You can also e-mail your comments to mjwest@prodigy.net.

Comments:

1. ALL AIRPORT NOISE MUST BE CONSIDERED, i.e., RENTON AIRFIELD, KING CO. AIRPORT, BOEING FLIGHTS, IN ADDITION TO SEA-TAC.
2. CAN TURNS BE SPLIT 5 mi. NORTH OF PRESENT PATH IN LIEU OF SOUTH?
3. DIVERT TRAFFIC TO PAINE FIELD - PASSENGER FLIGHTS & CARGO FLIGHTS

Optional:

Name: MARJORIE RAUNIG
Address (City, State, Zip): 4214 S. HUDSON, SEATTLE 98118
Phone: 206-725-9657
Fax: 206-725-5025

7450 80th Place SE
Mercer Island, WA 98040
January 12, 2000

Sea Tac Part 150 Noise Compatibility Study
Citizen Advisory Committee
Attn. Ron Seymour
Seattle-Tacoma International Airport
Noise Abatement Office
P. O. Box 68727
Seattle, WA 98168

Dear Mr. Seymour:

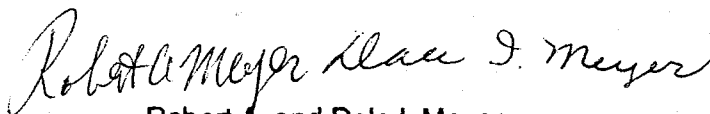
As residents and home owners on Mercer Island we wish to express our strong opposition to the proposed redirection of aircraft flights from their present flight pattern to a Split Track scheme.

We presently have a significant amount of aircraft noise from the present east turn procedure as well as from airports other than Sea-Tac such as Boeing Field and Renton Airport. These latter sources of noise have been ignored in your present study. Moreover, a recent discussion with an Alaskan Airlines pilot indicated, as does your own study, the proposed Split Track scheme would mean planes would be turning east over Mercer Island at a much lower altitude than is currently done which will result in much higher and entirely unacceptable levels of noise. Additionally, the proposed Split Track would significantly increase the number of persons impacted by aircraft noises and have an adverse impact on the school children in the Mercer Island schools, in order to give only partial relief to a smaller number of persons.

We strongly urge the elimination of the East turn and instead turn the flights over Elliot Bay as was the procedure prior to 1974, especially since there is no fuel shortage which initiated the current flight plan.

Thank you for your attention to this matter.

Sincerely yours;



Robert A. and Dale I. Meyer

cc Michael West

Barnard Dunkelberg & Co.
c/o Mr. Michael West
1122 East Pike St
Seattle, WA 98122

January 10, 2000

RE: Proposal to Modify North Flow, East Turning Flight Track

Dear Mr. West:

The City of Mercer Island and the Port of Seattle informed me and my neighbors on Wednesday, December 8, 1999 of a proposal to modify the existing east turn flight track procedure. As I understand it, the Sub-Committee's current focus is on a "split track" proposal. As a citizen and resident of Mercer Island, I am extremely concerned about such a proposal for the following reasons:

- 1. Split track moves flights over more heavily populated areas at lower altitudes** - As I understand the split track proposal, the southern track would direct 55% of east turning aircraft from current "over water" Lake Washington crossings to a path directly over Seward Park, the middle of Mercer Island, South Bellevue, Newcastle and North Renton. The entire turning process for the southern track would also come at a substantially lower altitude, in the 3/4000' range, regardless of whether the eight-mile distance from SeaTac has been achieved. My neighbors and I understand that noise level is inversely proportional to the square of the distance (altitude in this case). Thus a jet at 3000 feet is 4 times noisier than at 6000 feet. Therefore the proposed procedure will impact large populations at much higher levels of noise than otherwise happens under existing procedures.
- 2. More people will be hurt than helped** - Data from the flight track alternatives study predict that the overall impact on the region will be to increase by 23% the total population exposed to noise levels that could affect speech up to 30 minutes per day, with 6 to 9 times more people being hurt by the proposed split turn than those who may expect only partial relief. This study also examined the total regional population exposed to cumulative, annoying day-night noise levels on north flow days. The data predict that 7 times as many people will experience significantly MORE noise than those who may expect only partial relief will. The study also predicts that the total population exposed to potential night awakenings will increase by over 30%. Clearly, the split east turn does not provide true noise relief for the region and instead hurts far more people than it helps. Residents of Mercer Island would, along with residents of Rainier Valley, Seward Park, South Bellevue, and Renton, bear essentially the whole brunt of this increased exposure for the entire area population.
- 3. Mercer Island already receives its share of noise.** The current east turn procedure brings a significant amount of noise over North Mercer Island. In addition, the South end of Mercer Island, only a few miles from the end of the SeaTac runway, frequently hears engine run-ups and take-off noise from departing aircraft at both Boeing Field and SeaTac. Unlike other communities, Mercer Island residents are also impacted by noise from Boeing Field, the

Renton Boeing plant aircraft departures, and the Renton general aviation airport.

4. **An environmental review is required.** I expect that the Port of Seattle and the FAA will adhere to standards of rigorous environmental review and analysis, requirements of NEPA and SEPA including technical analysis and public review and comment. As a resident of Mercer Island, I am directly concerned by the increased pollution of 125 commercial jets flying over the island and the disruption of wild life such as the Bald Eagles in Seward Park and Mercer Island.
5. **Representation** - To my knowledge, there is no subcommittee member living on Mercer Island nor in any of the communities, such as Newcastle, South Bellevue, that will be adversely affected by the split track proposal. This lack of representation needs to be rectified.

I strongly believe that the Port of Seattle and the FAA must consider other options, namely the West Turn over the Duwamish corridor and Elliott Bay (residential vs. industrial and commercial) as was the prior procedure. By the Committee's own criteria, efforts to maximize the use of south flow arrival and departures as well as to use "west turn" flight tracks under north flow conditions should be given priority.

I am voicing my strong opposition to an adoption of the split track procedure based on the negative impacts on this community as described above. Thank you for considering my opinion in this important decision.

Sincerely,



Dr. Therese M. Grant
4433 West Mercer Way
Mercer Island, WA 98040

RE: SEATAC AIRCRAFT NOISE OVER
CLYDE HILL

1-21-00

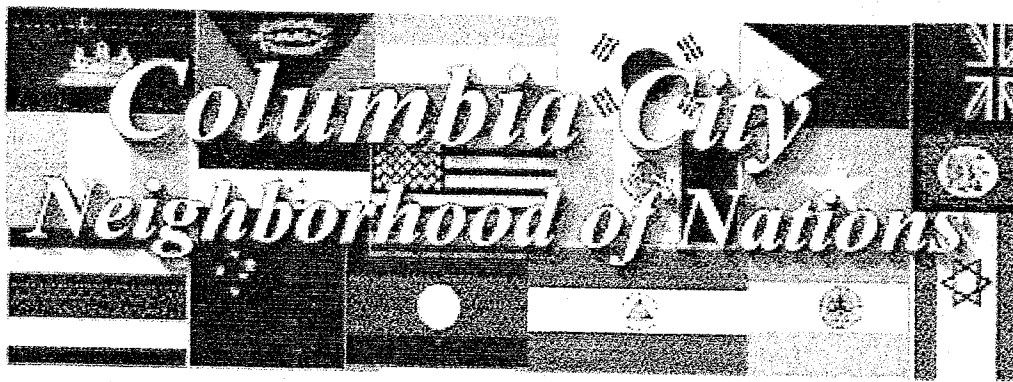
DEAR CONTACT PART 150 COMMITTEE,

I LIVE IN CLYDE HILL AND AM AFFECTED
BY AIRCRAFT NOISE FROM SEATAC
AIRPORT. I SUPPORT THE SPLIT
EAST TURN PROPOSAL AND ANY
OTHER APPROPRIATE CHANGES THAT
WILL REDUCE AIRCRAFT NOISE AND
IMPROVE THE QUALITY OF LIFE IN
CLYDE HILL. I SUPPORT EQUITY IN
SHARING THE NOISE EFFECTS
FROM SEATAC AIRPORT.

THANK YOU.

Whitney Curran

WHITNEY CURRAN
9432 NE 24TH ST.
CLYDE HILL WA 98004



January 24, 2000

Michael West
Bernard Dunkelberg & Company
1122 E. Pike Street #1286
Seattle WA 98122

Dear Michael West:

At the January 10, 2000 meeting of the Columbia City Revitalization Committee (CCRC) we adopted the following resolution:

We request that the Port of Seattle and its consultants and advisory committees drop from consideration the change in flight path known as "split east turn" from northward-departing, east-turning aircraft taking off from Seattle-Tacoma International Airport. In addition we ask the Port to work with the FAA to reroute as many northward departing aircraft as possible along the industrial Duwamish corridor rather than over residential neighborhoods.

The CCRC is a coalition of community members (residential, business, property owners and service providers) dedicated to making our neighborhood a better place to live and work. We currently have a membership roster of over 300 people.

Columbia City is a Landmark Historic District - - one of only seven in the City of Seattle. We have been working hard to improve the community, economic and environmental conditions in the neighborhood. We are also impacted by air traffic at Boeing Field, Renton airport and the increasing number of flights over Beacon Hill as well as the SeaFair airshow. We have serene parks including Seward Park. The noise pollution and consequent degradation of the quality of life which would result from the low altitude turns over our neighborhood are unacceptable.

We respectfully request that any and all other alternatives (such as extending the turns farther north at a much higher altitude, or utilizing Paine Field for commercial or cargo flights) be fully studied.

We request that you notify us in a timely way of all future proceedings and findings in this matter and of any opportunities for comment. Please contact me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Darryl Smith".

Darryl Smith, Chair
Columbia City Revitalization Committee
5608 Renton Avenue South
Seattle WA 98118
Darrylsmith@home.com or (206) 725-7255

Jan. 21, 2000

Michael and Elizabeth Huber
8388 SE 50th Place
Mercer Island, WA 98040
(206) 232-3342

Dear Port of Seattle Commissioners: Patricia Davis; Jack Block; Paige Miller; Clare Nordquist; Bob Edwards:

We are very concerned about increasing jet noise we are hearing on Mercer Island. We live on the West side of Mercer Island, across the lake from Seward Park. Over the past year, jet noise levels have continued to increase. We hear thundering noise from early morning throughout the evening, and are often awakened at night by the noise.

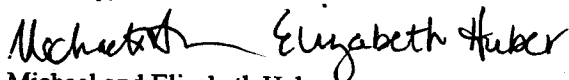
We recently traveled to El Segundo, California, an area approximately one mile South of the Los Angeles International Airport. This community is known for its jet noise (and depressed property values) due to its proximity to the airport. We can honestly report that after hearing the noise in El Segundo and comparing it to the noise we are hearing, the noise levels are similar.

We are aware of the SeaTac Part 150 study currently underway to reduce jet noise in areas near SeaTac. We are concerned that the residents of Mercer Island have not been properly represented in this study. The "Split Track" proposal clearly shows that the jet noise problem has not been properly identified. We already suffer from too much jet noise. Allowing jets to fly over mid-Mercer Island would only worsen the problem.

We are aware of a website for the SeaTac airport which includes information regarding the Part 150 study (www.AirportNetwork.com). This website shows a map of the areas around SeaTac where noise monitoring devices are in place to collect data for use in the study. This map shows that there are no noise monitoring devices located near where we live. Monitoring devices on the West side and South end of Mercer Island would provide important data for the Part 150 study.

Jet noise is a serious problem in our community. We understand that other communities feel the same way, and urge you to seek solutions which will alleviate the jet noise problem for everyone.

Sincerely,



Michael and Elizabeth Huber
mhuber@microsoft.com
emhuber@hotmail.com

cc: Rob McKenna, King County Councilman
Representative Ida Ballasiotes
Michael West, Barnard Dunkelberg & Co.
Gina Marie Lindsey, Director of Aviation, SeaTac Airport
Ron Seymour, SeaTac Noise Abatement Office
Sara Dalton, SeaTac Noise Abatement Office
Bryan Cairns, Mercer Island City Council Member
Rich Conrad, Mercer Island City Manager
Mercer Island ANAC Steering Committee

Michele R. Lambe
8931 SE 74th Place
Mercer Island, WA 98040
mlambe@stanfordalumni.org

January 20, 2000

Mr. Michael West
1122 E. Pike St. #1286
Seattle, WA 98122

RE: Proposal to Modify North Flow, East Turning Flight Track

On December 8, I attended a Forum held on Mercer Island to learn about the proposal to modify the existing east turn flight track pattern. As I understand the Sub-Committee's current focus is on a "split track" proposal. As a citizen and resident of Mercer Island, I am extremely concerned about such an alarming proposal. Below are my concerns:

First, I learned at the meeting that there is no sub-committee member living in Mercer Island nor any of the communities, such as Newcastle or South Bellevue, that would be adversely affected by the split track proposal. In fact, the District 6 representative seems to have a personal agenda since he lives in a neighborhood with significant air traffic noise.

Second, the split track moves flights over more heavily populated areas at lower altitudes. The proposal would have 55% of the east turning aircraft turning at a lower altitude over areas of Seward Park, Mercer Island, South Bellevue, Newcastle and North Renton. Because of the lower altitude, the noise level will be greater for these new neighborhoods than what currently happens with the existing procedures.

Third, more people will be hurt than helped with the split turn proposal. The new plan shows a shift to other neighborhoods, but there will still be flights going through the neighborhoods near Medina. It seems this proposal is a lose/lose proposition for the entire east side. Why not try to find a solutions where everyone wins?

Fourth, we already have plenty of noise from aircraft in our community already. In the 13 years since we moved to Mercer Island, airplane noise has dramatically increased over my south end home. We seem to be on the flight path to an airport in the Renton area, where air traffic has apparently risen. We need to look for relief from these problems, not further complications.

Finally, there seem to be other solutions that can be considered. The West Turn over the Duwamish corridor seems to direct air noise away from populated areas. The Flight Management System proposal seems to allow planes to track a turn in a very narrow region. This technology could be helpful in finding a new solution, however I do not believe it should be used to focus noise over a narrower populated area. Living in that one area would become most

unpleasant since the volume of flights would be increasing.

As a result of the negative impacts on Mercer Island, I am voicing my strong opposition to an adoption of the split track procedure. I also feel that all communities affected by changing the current north flow, east turning flight track should be represented in any committees or studies conducted by your office.

Thank you for considering my input on this matter.

Sincerely,

A handwritten signature in cursive script that reads "Michele R. Lambe". The signature is written in black ink and has a long, sweeping horizontal line extending to the right.

Michele R. Lambe

DANIEL R. McCLASKEY
2626 86th Avenue N.E.
Bellevue, Washington 98004
~~(206)~~455-4233
425

January 22, 2000

Barnard Dunkelberg & Co.
c/o Mr. Michael West
1122 East Pike St., #1286
Seattle, WA., 98122

RE: Aircraft Noise

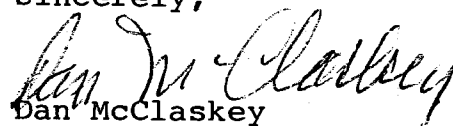
Dear Mr. West;

I wish to strongly let you know that the Port of Seattle's Citizen Committee should vote to mitigate airplane noise by splitting the "east turn" plane traffic into two turns (when the wind is from the North). It is very unfair to have all the departures with a North wind fly over Clyde Hill, Medina and central Bellevue.

I'm willing to suffer some of the noise but I should not have to put up with all the problem - night and day. This decision is a common sense one with the need for all parties to share in the impact of aircraft noise.

I'll be looking forward to learning of your decision.

Sincerely,


Dan McClaskey

Brian Whitfield
8609 NE 14 Street
Clyde Hill WA 98004-3318

January 24, 2000

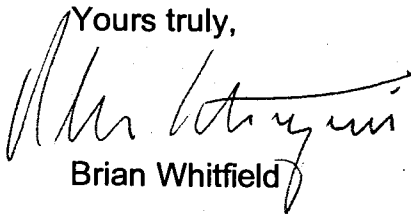
Mr. Michael West
Contact Part 150 Committee
Barnard Dunkelberg & Co.
1122 East Pike Street. #1286
Seattle WA 98122

Dear Mr. West:

Re: Slit East Turn Provision

I cannot stress sufficiently the importance this subject is to my wife and myself. We live at the corner of 86 Avenue NE and 14 Street, Clyde Hill. When the wind is from the North all departing flights travel directly above us. Conversation on the patio in the summer is impossible. I use the airport a lot and accept that some noise is inevitable. However, it should be shared by other neighborhoods. We urge you to give this provision your support.

Yours truly,



Brian Whitfield

January 31, 2000

Mr. Michael West
Barnard Dunkelberg and Company
1122 East Pike Street, #1286
Seattle, Washington 98122

RE: Proposal to Modify North Flow, East Turning Flight Track

The Port of Seattle and the City of Mercer Island have informed us that the Port's Part 150 Study Committee is considering recommendations for changes in the long-established North Flow, East Turning flight track. As a long-time resident of Mercer Island, I am vitally interested in the progress and outcome of the Port of Seattle Part 150 Study.

As you know, this route has been the subject of considerable analysis and debate during the last fifteen years. During the summer of 1987, the Port's Joint Committee on Aircraft Overflights recommended that the Port and the FAA test the impact of 'scattering' the East Turn. The test parameters were similar to those now being discussed by the current Operations Sub-committee. The results of the 1987 test were striking and immediate. The Over flights Committee and Noise Abatement Staff were so overwhelmed by the widespread negative response that they curtailed the tests, concluding no significant benefit to neighborhoods under the standard flight pattern and noting significantly increased aircraft noise levels in other neighborhoods. The results of these tests clearly showed that changing flight paths would do little to appease those under the airplanes now and would negatively impact many other neighborhoods around the lake.

The proposed Part 150 noise mitigation program should focus on improving overall noise environment rather than shifting aircraft noise from one neighborhood to another. The Port should develop a plan that provides meaningful noise reduction, not redistribution. A key component of such a plan would route much of the northbound SeaTac traffic west, away from Lake Washington, out the Duwamish industrial corridor and then over Elliot Bay. "Go west, fly quiet" provides a meaningful solution that we can all live with.

Sincerely,



Dale E. Bretschneider

8141 Southeast 44th Street

Mercer Island, Washington 98040 (Email: dalebret@home.com)

SEWARD PARK

THE FRIENDS OF SEWARD PARK



Mr. Michael West
Barnard Dunkelberg and Company
1122 East Pike Street
Seattle WA 98122

January 24, 2000

Dear Mr. West:

Thank you for requesting comments regarding the Seattle-Tacoma International Airport Federal Aviation Regulation (FAR) Part 150 Study. I am writing on behalf of Friends of Seward Park, regarding proposed changes in the flight paths of aircraft from SeaTac. Several community meetings on this subject have been held.

It is our understanding that the impetus for change in the current air traffic flow was the air traffic noise burden on a few Seattle neighborhoods, including Madrona, Leschi, and several neighborhoods on the East side. While it is easy to understand these neighborhoods' desire for relief, it seems senseless to recommend shifting an even greater burden to a few neighborhoods to the south. The burden would be increased because aircraft would be making turns at much lower altitudes.

These neighborhoods farther south along Lake Washington already bear the brunt of air traffic noise from both Boeing Field and Renton Airport. Because of the narrowly defined parameters of the Part 150 Study, this apparently pertinent factor was excluded from consideration. This and the above characteristic of the current proposal are counter-productive to the expressed goal of *equalizing* the noise burden of air traffic, rather than overburdening clusters of neighborhoods. It also appears that your study's data and conclusions were biased by the choice of points at which noise levels were studied and projected - that is, you looked at *very* few points along the proposed southbound route.

Remarkably, the proposed air traffic flow would route aircraft *directly over Seward Park*; that is to say, directly over the only park in Seattle with two nesting pairs of bald eagles. Seward Park is also one of only two old growth forests in the city and is, by far, the larger at 277 acres (Schmidt Park is only 36 acres). It has a well-deserved reputation as being an oasis of tranquility and wildlife in the city. We also have great hopes for the future, including the establishment of a site for nature/environmental education for the city's children, and rehabilitation of the former fish hatchery, hopefully to a more natural state. Seattle prides itself on its parks, and rightly so. Our parks set us apart from other great cities, and Seward Park is Seattle's most pristine. It is astonishing to think that routing so much air traffic directly over the park, at such low altitude, could be considered a reasonable alternative to the current air traffic pattern.

5900 Lake Washington Boulevard South
Seattle, Washington 98118

Clearly, changes are needed. Those of us living in Seattle must expect air traffic to and from our beautiful city to continue to increase. However, we must look for alternatives that: 1. do not overburden selected neighborhoods (a situation which led to the request for change in the first place); and, 2. reflect creativity and a variety possibilities: for example, routing aircraft over the Duwamish corridor and other non-residential areas (that is industrial areas or sound/ocean), moving cargo/industrial flights to another airport, such as Payne Field; mandating the faster phase-in of newer, more quiet aircraft; or alternating air traffic patterns several times through the year. These are laypersons' ideas; undoubtedly, aviation experts will have more informed suggestions.

Thank you very much for your attention. Please feel free to contact me with any comments or questions.

Sincerely,



Patricia Killam
Chairperson, Friends of Seward Park
Vice President, Lakewood-Seward Park Community Club
(206) 725-9631

John Rudstrom
1121 107th Ave. SE.
Bellevue, Wa. 98004

Michael West
C/o Barnard Dunkelberg
1122 East Pike St.
Seattle, Wa. 98122

Dear Mr. West;

Thank you for the opportunity to speak out. Perhaps maybe someone will listen to the complaints of excessive aircraft noise. My calls to Noise Abatement Office Port of Seattle have not provided any improvement

I question why more flights can not make the west turn as evidenced during last years Blue Angels flights. This was accomplished in relatively short time. As Robert Kikillus informed me , basis the study Planned this spring the results could take four years.

Note flight charts enclosed shows significant increase in flights over my area from year 97 to year 98 and 99 was even more. Also the number of flights turning south from the east turn is occurring far sooner than in the past.

In my area it is not uncommon to experience 25 flights within one hour with decibels ranging from 65 to 75 and with jags to 85. Many times flights are less than two minutes apart with the aircraft noise overlapping. Our particular area is especialy vulnerable due to the topography here, perhaps due to the surrounding hillsides and the fact that we are in a basin so to speak. We can hear the approaching aircraft at least 15 seconds prior to overhead and up to 1 minute after they have passed. Thus with the overlapping effect it is not uncommon to experience aircraft noise for up to two to three minutes.

I would welcome anyone interested to my home to observe this phenomenon.

Sincerely Yours;

Cc to Bellevue City Council





Port of Seattle

SEA-TAC AIRPORT

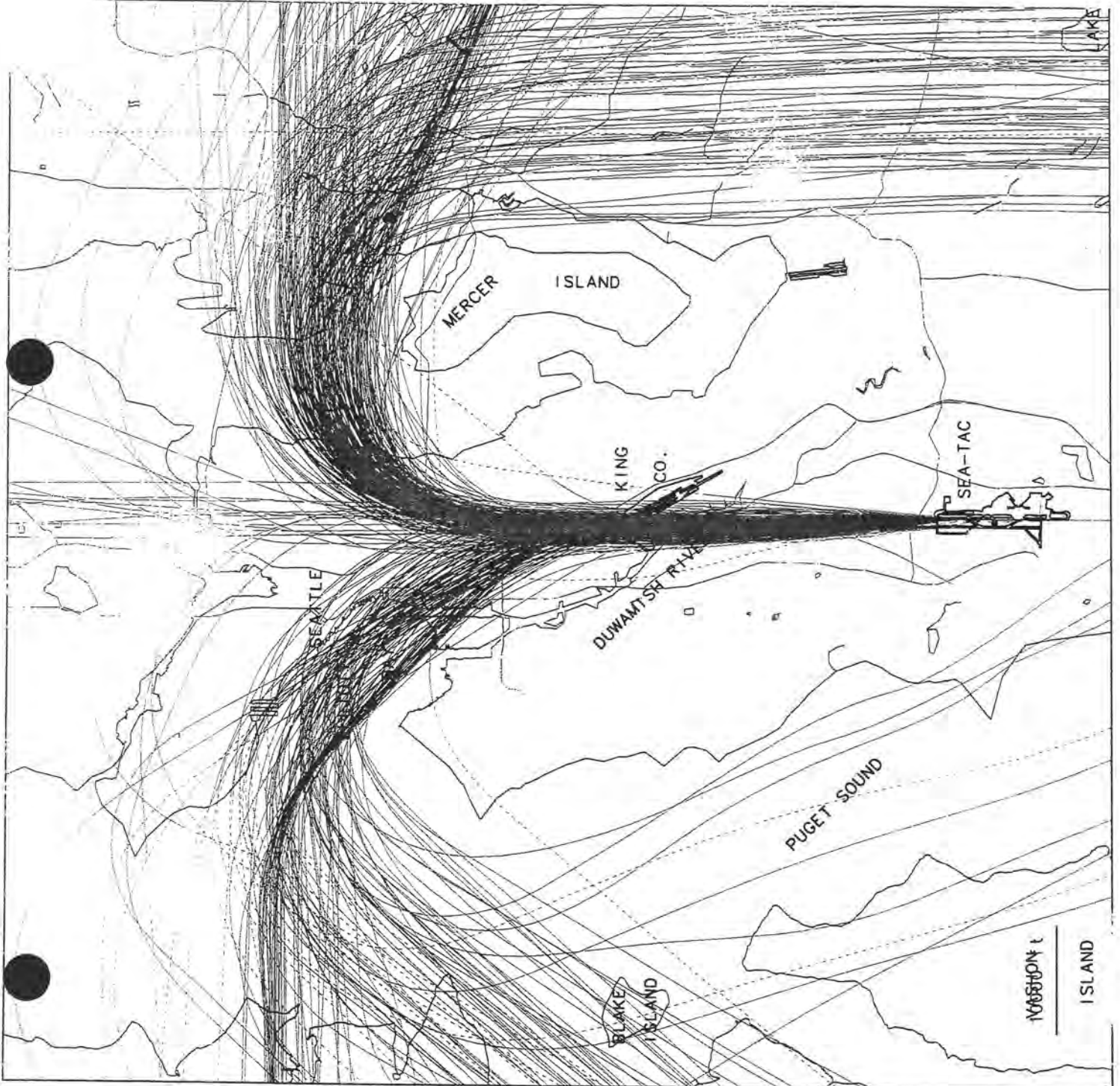
7/27/98

6:00 am - 10:00 pm

NORTH FLOW DEPARTURE
(JET AIRCRAFT)

• YOUR RESIDENCE

Note in flights
increase in
97 to 98





7/28/97

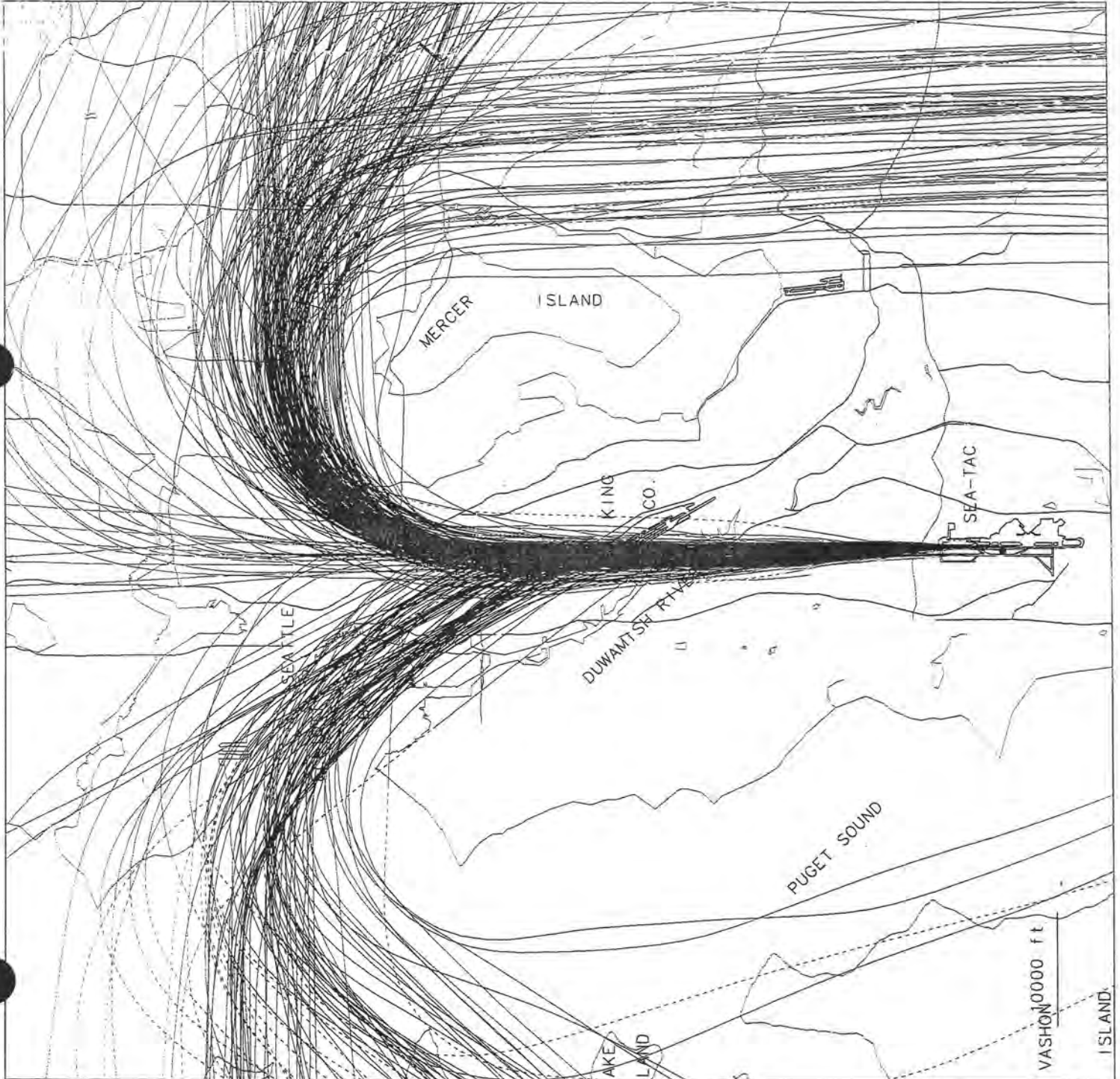
6:00am - 7:00pm

Jet Departures

area where

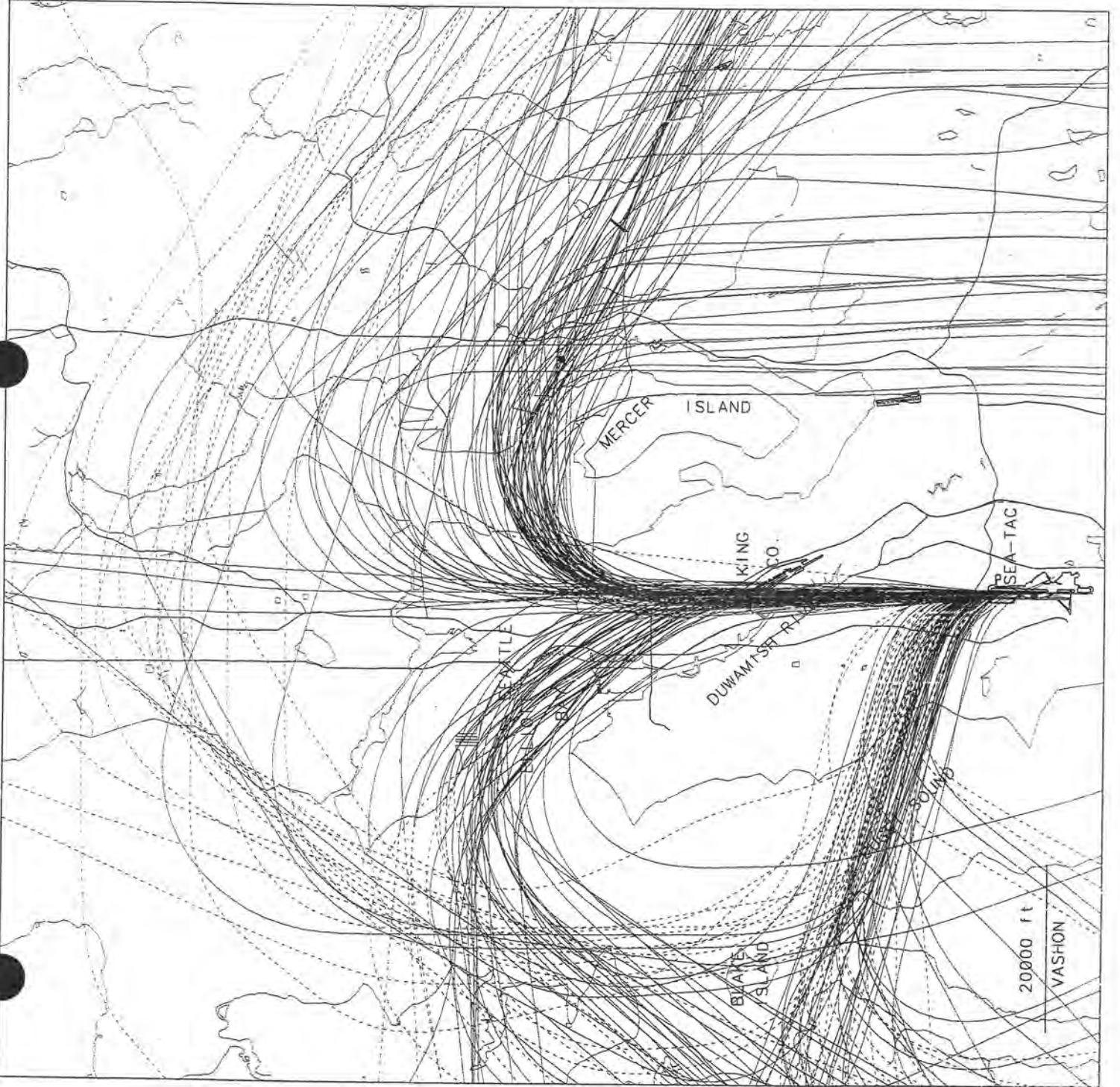
more flights would
operate using FMS
technology.

Your approximate
location



08/06/99
 6:00am
 to
 10:00pm
 North
 Flow
 Departures

*Note flights diverted
 How to be diverted
 above "Blue Angels"
 during*



2037 87th Ave NE
Bellevue, WA 98004

January 28, 2000

Barnard Dunkelberg & Co.
c/o Mr. Michael West
1122 East Pike St., #1286
Seattle, WA 98122

Gentlemen:

We support the split east turn proposal and any other appropriate change that reduces aircraft noise in the Clyde Hill community.

When the wind is from a certain direction, the aircraft noise is seemingly continuous. During the warm months, we have to choose between opening the windows and thus increasing the noise heard indoors or leaving the windows closed and adding to our discomfort. We believe that since all our neighbors share the benefits of SeaTac airport then it is only fair that the noise from the aircraft is likewise shared.

We are hopeful that you will ameliorate this burden.

Respectfully,

 
Mr. & Mrs. Jesse D. Reingold

Subject: Jet Noise
Received: Sun Feb 6 21:56:30 2000
From: SBORGFORD@aol.com

Gentlemen:

We have lived in our Medina home for 31 years. We have never been bothered by the jet noise until about three years ago. It has increased to a point where we feel it is intolerable. As I write, I hear jets overhead every few minutes.

I strongly endorse the proposal of routing aircraft over non-residential areas like the Duwamish Industrial area and Elliott Bay. If aircraft need to be routed over residential areas they should be spread out or split into two paths as proposed by the "Split East Turn."

I have lived in the Seattle/Bellevue area all my life. My father is a retired United Airline Captain therefore I appreciate all the benefits our airport has brought us. But I feel it is imperative to more equitably distribute the noise.

Thank you for considering our view.

Sheri and Richard Borgford
7841 NE 10th
Medina, WA 98039

Subject: Part 150 Vote
Received: Mon Feb 7 12:43:49 2000
From: "Stephen Jensen" <sjensen@drg.com>

Dear Mr. Andriesen,

I currently live in Enatai, a neighborhood in SW Bellevue. Over the past several years, air traffic and its related noise has seemingly increased tremendously over our house. So much so, it is a significant reason why our house is up for sale and we're moving to Issaquah. I believe it is unfair to place so much of the traffic burden on one area and hope you'll push for a more equitable distribution of traffic.

PS -- Is there a reason why air traffic on north flow days can't be sent west over Elliot bay then south over Puget Sound until sufficient elevation is gained prior to swinging east?

Thank you.

Stephen Jensen (sjensen@drg.com)
Direct Resources Group
316 Occidental Ave S, Suite 406
Seattle, WA 98104
tel: 206-749-0001 fax: 206-749-0005

Subject: Aircraft Noise
Received: Mon Feb 7 12:56:37 2000
From: "Allison Reeves" <allisonr@scinns.com>

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn".

Jim & Roberta Weymouth
1445 Evergreen Pt. Road
Medina, WA 98039

425-454-3648

Subject: Too Many Planes over Clyde Hill
Received: Mon Feb 7 13:47:31 2000
From: "Forell, Jerry @ Seattle" <jforell@cbricharde

All we ask is fairness. Is that too much for our government to deliver? I have listened to all the arguments from Mercer Island and I haven't heard one that made any sense. Have you? What was it? Its all emotion and I don't blame them.

I am tired of this argument that we will not notice the reduction in planes. Does this really sound good to these people? Let us decide if we notice it or not. Only a dope would buy into that argument. Less planes now not in three years.

Jerry Forell
CB Richard Ellis
(206) 292-6103

Subject: East Turn
Received: Mon Feb 7 16:22:35 2000
From: "Arthur Dietrich" <ad@eskimo.com>

Mr. Michael West
Barnard Dunkelberg & Co.

Dear Sir,

We are long time residents of Medina and the north bound jets fly over our house.

We endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliot Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "split East Turn". We urge you to support the proposed routing of aircraft's.

Sincerely,

Arthur and Rose Marie Dietrich, Medina WA 98039, Tel: 425 454-1208
ad@eskimo.com

Have a good day, Arthur D. ad@eskimo.com

Subject: Split east turn proposal
Received: Mon Feb 7 16:55:48 2000
From: TSUTICH@aol.com

Dear Mr. West,

I am writing you today in support of the split east turn proposal to be discussed on February 9, 2000 at SeaTac Airport.

As a resident of Medina since 1981, I have endured more than enough jet noise. For 19 years I am often awakened at 6:00 AM to the all too familiar roar of jet engines passing directly over our home. I believe that it is unfair that this traffic pattern has gone uncorrected for so long!

The split east turn proposal that is currently being discussed is a fair and equitable solution as no one should be asked to shoulder the burden of this noise 100%. I urge you to please consider our hardship, as this problem has existed far to long without resolution.

Sincerely,

Tim Sutich
8819 NE 2ND PL
Medina, WA

Subject: Medina Aircraft Noise
Received: Mon Feb 7 18:23:05 2000
From: "Jan-Medina" <Jan-Medina@email.msn.com>

I would like to express the feelings of our family, having lived in Medina for over 30 years, regarding aircraft noise over Eastside neighborhoods. Personally, we do not feel that it is a major problem that needs any more study, any more expense, or any more effort. With new generation aircraft, the noise level is greatly reduced & except for a very few times in the summer, we are not that aware of any significant noise. Actually, the low flying traffic spotters seem to make more noise than the jets do & are much more annoying, particularly in the early morning hours. While it might be nice to have the noise dispersed over a wider area & shared by all, the population growth in the future will probably do that automatically as the growth disperses into areas now sparsely populated. If changes are necessary, it might be worthwhile to look at making the turns over the widest part of Lake Washington. north of the Points, so that they would be at a higher altitude before reaching the Kirkland shoreline & this would have little impact on total flight time. We feel that this question has been studied to death & it is time to put it out of its misery & let's all "get a life." Jan & John Roehr

Subject: Consultant Part 150 Committee
Received: Mon Feb 7 18:42:40 2000
From: "Sally H. Rytand" <shrytand@foxinternet.net>

Mr. Michael West:

I endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Sincerely,

Sally H. Rytand shrytand@foxinternet.net

Subject: Part 150 Committee Recommendations
Received: Mon Feb 7 18:55:58 2000
From: MO7171@aol.com

Mr. Odermat and I are trusting that the committee will recommend to the Port that the current "East Turn" be split into a minimum of two paths for departures. The number of overflights above our Medina residence has increased exponentially since the current Four-Post Plan was enacted in 1990.

It seems reasonable and just to advocate that the noise burden be more equitably distributed at this time. We may be reached at 425.455.4776. Thank you for your consideration.

Subject: Equitable Distribution of Jet Noise
Received: Mon Feb 7 19:03:56 2000
From: Stacy Graven <sgraven@meydenbauer.com>

Dear Mr. West:

As a resident of Clyde Hill, I am writing to endorse the proposed solution of routing aircraft over non-residential areas and when necessary to fly over residential areas to split into two paths as has been outlined to the Part 150 Committee.

Sea-Tac Airport is a REGIONAL facility that benefits ALL residents, but currently the burden of aircraft noise is focused towards a limited number of neighborhoods including Clyde Hill, Medina and adjacent Bellevue neighborhoods. The proposed "split turn" more equitably distributes the burden created by a facility that is vital to residents in ALL neighborhoods in our region.

I am particularly interested in the creating a more fair and equitable solution as soon as possible and feel that this is critical prior to the addition of the the third runway at Sea-Tac. This really is an issue of fairness, as a resident I am willing to share in both the benefits and the burdens of the services that I use on a regular basis but I also believe that others who rely on these services should share in the burden as well.

I strongly feel that the committee should vote yes to pursuing this alternative and hope they will be reasonable in forwarding this for further action by the Port of Seattle.

Thank you.

Stacy Graven
Resident
9321 NE 26th Street
Clyde Hill, WA 98004
(425) 462-9442

Subject: Seattle air traffic routing
Received: Mon Feb 7 20:01:57 2000
From: Ruth Whitten <ruthw@whitten.net>

Please consider rerouting air traffic so that the air traffic noise will be more widely distributed. Air traffic can only increase with population and commercial growth.

I live in Medina. The very loud cargo planes in the late hours of the night frequently wake me up. Sometimes at say 4AM I awake and wonder if the military is scrambling planes, the noise is so loud, low and continuous.

Subject: [No Subject]
Received: Mon Feb 7 22:00:37 2000
From: "Tom Stotler" <tomstotler@mindspring.com>

We endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay), and when they fly over residential areas they should be spread out or, at minimum, split into two paths as proposed by the "split East turn". It is time to more equitably distribute the noise burden associated with a regional facility (that benefits all of us).

Tom & Dinah Stotler
8802 Northeast 20th Street
Clyde Hill, WA 98004

Subject: Jet Noise / East Turn
Received: Thu Feb 3 19:26:09 2000
From: budncm@mindspring.com

My wife and I have lived in Clyde Hill for 34 years and have put up with more than our share of jet noise from the north wind east turn jet routes. We strongly support a dispersal of jets to a broader corridor and increased use of the Duwamish Industrial corridor.

Prior to the Arab oil price increases, jets on a north wind departure continued over Puget Sound far north before making the east turn. Because the jets were then at a much higher altitude the noise was greatly mitigated for all people below. Is this not a possible solution?

Subject: Jet noise over Medina
Received: Thu Feb 3 17:42:10 2000
From: "William Smith" <wsmith7@uswest.net>

PLEASE reconsider the FAA's position on SeaTac flight paths in the future; in particular, please put more jets on the Duwamish Corridor insted of over Medina. Just this morning (3 Feb. 2000), in the 6:45 to 7:30 am timeframe, aircraft after aircraft (i,e, every 2-3 minutes) passed over our house in Medina disturbing any and all no matter how poor one's hearing!!! Please, therefore, come up with a plan that shares the PAIN with other locales..... all we ask for is a fair distribution of the burden. Thank you for your consideration of this matter.

Marilyn&William W. Smith

Subject: air traffic noise
Received: Thu Feb 3 18:20:17 2000
From: "Bill Wahl" <wwahl@uswest.net>

WILLIAM D. WAHL
700 SE Shoreland Dr.
tel.: (425) 454-6519
Bellevue, WA 98004
fax: (425) 454-0756
email: wwahl@uswest.net

Mr. Jack Block, President
Port of Seattle Commission
PO Box 1209
Seattle, WA (8111-2205

Mr. Larry Andriesen
Federal Aviation Admin.
1601 Lind Ave. SW
Renton, WA 98055

Barnard Dunkelberg & Co.
C/O Mr. Michael West
1122 East Pike St., #1286
Seattle, WA 98122

Dear Sirs:

The purpose of this letter is to respectfully request a change in the departure patterns of aircraft from SeaTac Airport to reduce the impact of jet noise upon myself and my neighbors. I request you endorse the routing of aircraft over non-residential areas. Where this is not possible, they should be spread out to minimize impact to one specific area, which is presently the case.

At the present time, when the weather favors Northbound departures the constant disagreeably loud aircraft noise awakens me as early as 6:00 AM when all the flights head out. Either send the airplanes further north until altitude is gained, or split up the routes in order to create a semblance of fairness as to the noise impact.

The present situation is intolerable.

Respectfully,

Subject: Residential Jet noise
Received: Thu Feb 3 18:59:07 2000
From: "Doug Leigh" <theleighs@email.msn.com>

Dear Sirs:

We endorse the proposal of routing aircraft over non-residential areas and when they must fly over residential areas they should be spread out or, at least split into two paths as proposed by the "Split East Turn."

Many a

summer day/evening on our patio has been interrupted by aircraft noise.

This should not affect the quality of life in our neighborhoods and is a

major concern in light of the potential growth of our area with the

associated increase in the number of jets flying over our homes. Thank you for your attention to this matter.

Douglas and Nancy Leigh

Subject: Air traffic noise over Medina
Received: Wed Feb 2 22:59:43 2000
From: CSMYTHIES@aol.com

Dear Mr. West,

I wanted to complain NOISILY about all the noise that comes from the skies over Medina whenever a jet flies overhead as it turns towards the east after take-off from Sea-Tac airport. And it seems to happen only when the weather is nice and everybody wants to be outdoors. Why should Medina get all the noise pollution, when it can be shared with other communities so it becomes more tolerable for everybody? There are HUNDREDS of planes that go overhead every day when they are taking off towards the north. It's not a small problem. It is a BIG NOISY problem, and something needs to be done about it. Because I'm tired of coming home after a hard days' work, wanting to relax, and all I can hear is RRRRRROOOOAAAARRRRRRRRRRRR!!!!!!!!!!!!!!!!!!!!!!
This letter is in SUPPORT of the split east turn proposal. Please put more jets on the Duwamish Corridor instead of exclusively over Medina, and for Goodness' sake give us some PEACE.
Sincerely, Christopher Smythies M.D.

Subject: Aircraft Noise
Received: Wed Feb 2 23:02:25 2000
From: John and Joan Valaas <jvalaas@uswest.net>

To: The Part 150 Committee
Barnard Dunkelberg & Co.
c/o Mr. Michael West

cc: Mr. Jack Block, President
Port of Seattle Commission

Mr. Larry Andriesen
Federal Aviation Administration

Re: Aircraft Noise

I am writing to express my support of the split east turn proposal for aircraft takeoffs from Seatac. It is high time that communities other than Medina share the burden of aircraft takeoff noise. This proposal would be minor move toward that end. I urge you to adopt the proposal.

Secondly, I urge that the FAA reconsider its position and put more jets on the Duwamish corridor instead of over Medina.

Thank you.

Subject: Consideration of the FAA split east turn
Received: Wed Feb 2 19:18:12 2000
From: LLEnkema@aol.com

To: The Port 150 Committee
c/o Mr. Michael West

Dear Committee and Mr. West:

As a Medina resident for 12 years, we have experienced major jet noise and have never understood why the jet travel pattern is not scattered on the east turn so that no one community is penalized unduly.

You now have the opportunity to alleviate this burden by approving the split east turn. It seems so logical to me to spread the noise among many areas, and so we encourage you to favorably consider this proposal. We understand that those who have had no noise will object to having any at all. However, since the jet noise will increase as the airport becomes busier, it is even more important that no one area is asked to carry the burden of all the noise.

Thank you for voting to approve the split east turn.

Sincerely,

Linda and Jeff Enkema
314 Overlake Dr. E.
Medina, WA 98039
425-454-9988

Subject: Jet Noise
Received: Thu Feb 3 01:20:10 2000
From: "barbara krekel" <bkrekel@hotmail.com>

My wife and I have lived at our present home in Medina at 8832 Overlake Drive West for over 10 years. For the first several years, we thought that the jet noise would lessen with time as officials and activists came to realize that the jet noise burden in our neighborhood was overwhelmingly unfair, or improvements in jet engine technology would reduce noise to levels that would not be noticed. Neither of these mitigations have occurred.

Last summer I decided to start calling the Jet Noise Line on occasion when the noise was especially bad because I came to realize that, since the flight path of these jets was directly over our home, if I did not complain, decision makers could say that those most affected did not seem to be complaining, so maybe the problem was not so bad. Well, the problem is bad at our home, and I could not call as often as I wanted because I was often busy with other things like heavy-duty yard work or entertaining guests and all of the other things that a home owner must be doing to keep up. Also, the advice was to call whenever jet noise bothered me, but that would lead to the absurdity of calling every time a plane roars over head, which is often every one or two minutes.

The noise level at our home is extremely bad when the wind is from the north and jets are taking off to the north. I can even hear them plainly tonight from inside my home (all windows closed and all windows double-paned) as I write the letter. The noise is particularly bad during the summer when we have windows open in the living room/dining room/kitchen area and our bedroom, all of which of course face south toward the lake view and take the brunt of the noise from the jets coming up the lake and turning while still climbing, right over our home. Our patio and back yard also face the south.

We do not have air conditioning, so we cannot close our windows on warm days. And why should we have to hide inside on nice days to carry on a normal conversation?

The jet noise is extremely irritating when we are trying to enjoy warm days and have a conversation in the yard or on the patio. The noise from one jet builds to a level that we cannot talk with out yelling, then drops off slowly to where it just disappears when the next one starts building to very low levels. This goes on one after another, often without breaks or relief. Distributing jet noise to other flight paths would at least give us some time between jets and thus the noise would not be constant.

The jet noise is also very annoying during the early morning hours weekdays and especially weekends when I really would like to sleep later than 5 or 6 in the morning. I cannot go to bed too early because I have to eat a snack before going to bed (since I am a diabetic), which cannot be too soon after dinner, so I can sleep through the night without my blood sugar dropping too low.

I have heard the argument that since people in Medina fly a lot, they should have to suffer the jet noise. Well, I only fly once or twice a year and I cannot figure out how that relates to having to listen to hundreds of planes flying overhead every day. Certainly, people from all over the Seattle area fly as much as I do and by this reasoning should share equally in the jet noise. In particular, I think that residents of Mercer Island and South Bellevue on average travel by airplane at least as often as I do, and probably average as many flights as people in Medina.

I have heard the argument that spreading the jet noise around would only upset more people who are not upset now. Well, maybe the noise should have been spread around in the past so that there would then not be an increase

in people getting more noise at this time.

I am unable to attend the Meeting on February 9 at Sea Tac as I am a diabetic and have to eat my dinner during the meeting time frame of 6-8 pm. I hope that you will take my plea for jet noise relief as stated in this e-mail as a proxy for my attendance at the meeting. I will be there in spirit and will be praying for some relief in the near future.

Thank you for your kind attention.

Get Your Private, Free Email at <http://www.hotmail.com>

Subject: Aircraft noise over Bellevue, WA
Received: Thu Feb 3 21:34:43 2000
From: Rick Bohdanowicz <rickb@aventail.com>

Hello there. I was given your names by the city of Medina, WA. I am very pleased to have your contact information after three years of dead-ends pursuing the Seatac airport noise hotline. I believe that this is a very important issue and I'm worried that many residents here have given up voicing their concerns to the Seatac answering machine. While I appreciate some of the complexity of this issue I ask you to please consider the following brief statements:

1. It seems incredible to Bellevue residents that such heavy aircraft traffic is now directed to turn over the most heavily populated area of the region. It seems to us that aircraft routing is now being done with significant disregard for residential distribution and is optimized for the airlines.
2. I have logged numerous complaints with Seatac with the general response being "that's the way it is".
3. On multiple occasions I have been awakened by noise while sleeping, I have been interrupted in conversation and I have been asked by my children about "thunder".
4. The frequency of occurrence is already less than once per minute during morning and evening hours. The additional runway plan will only make this worse, which is beyond my imagination.

I greatly appreciate your consideration of this issue.

Richard Bohdanowicz
1848 77th Ave NE
Medina, WA 98039
425-455-9914

Subject: Aircraft Noise
Received: Thu Feb 3 23:33:51 2000
From: "Jerry Henderson" <jerryair@speakeasy.org>

I received a pamphlet today about aircraft noise from the City of Medina and have the following comments:

First of all, I am not bothered by aircraft noise at by home on Clyde Hill. I and my children rather like hear an airplane and look up into the sky to watch it pass over. Frankly, highway 520 is much more of a problem for me.

I do agree that aircraft should be routed over non-residential areas where feasible.

I am very concerned about the proposed rerouting shown in the pamphlet, for a number of reasons. Turning southbound aircraft as quickly as shown will increase the noise levels over residential areas in Seattle, south Mercer Island and ????. Furthermore the need to turn sooner will place these aircraft at lower altitudes over these areas than they are currently when flying over west Bellevue, resulting in noise levels higher than west Bellevue currently experiences. Also, the proposed changes will require changes to the arrival and departure routes that light aircraft using Boeing Field must fly, probably requiring them to fly at lower altitudes and therefore increasing noise in some areas. Furhtermore, the lower altitudes that these changes would cause aircraft to fly over some areas could be a safety concern.

If changes are to be made to the SeaTac arrival and departure corridors, I would recommend that aircraft fly straight out further before turning so that increased altitude results in lower noise levels. Turning southbound aircraft sooner my mitigate noise here in Bellevue, but is only going to make it worse, much worse, elsewhere and have a potential negative impact on safety.

r
Cheers!

Jerry Henderson

9828 NE 34th Pl.
Bellevue, WA 98004
(425) 454-8243 - voice
(425) 455-3413 - fax

Subject: Aircraft noise
Received: Fri Feb 4 00:14:05 2000
From: "Doug Frazer" <frazerfineart@msn.com>

We endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn".

Lisa Cabreza and Doug Frazer
1150 Evergreen Point Rd
Medina WA 98039

Subject: East Turn Jet Noise
Received: Fri Feb 4 01:44:36 2000
From: MerShank@aol.com

7863 NE 10th Street
Medina, WA 98039
February 1, 2000

Michael West
Consultant Part 150 Committee
Barnard Dunkelberg & Co.
Seattle, WA 98122

Dear Mr. West,

My husband, Craig Shank, and I are residents of the City of Medina. We support the two proposals ("Split Turn" and "Use Duwamish Industrial Corridor") to more equitably distribute jet noise currently generated by the East Turn Flight Track. We recognize that it is not possible to eliminate aircraft noise in an urban area; however, we also believe that jet noise belongs to all communities benefiting from access to a major international airport. We also believe that as much air traffic as possible should be routed over non-residential areas, such as the Duwamish Industrial Corridor.

It is important for the committee to understand that the concentrated periods of jet noise in the morning and the evening generated by the East Turn stops conversations, disrupts sleep and interrupts activities in our neighborhood.

As the good weather arrives, my now eight-year old son will run outside shouting "The Blue Angels are back!" only to find yet another jet making its turn over our house. While a few planes might be a minor irritation, the steady roar of jets passing overhead is very frustrating. Last summer, the neighborhood children spent weeks preparing a play that they held outside on a beautiful evening. The audience heard lots of jets but only a few lines of the play.

We urge the Committee to adopt a long-term view of the jet noise problem. There will be more and more jets flying overhead in the years to come. This noise must be distributed equitably among all communities in the Puget Sound region since we all use the airport and benefit from its commerce. The Committee must recommend:

- 1) Split the East Turn as proposed by the Port of Seattle to more equitably distribute jet noise from east and southbound planes.
- 2) Reopen the Duwamish Industrial corridor for departures to the Los Angeles area (this would reduce the number of planes flying over residential communities).
- 3) Set restrictions on the maximum number of planes allowed to fly over residential communities.

Thank you for your time.

Sincerely,

Meredith T. Stelling and Craig E. Shank

Subject: Upcoming Part 150 Vote
Received: Fri Feb 4 10:40:53 2000
From: "Long, Rob" <RLong@golder.com>

Dear Mr. Block, Mr. Andriesen and Mr. West-

I am writing to voice my support for proposed solutions currently being considered of routing Sea-Tac aircraft over non-residential areas and, when aircraft must fly over residential areas, doing so in a more equitable manner by spreading out the flights over a broad area or into multiple paths.

A more equitable distribution of aircraft noise is a fair solution for Puget Sound area residents and for the communities currently experiencing most of the impacts. There is no reason why noise impacts should be concentrated in one area if it is feasible to distribute the impacts over a wider area. All residents of the Seattle area benefit from Sea-Tac. It is only fair to distribute the impacts, if possible.

It is important for you to know that this is not only a case of complaints by certain wealthy and influential Medina residents. The most highly impacted areas, I believe, are located in west Bellevue just south of Downtown and in the Enatai area. Many of my neighbors in Bellevue are concerned about the continual jet noise overhead. Less jet noise is possible!

Therefore, I encourage the Port and FAA to continue the process of considering alternatives to reduce aircraft noise to the Eastside communities currently impacted by the East Turn tracks.

Thank You,

Rob Long
1810 104th Ave SE
Bellevue, WA 98004
425-637-9593

<mailto:rlong@golder.com>

Subject: Medina Jet Noise
Received: Fri Feb 4 13:04:19 2000
From: DEbstyne@aol.com

We endorse the proposal of routing aircraft over the non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Bonnie & Doug Ebstyne
720 Overlake Dr East
Medina, WA 98039

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To: dschulze@ci.medina.wa.us
 From: "Frankenberg, Ernest" <Ernie.Frankenberg@fsbt>
 Subject: AIRPLANE NOISE FLYER
 CC: BLOCK.J@PORTSEATTLE.ORG LARRY.ANDRIESEN@FAA.G
 MJWEST@PRODIGY.NET

I JUST RECEIVED THE FLYER RE: AIRPLANE NOISE IN MEDINA/BELLEVUE.

I'M A RETIRED AIRLINE PILOT AND NOW DO FLIGHT INSTRUCTION. I'M VERY WITH THE 'SUMMA DEPARTURE' AND UNTIL NOW NEVER UNDERSTOOD WHY THE P THE AFFECTED AREA HAVE NOT DONE SOMETHING TO ALLEVIATE THIS SITUATI WITH ANY PROBLEM SUCH AS THIS SOMEONE WILL BE AFFECTED NO MATTER HO DEPARTURE ROUTE IS CHANGED.

THE 'SPLIT TURN' WOULD HELP, BUT THERE ARE OTHER SOLUTIONS. HERE IS WHICH WOULD 'SHARE THE HURT' MORE EVENLY OVER THE PUGET SOUND AREA.

CONTINUE USING THE 'SUMMA' DEPARTURE, BUT CHANGE THE TURN ALTITUDE PRESENT 4000 FEET TO A VARIABLE ALTITUDE WHICH WOULD BE ASSIGNED TO DEPARTING FLIGHTS. FOR INSTANCE, FLIGHT 1-TURN APON REACHING 3000 F FLIGHT 2- TURN APON REACHING 4000 FEET; FLIGHT 3- TURN APON REACHIN FEET; FLIGHT4-TURN APON REACHING 6000 FEET; ETC.

ANOTHER SOLUTION WOULD BE TO VARY THE HEADING FOR THE FIRST TURN FR PRESENT 070 DEGREES TO HEADINGS FROM 030-150 DEGREES.

IF SOME SOLUTION SUCH AS THIS IS ADOPTED THE SOUND PATH OF THE AIRC WOULD BE SPREAD OVER THE AREA RATHER THEN 200 AIRPLANES PER DAY OVE EXACT SAME AREA.

ANOTHER ASSOCIATED PROBLEM WHICH SEEKS SOLUTION REGARDING NOISE IS SEVERAL AIRLINES (DELTA, AMERICAN AND OTHERS) ARE STILL OPERATING O TWO AIRPLANES ON LONG ROUTE SEGMENTS AND THESE AIRCRAFT ARE THE WOR OFFENDERS. A SEPARATE DEPARTURE CORRIDOR FOR THESE AIRCRAFT WOULD B BEST SOLUTION AND WOULD ENCOURAGE THE AIRLINES TO UPGRADE SOUND SUP OR RETIRE THESE OLD AIRPLANES.

I WOULD BE GLAD TO HELP ON THIS PROBLEM, BUT I WILL NOT BE ABLE TO THE MEETING FEB 9.

MY ADDRESS IS: 108-94TH AVE. N.E. BELLEVUE, 98004

TEL, HOME-425-453-2348; BUS 206-662-8777. PLEASE FEEL FREE TO CONTACT CAN HELP IN ANY WAY. I HAVE OVER 40 YEARS OF AVIATION EXPERIENCE.

THANKS,

ERNIE

Move this message to:

Subject: Reduce the jet noise
Received: Fri Feb 4 15:09:25 2000
From: "jackson_arnold" <jackson_arnold@email.msn.co

For years people on the eastside (Medina, Clyde Hill and parts of Bellevue) have had to listen to the noise from jets departing SeaTac on days when they must take off to the north. Something needs to be done to eliminate or substantially reduce this noise problem.

I endorse the proposed solution of routing aircraft over non-residential areas and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths.

In addition, jet flights taking off over heavily populated areas should not do so under full power until they are outside these areas. This is common practice in the NY/NJ commercial areas.

Patti A. Dier
1605 73rd Avenue N.E.
Medina, WA 98039

To: Mr. Jack Block
Mr. Larry Andriesen
Mr. Michael West

Please endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two or more paths. This plan shares the *noise impact* among all who need and use our airport. I believe this to be a reasonable and fair plan.

Sincerely.



Laura van Dernoot
7317 Seward Park Ave S
Seattle, WA 98118

23 February 2000

To Whom it May Concern,

I am writing to express my opposition to the split east turn. While I understand the Leschi/Madrona folks are asking for airplane noise "equity," our neighborhood already has airplane noise from Boeing and Renton fields and so shifting Sea-Tac airplanes overhead isn't exactly equitable. Furthermore, it makes better sense for the Port to shift to a flight pattern over the Duwamish industrial corridor, where residential neighborhoods are not in question.

I appreciate your consideration in this matter.

Sincerely,


Laura van Dernoot

F. Dale Dier
1605 73rd Avenue N.E.
Medina, WA 98039

To: Mr. Jack Block
Mr. Larry Andriesen
Mr. Michael West ✓

Please endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two or more paths. This plan shares the *noise impact* among all who need and use our airport. I believe this to be a reasonable and fair plan.

Sincerely.



Subject: "counting" of points
Received: Wed Feb 9 14:37:22 2000
From: Nick Vedder <vedder@home.com>

Hello-

Sorry to bother you again.

It seems that Dr. Rudolph has now changed from adding individual points together to just counting individual points locations affected one way or another. Again, since these are historically based, rather than reflective of true population *distribution* and since the degree of improvement/deterioration is not reflected by this, is this not just as false as his prior "summation" analysis?

Please speak up on this point tonight.

Thanks again.

Should be interesting!

-Nick Vedder

Nicholas B. Vedder
vedder@home.com

Subject: Jet noise over Medina
Received: Wed Feb 9 17:58:39 2000
From: Don Hansen <mudaship@ricochet.net>

Dear Sir: As a long-time resident (19years) of Medina, I am writing you to let you know of my unqualified support for the possibility before us to gain some relief from the jet noise that has increased over our homes. There have been many mornings I have been awakened by 5:30 by low-flying jets, One After the Other. I would love to see the splitting of this East Turn over our homes so that the impact of current, and future air traffic is more equitably experienced over a larger area than Medina, Clyde Hill, and bordering Bellevue areas. If the route can not be split into two, then, ideally, I would like to see the FAA reconsider its position and put more jets on the Duwamish Corridor where residential people's lives would not be so disrupted. Thank you very much for your consideration.

Susan Hansen
426 Upland Rd.
Medina, WA 98039

Subject: Split East Turn Proposal: More jets in Duwamm
Received: Tue Feb 8 21:43:06 2000
From: Ralph Barton <ralphb@microsoft.com>

I strongly support the use of 2 corridors in the East Turn. It is equitable to both Mercer Island area and the Points Communities area. Currently, the points communities bear a disproportionate burden from aircraft noise for this route.

Thanks,

Ralph Barton

Subject: Aircraft Noise
Received: Tue Feb 8 23:20:38 2000
From: "Heather Erdmann" <rhjohnson@hotmail.com>

As residents of Mercer Island, we must express our opinion regarding the current discussions of changing the flight plans. We feel the Port of Seattle Commission, the Consultants, Bernard Dunkleberg & Co., & the Citizen's Advisory Committee have all failed to honor their guiding policies to improve overall noise environment AND NOT SHIFT NOISE FROM ONE RESIDENTIAL COMMUNITY TO ANOTHER. The split east turn proposal violates both of these stated policies.

I have read where the Consultant's noise impact data clearly discredits the split turn plan as it shows a significant increase in the number of residents harmed and an increase in overall community airplane noise.

Because of this, we believe the split turn is absolutely NOT an acceptable option.

Sincerely,

Robert W. Johnson
Heather Erdmann

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Subject: Aircraft noise and the east-turn
Received: Wed Feb 9 00:39:26 2000
From: Meanbillygreen@aol.com

I am writing this letter to urge you to implement an appropriate and fair plan that would bring some relief to the thousands of residents living under the so called east-turn. On many otherwise pleasant days the jet noise can be quite excessive. Just as the noise begins to fade from an overhead jet, it then begins to build again from the next plane. This pattern sometimes repeats itself for hours on end.

I question why jets are no longer routed up the Duwamish corridor toward Puget Sound. A split turn is one possible answer. But rather than route low flying jets over Mercer Island, would it not make more sense to route east bound traffic further north so that they would have greater altitude before turning to the east?

It is my intention to attend the February 9, 2000 meeting dealing with these issues. I do not mind having my fair share of jet noise; however, I do desire that this noise be more equitably distributed than it has been in recent years.

Sincerely,

William G. Burnett, Jr.
Medina, Washington

Subject: Less Jet Noise Please!!
Received: Wed Feb 9 00:47:48 2000
From: "Robert & Jenny Pascal" <rpascal@gte.net>

We endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn".

We have lived in the Enatai (Bellevue) neighborhood since 1974 and did not agree to become a victim of the noise of all of the east turns. Let's be fair about this and not penalize some of us only because we already are the victims. Let's share the consequences as well as the benefits of our transportation system!

Bob and Jenny Pascal
10215 SE 13th Place
Bellevue, WA 98004

Subject: aircraft routing
Received: Wed Feb 9 00:59:07 2000
From: "judy jesiolowski" <judyaj@hotmail.com>

Just a quick e-mail to let you know I support the proposal of routing aircraft over non-residential areas (i.e. the Duwamish industrial area and Elliot Bay). I also believe that when aircraft must fly over residential areas the routing should be spread out, or at least split into two paths as proposed by the "split east turn".

Thank you for your consideration on this matter.

Judith Jesiolowski
judyaj@hotmail.com
9000 NE 39th Pl
Bellevue, WA 98004
(425) 709-2551

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Subject: [No Subject]
Received: Wed Feb 9 08:36:16 2000
From: Marc Pujalet <mpujalet@earthlink.net>

As a tax paying citizen of the Eastside, I feel it is only equitable to share the noise burden we experience. It is impossible to carry on a conversation outside when the jets pass overhead. Anyone living in the Northwest knows what a treat it is to finally be outside during our summer months.

I strongly endorse the proposed solution of routing aircraft over non-residential areas and sharing the noise over residential neighborhoods in the "Split East Turn."

Thank you.

Nikette Pujalet

Subject: jet noise
Received: Wed Feb 9 10:43:18 2000
From: "joturner" <joturner@seanet.com>

Hello:

I fully endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when tthey must fly over residential areas they should be spread out or, at a minimum split into two paths as proposed by the "Split East Turn".

Thank You
Joyce Turner

Subject: Re; No Split East Turn
Received: Mon Mar 6 19:31:28 2000
From: "Sherab" <sherab@zipcon.net>

To everyone which it concerns,

We're residents of the Columbia City area and have become aware of the plans to have departing flights turn over the Rainier Valley, Seward Park and Mercer Island. Bringing 125 LOW flying jets per day over my neighborhood. I feel that we already have enough noise impact to our area with Boeing jets and planes landing near us. Also when the blue angels fly, they turn, over my house...if this new plan is anywhere near this low or loud I'm very troubled by it. It seems that we have a lot of water near by, why can't the planes turn over the sound instead of over the major metropolis areas? Thanks for listening, and please don't let the jets turn over our neighborhood. Sincerely, Marcia Oberg and Randal Jeter

Subject: Fw: Part 150 Meeting on 9 Feb at SeaTac
Received: Wed Feb 9 13:35:35 2000
From: "cvj" <cvj@crosswinds.net>

Mr. Jack Block, President
 Port of Seattle Commission

Mr. Larry Andriesen
 Federal Aviation Administration

Mr. Michael West
 Barnard Dunkelberg & Co.

Gentlemen,

Please find below a self-explanatory e-mail I have just sent to State Senator Jim Horn regarding tonight's meeting at the Sea-Tac Auditorium.

The capacity of the auditorium is limited and I fear that the misleading information regarding the start of the meeting (5:30 PM i.s.o. 6:00 PM) broadcast by the proponents of the "Split Turn" is an obvious attempt to "stuff the ballot box".

Unless all interested parties have an opportunity to attend the meeting and voice their opinion, the meeting will be a travesty.

Sincerely,

Claus V. Jensen
 9325 S.E. 57th Street
 Mercer Island, WA 98040

----- Original Message -----

From: "cvj" <cvj@operamail.com>;
 To: "Kosik, Keith" <Kosik_Ke@leg.wa.gov>;
 Cc: <philpo@home.com>;
 Sent: Wednesday, February 09, 2000 10:04 AM
 Subject: Fw: Part 150 Meeting on 9 Feb at SeaTac

> Dear Keith,
 >
 > Please bring the below matter to Senator Horn's immediate attention.
 >
 > I think the tactics that are being employed by the proponents of the split
 > track proposal border on the unacceptable.
 >
 > I urge Senator Horn to contact the Port of Seattle to ensure that
 > meeting
 > facilities tonight will accommodate all interested parties - if that can
 > not
 > be assured the meeting will be a travesty.

> Sincerely,

> Claus V. Jensen
 > 9325 S.E. 57th Street
 > Mercer Island, WA 98040

> ----- Original Message -----

> From: "Philip Ohringer" <philpo@home.com>;

Subject: Less Jet Noise
Received: Sun Feb 13 12:25:55 2000
From: Paul Cooke <catchbigair@yahoo.com>

Dear Sirs,

As a Bellevue resident of 14 years I have been bothered by the jet noise for a very long time and would like to see it diminished. For all these years it has been bothersome, but especially when the windows are open or when outside because the noise is so loud that all conversation must come to a stop until the jet has passed. This is particularly troublesome when I work from my home office and have to break a conversation with a customer, vendor, or employee to let the noise subside (I am CEO of Solar Systems & Peripherals, Inc.) I understand that we all use jets from time to time and should share in the noise they create but believe that the 'annoyance' should be distributed over a larger area.

Thank you in advance for your consideration,

Paul Cooke - Clyde Hill resident and,
Chairman and CEO
Solar Systems & Peripherals, Inc.
425-222-7588

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<http://im.yahoo.com>

Subject: (no subject)
Received: Sun Feb 13 23:03:41 2000
From: Doanerj@aol.com

Jack Block, President
Port of Seattle Commission

Larry Andriesen
FAA, Renton, Wa

Michael West
Barnard Dunkelberg & Co.

Gentleman,

I am writing to express my concern over proposed routing of aircraft over Medina , Bellevue and Kirkland. Everything that is possible should be done to route aircraft over nonresidential areas. At the very least a plan that spreads out the noise should be implemented.

Thankyou for you consideration.

Sincerely,
Rick Doane
4405 91st Ave NE
Yarrow Point, WA 98004

Subject: Jet Noise
Received: Wed Feb 9 12:37:52 2000
From: Brent Jackson <bjackson@trammellcrow.com>

I am writing to express concern about the current (and growing) jet noise problem that our community has experienced. I have lived in West Bellevue and Medina for the past 9 years. The air traffic has grown considerably, and during particular times of the year the noise it creates is so severe that normal conversations are halted and outdoor activities are interrupted.

I am willing to live with noise that comes with the territory. The benefit of living close in also has a cost, but the jet noise of the "regional airport" should not burden just a few neighborhoods as it does now. Instead, the "region" should share the burden or cost of this problem.

Therefore, I favor a plan to consider re-routing planes over industrial areas (versus residential areas) or out over the open water (top priority) and splitting the east turn to more evenly spread the noise.

Thanks for reviewing the issue.

Subject: SeaTac East-Turn Noise Issue
Received: Fri Feb 4 15:21:02 2000
From: dneuzil@harding.com

To: Larry Andriesen, FAA, and
Michael West at Consultant Part 150 Seatac Airport Noise Study

Dear Mr. Andriesen and Mr. West

My wife and I strongly recommend that the Port and the FAA adopt the proposal to split the East Turn in to two turns and to adopt any other appropriate measures which will spread the aircraft take-off noise more fairly over a larger area and reduce the intensity of noise impact on any one neighborhood.

We include here under Other Measures turning more take-offs out over Puget Sound, Elliot Bay and the Duwamish industrial area -- even if those measures add to the price of our airline fares -- if it can be safely done, then please do it!

We have lived in Clyde Hill since 1972, and we have noted with great displeasure the adverse noise intrusion increase since the eAST tURN WAS IMPLEMENTED SOME 10 YEARS AGO. Let us have a more equitable dispersal of the airport's noise impacts, please!

Dennis and Donna J. Neuzil

c/o

Dennis Neuzil, D.Eng., PE Associate Engineer
Harding Lawson Associates, Infrastructure, Inc.

411-108th Ave NE, #400 Bellevue, WA 98004

(425)-453-5545, (direct , 425-990-4149)

[FAX 425-453-6779]

E-mail: dneuzil@harding.com

Home address: 2307-94th Ave NE, Bellevue, WA 98004

Tel 425-455-1419

Subject: Jet Noise
Received: Fri Feb 4 16:11:58 2000
From: Carmencut@aol.com

Mr. West:

I am writing to urge you to give the residents in Medina some relief from incessant jet noise. I have lived here for 22 years and most of those years were delightful. However, for the last few years, we have experienced more and more aircraft noise. It is becoming intolerable especially on summer days when all traffic takes off to the North and then is routed over my neighborhood. Sleeping in is impossible as well as outdoor dining. I do not believe that I should be subjected to all of the noise. I would be more than

happy to share it if the flights were spread out over a larger area. Please help!

Carmen Cutting
1011 80th N.E. (P.O. Box 384)
Medina, WA 98039

Subject: East turn jet noise
Received: Fri Feb 4 17:30:09 2000
From: "Ronald Santi" <santirsk@concentric.net>

I support all of the proposals from Medina residents to at least fan the east turn to more fairly distribute this regional burden. What I don't understand is how it ever became an east turn. Throughout the 60's and 70's it was a west turn over Elliott Bay, the Kitsap Peninsula, and the Olympic foothills with virtually no impacts on populated areas. This makes sense from a noise and safety standpoint. Concentrating flights over populated areas is a disaster waiting to happen. If the east turn is necessary at all, significant noise reduction could occur if the jets simply gained another couple thousand feet of altitude by heading north another couple miles before making any east turns. E.g. the turn should probably occur over Kirkland which would occur at much higher altitude. My telephone : 425-451-8871. This will also spare Mercer Island since they cry the loudest.

Subject: [No Subject]
Received: Fri Feb 4 19:51:15 2000
From: mns1@juno.com

We endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Larry & Mary Sheriff
11009 SE Lake Road
Bellevue, WA. 98004
425 455 -2226

Subject: airplane noise
Received: Fri Feb 4 23:40:46 2000
From: PPitarys@aol.com

I live in Bellevue in the Vuecrest area (next to Clyde Hill). The airplane noise is quite unsettling. Tonight I was out walking, hoping for a peaceful and enjoyable time; but one plane right after the other flew LOUDLY overhead.

I support the proposal of routing aircraft over nonresidential areas (particularly the Duwamish Industrial area and Elliot Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn".

Thank you, '

Subject: aircraft noise
Received: Fri Feb 4 23:55:28 2000
From: "Bill & Susan" <sullhenn@msn.com>

Dear Sirs

We endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn".

Currently, we can hear jet noise essentially at all times when standing outside our home. While we understand the reality that makes this noise unavoidable, we believe the impact should be distributed more generally than it is today.

Thank you for your consideration,

Sincerely,

Bill Henningsgaard
Susan M. Sullivan

1645 Rambling Lane
Medina WA 98039

(425) 453-2621

Subject: Aircraft Noise
Received: Fri Feb 4 23:59:13 2000
From: Griner <bagl@maill.foxinternet.net>

Dear Mr. Andriesen:

Toward reducing aircraft noise, we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliot Bay) and when they must fly over residential areas, the routes should be spread out over a much wider area or at least split into two paths as proposed by the "Split East Turn".

In addition, all flights upon takeoff and landing, should not fly directly over the highest elevation landforms of our densely populated residential areas (e.g., Cougar Mountain, Clyde Hill, etc.) when other lower land elevation alternative routes do exist. The more distance between any land surface and any aircraft overhead, the less noise on that land. Using computer models of the elevation of densely populated residential areas and other necessary variables should reveal more successful solutions.

Thank you for considering these factors as you work to reduce aircraft noise.

Sincerely,

Dan T. and Beryl A. Griner
2110 92nd Ave. N. E.
Clyde Hill, WA 98004

Subject: Aircraft Noise
Received: Sat Feb 5 13:45:24 2000
From: Peter Youtz <peteryo@microsoft.com>

Barnard Dunkelberg & Co. c/o Mr. Michael West

I'm writing to voice my support for establishing a more equitable distribution of aircraft noise in the Seattle area. Specifically, I support the solutions of routing aircraft over non-residential areas and when they must fly over residential areas they should be spread out or at a minimum split into two paths as proposed by the "Split East Turn" plan. Please do what you can to support such a plan.

Thank you for your consideration,
Peter Youtz
726 95th Ave. N. E.
Bellevue, Wa. 98004
(425) 646-8051

Subject: Disagreement with Split East Turn Proposal
Received: Sat Feb 5 15:02:36 2000
From: "Rick Edwards" <locksley@foxinternet.net>

Dear sirs,

I received a brochure from the City of Medina implying Sea-Tac Airport operations cause significant noise pollution in Medina, Clyde Hill and east Bellevue. I vehemently disagree.

My wife and I have lived in the "affected" neighborhood for three years. Neither of us has ever been disturbed by noise from Sea-Tac operations. It's a stretch to even hear jet noise.

I see no necessity for the "Split East Turn" proposal.

Sincerely,

Richard W. Edwards

9951 Lake Washington Blvd NE #207
Bellevue, Washington 98004-6050
425 646-7260 (h)

locksley@foxinternet.net

Subject: Jet Noise
Received: Sat Feb 5 15:04:18 2000
From: "Andy Futrell" <hndyandy@mindspring.com>

I am a resident of Medina and as such am overburdened with jet noise. I know that Seattle must have an active airport in order for all citizens to enjoy all the things that it brings to our community. I do, however, feel that Medina, Clyde Hill, and our neighboring communities are overburdened with the present routing of the aircraft. I urge you to endorse the proposed solutions of routing aircraft over non-residential areas and when they must fly over residential areas they should be spread out, or at a minimum, split into two paths.

Thank you.

Andy Futrell
8469 Ridge Rd.
Medina Wa.

Subject: jet noise
Received: Sat Feb 5 15:21:14 2000
From: "dialrob" <dialrob@email.msn.com>

We endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliot Bay), and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn". There are times

I have to curtail a conversation in the backyard, because the jets are so loud, no one can hear each other. I understand the need for the flight path, but splitting it would be far fairer than the way it is now.

Robbins D. Harper
Diane C. Harper
1217 Evergreen Pt. Rd.
Medina, WA 98039
425-688-1562
dialrob@msn.com

Subject: jet noise
Received: Sun Feb 6 19:45:25 2000
From: "Craig Wells" <cwells98004@hotmail.com>

I support the proposed routing of aircraft over non-residential areas. When they must fly over residential areas they should spread out, or at least split into two paths as proposed by the "Split East Turn". The noise at my Clyde Hill home can be window rattling, and it seems fair to spread this burden around if technically feasible.

Craig G Wells
9006 NE 20th Street
Clyde Hill, WA 98004

January 29, 2000

Dear Mr. West,

Reference your article in the EJ this date :Spreading jet noise-----"

I read the proposals you have offered and they appear to be an improvement. However there seem to be ways to improve the situation even more. For example:

Westbound jets turn west over Duwamish-why not fly over Elliott Bay and north over Puget Sound?

Southbound jets turn over mid Mercer Island as proposed. Why not have some of them turn east over or north of I-90? (Larger ones?)

Eastbound jets proceed north and turn east at Medina as proposed. Why not proceed further north over Lake Washington (Large jets) and turn east?

This would further decrease numbers in one place and reduce disruption. We live in the Eastgate area and want to assure you that the noise at some times is terrible and consistent. If all of the above were put into effect, there would be a significant reduction in the frequency and intensity of the noise which would be appreciated and make our situation more liveable.

Thank you.

Leroy C. Kolin

Leroy C. and Vera E. Kolin, 3843 166th Avenue SE, Bellevue WA 98008-5850

**Appendix Twelve. Commission Action of Flight Tracks/FAA
Response**



Port of Seattle

July 21, 2000

Mr. Daniel A. Boyle
Acting Manager, Air Traffic Division
Federal Aviation Administration
1601 Lind Avenue SW
Renton, Washington 98055-4056

Dear Mr. Boyle:

Seattle-Tacoma International Airport contributes in many important ways to our region's economic vitality. The Port Commission also recognizes that noise from increased air traffic can have an impact on our community's quality of life and is a cause for growing concern among citizens. The Port is committed to working collaboratively with the FAA, as the agency responsible for air-traffic management, to improve the overall noise environment for the community.

As you know, the Port of Seattle is conducting an update to its Part 150 Noise and Land Use Compatibility Program. The citizens of this region identified operational procedures, specifically flight tracks, as a high priority for the Study. Wide ranges of viewpoints were expressed on the different alternatives discussed. The increased use of the Duwamish/Elliott Bay Corridor for north flow departures, however, gained overwhelming support for further analysis.

On June 27, 2000, the Port Commission unanimously adopted Resolution 3401, which, among other recommendations, requests the FAA to determine the feasibility of, and changes required for, maximum use of the Duwamish/Elliott Bay Corridor for aircraft departing to the north. With this letter we formally transmit that request.

The feasibility analysis should include an analysis of increasing the hours of the nighttime curfew on the east turn as well as a preferred outcome of having all north flow SUMMA departures relocated to the Duwamish/Elliott Bay Corridor. The Commission understands that redirecting all SUMMA departures through the Duwamish/Elliott Bay Corridor may be difficult, but we strongly encourage the FAA to pursue vigorously the feasibility of this as one option.

The Duwamish/Elliott Bay Corridor is an existing noise abatement corridor for aircraft departing to the north and heading west. This alternative would involve reallocation of aircraft in north flow from an eastbound route to the existing westbound route passing primarily over industrial areas and water. With the increasing availability of Flight Management System technology, the Duwamish/Elliott Bay procedure becomes an even more desirable way to reduce scatter of aircraft flights over Seattle-area neighborhoods.

P.O. Box 1209
Seattle, WA 98111 U.S.A.
(206) 728-3000
Fax (206) 728-3252
www.portseattle.org



On January 25, 2000, the Port of Seattle requested the FAA to evaluate the feasibility of increased use of the Duwamish/Elliott Bay Corridor for north flow departures. Your February 11, 2000, response indicated that evaluation of this alternative by FAA prior to completion of the Study might compromise the integrity of the Study and that the review of flight track alternatives would commence after completion of the Part 150 Study.

Based on FAR Part 150, Subpart C, Section 150.35 (a) determinations relating to the use of any flight procedure for noise control purposes may be issued either in connection with the determination on other portions of the program or separately. Based on this, the Port of Seattle Commission has adopted recommendations for the flight track portions of the Study separately from the remaining Part 150 Study elements. This will allow us to carry forward flight track recommendations for further analysis without the FAA's 180-day review period allotted for the Noise Compatibility Program.

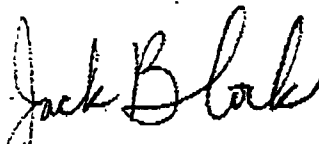
We believe that Resolution 3401 satisfies your request for a final action by the Port on the issue of flight tracks. Once the Port has a determination of feasibility from the FAA, we will complete the noise analysis of the alternative and make a decision whether to carry it forward as a recommendation for implementation.

The Port of Seattle and citizens are focused intensely on maximizing flights over non-residential areas and minimizing flights over developed residential areas. It is vitally important that the FAA, as the agency responsible for flight tracks, recognize the growing concern among citizens and respond by analyzing all technically feasible alternatives regardless of the involvement required by other air-traffic regions.

We ask the FAA to work with the Port in addressing citizen concerns about noise by conducting a thorough evaluation of maximum use of the Duwamish/Elliott Bay Corridor. We respectfully request a response, within two weeks of receipt of this request, with an estimate of when you anticipate completion of the evaluation.

Please feel free to contact my office if you have further questions.

Sincerely,



Jack Block
President, Port Commission

Enclosure

cc: Commissioners, M. R. Dinsmore, Gina Marie Lindsey

**AMENDMENTS ADOPTED BY COMMISSION AT JUNE 13 MEETING
INCORPORATED; FINAL ACTION BY COMMISSION SCHEDULED FOR
JUNE 27**

RESOLUTION NO. 3401, as Amended

A RESOLUTION of the Commission of the Port of Seattle concluding a portion of the 2000 Federal Aviation Regulation (FAR) Part 150 Study for Seattle-Tacoma International Airport regarding alternate flight track analysis: 1) requesting that the Federal Aviation Administration determine the feasibility of maximum use of the Duwamish/Elliott Bay Corridor for aircraft departing north from Seattle-Tacoma International Airport with a preference for those north-flow departures that currently turn east enroute to southerly destinations via the SUMMA departure procedure, and 2) directing Port staff to consult with Pierce County representatives concerning increased nighttime use of the Commencement Bay flight track.

WHEREAS, Seattle-Tacoma International Airport (STIA) is a critical regional economic transportation facility and the Port of Seattle Commission recognizes that responsible stewardship of this facility must include effective programs, strategies and technologies to reduce overall noise and noise impacts from STIA aircraft operations; and

WHEREAS, In 1985, the Federal Aviation Administration (FAA) approved the Seattle-Tacoma International Airport Part 150: Airport Noise Compatibility Program (STIA Part 150 Program) referred to in Resolution No. 2943, as Amended; and

WHEREAS, In 1993, the Commission adopted Resolution No. 3144, setting forth amendments to the STIA Part 150 Program following a substantial public process review and the FAA subsequently approved those amendments; and

WHEREAS, The Port currently is engaged in a similar substantial public process

review of the amended STIA Part 150 Program, scheduled to be complete in August, 2000; and

WHEREAS, In 1997, the Port formed Citizen and Technical Advisory Committees (CAC and TAC) to assist in the Part 150 Program review; and

WHEREAS, The current STIA Part 150 Program review includes study of a number of alternative operational procedures with potential for further reductions in aircraft noise from STIA to benefit residential communities; and

WHEREAS, One component under review is an analysis of the impacts of alternate aircraft departure flight tracks on the noise environment in neighboring communities; and

WHEREAS, The Port Commission and Port staff set criteria for guiding the process at the beginning of the study, which were discussed with CAC and TAC on November 18, 1997. One criterion relating to flight tracks, was that the proposed Part 150 noise mitigation program “will improve the overall noise environment and not shift noise from one residential community to another”; and

WHEREAS, During the current STIA Part 150 Program review, CAC and TAC have suggested flight track alternatives for evaluation, and have been reviewing and commenting on information produced for each alternative; and

WHEREAS, The CAC and TAC established an Operations Subcommittee (OS) that devoted several meetings and numerous hours of review to flight tracks analysis and suggested six flight track alternatives for comparison to existing conditions; and

WHEREAS, The six alternatives include 1) South Flow – Two Track, 2) South Flow – Three Track, 3) South Flow – Establish use of Commencement Bay as preferred nighttime departure procedure for aircraft, 4) North Flow – Duwamish Corridor Increase, 5) North Flow –

Flight Management System Implementation for East Turn, and 6) North Flow – Split East Turn;
and

WHEREAS, On February 9, 2000, the Operations Subcommittee voted on its recommendations for flight tracks, which recommendations were then passed on to the full CAC and TAC; and

WHEREAS, the full CAC and TAC concluded final discussions on the OS recommendations on April 16, 2000; and

WHEREAS, CAC, TAC and OS participants widely supported further analysis of increased use of the Duwamish/Elliott Bay Corridor as a way to reduce the noise impacts for those residents living underneath the east turn on north departures; and

WHEREAS, the CAC found the status quo of the existing north flow turn to be unacceptable; and

WHEREAS, FAA Air Traffic Control preliminarily screened five of the six alternatives for safety, operational feasibility and maintenance of airspace capacity; and

WHEREAS, The Port analyzed alternatives 1, 2,3,5 and 6 using a combination of computer modeling and field noise measurement metrics and contouring techniques to consider the potential to cause annoyance, sleep and speech interference, and to compare the total population affected at various noise levels; and

WHEREAS, The findings of the analysis revealed that four of the six alternatives do not meet the criterion established at the beginning of the study; and

WHEREAS, The results of these analyses are available to the public; and

WHEREAS, The Port Commission at its Regular Commission Meeting on May 9, 2000, received a briefing from Port staff and at a Special Commission Meeting and Public Hearing on May 18, 2000 heard extensive testimony from interested citizens; and

WHEREAS, information currently available from the FAA is insufficient to allow full analysis and quantification of potential benefits or impacts of increased use of the Duwamish/Elliott Bay Corridor (alternative 4).

NOW, THEREFORE, BE IT RESOLVED, by the Port of Seattle Commission as follows:

Section 1: Increased use of the Duwamish/Elliott Bay Corridor is the one alternative that could possibly achieve a net reduction of noise. It offers the greatest potential for improving the noise environment for King County residents located under the current flight tracks. This corridor is already established as a noise abatement procedure and is the preferred procedure for flights during nighttime hours when aircraft are departing to the north. Communities located on the edges of Elliott Bay, as well as communities located on the west side of Puget Sound, may potentially receive more noise with this alternative. The FAA must first determine the feasibility of this alternative before noise impacts can be assessed. The Port Commission hereby requests the FAA to determine the feasibility of maximum use of the Duwamish/Elliott Bay Corridor, including increasing the hours of the nighttime curfew on the east turn, for aircraft departing north from STIA in order to reduce the use of the existing east turn and for which the preferred outcome would be to have all north flow SUMMA departures relocated to this corridor. The Commission understands that the concept of redirecting all SUMMA departures through the Duwamish/Elliott Corridor may not be feasible, however, we strongly encourage the FAA to vigorously pursue the feasibility of this as one option.

Section 2: FAA airspace procedures established for safety and efficiency significantly constrain the Port in considering recommendations for flight track changes. Several interesting and innovative alternatives have been raised and analyzed. The resulting data, however, demonstrate that some of these alternatives would result in greater exposure to noise for a larger population due to the lower altitude for turning aircraft.

Section 3: The south flow Commencement Bay flight track is an established procedure that is used part of the time for flights departing to the south during nighttime hours. Increased use of this flight track offers the potential to reduce noise of south flow nighttime departures for many South King County residents. The Commission recognizes that some increased impact could potentially fall to Pierce County residents. Port staff shall consult with Pierce County representatives and report to the Commission

prior to forwarding to the FAA any recommendation for further consideration of this alternative.

Section 4: The Commission encourages the FAA to maximize use of flight management system technology over industrial and open water areas and discourages use of such technology over residential areas.

Section 5: Port staff shall report to the Commission once the FAA has completed its feasibility analysis of the Duwamish/Elliott Bay Corridor. It is intended that Port staff subsequently will conduct an appropriate noise analysis for this alternative and report those results to the Commission.

ADOPTED by the Port Commission of the Port of Seattle at a regular meeting held this _____ day of _____, 2000, and duly authenticated in open session by the signatures of the Commissioners voting in favor thereof and the seal of the Commission.

Port Commission



U.S. Department
of Transportation

Northwest Mountain Region
Colorado, Idaho, Montana, Oregon
Utah, Washington, Wyoming

1601 Lind Avenue S.W.
Renton, Washington 98055-4056

CB/CRM/AV
dist to all 8/17
cc: GML, GYM

Federal Aviation
Administration

AUG 11 2000

Mr. Jack Block
President, Port Commission
Port of Seattle
P.O. Box 1209
Seattle, WA 98111

Dear Mr. Block:

Thank you for your letter of July 21, 2000, regarding the Port of Seattle's Resolution 3401, resulting from the Part 150 Noise and Land Use Compatibility Program.

I will convene a group to evaluate the feasibility of the operational changes recommended in Resolution 3401. The evaluation will be based on the impact the recommendations will have to safety and efficiency of the local and national airspace systems. I anticipate the evaluation will be completed in 90 days.

Sincerely,

Daniel A. Boyle
Acting Manager, Air Traffic Division

Appendix Thirteen. Proof of Publication/Part 150 Hearing

AFFIDAVIT OF PUBLICATION

Barbara Alther, first duly sworn on oath states that he/she is the Legal Clerk of the
SOUTH COUNTY JOURNAL
600 S. Washington Avenue, Kent, Washington 98032

a daily newspaper published seven (7) times a week. Said newspaper is a legal newspaper of general publication and is now and has been for more than six months prior to the date of publication, referred to, printed and published in the English language continually as a daily newspaper in Kent, King County, Washington. The South County Journal has been approved as a legal newspaper by order of the Superior Court of the State of Washington for King County.

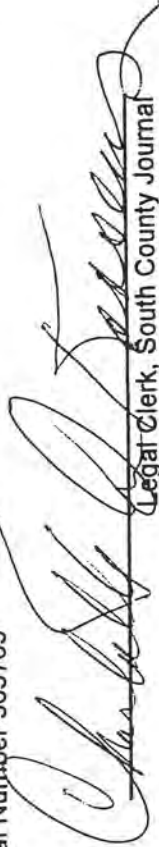
The notice in the exact form attached, was published in the South County Journal (and not in supplemental form) which was regularly distributed to the subscribers during the below stated period. The annexed notice, a

Display Ad - Open House and Public Hearing

as published on: 9/25/00

The full amount of the fee charged for said foregoing publication is the sum of \$136.00, charged to Acct. No. 8010399.

Legal Number 565765


Legal Clerk, South County Journal

Subscribed and sworn before me on this 28th day of Sept., 2000





Notary Public of the State of Washington
residing in Renton
King County, Washington

OPEN HOUSE AND PUBLIC HEARING
PART 150 NOISE AND LAND USE COMPATIBILITY STUDY UPDATE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
The public is invited to review and comment on recommendations by Port of Seattle Staff at an informational open house and public hearing to be held on
Wednesday, September 27, 2000
4:00 to 8:00 pm
Highline Performing Arts Center (next to Highline High School)
401 S. 152nd St. • Burien, WA
For directions or more information, call the Port of Seattle at (206) 248-6851 or (206) 439-7734.

Appendix Fourteen. Transcript of Part 150 Public Hearing

FEDERAL AVIATION REGULATION PART 150 STUDY

PUBLIC HEARING

Bob Barnard, Presiding

COPY

September 27, 2000

Highline Performing Arts Center
410 South 152nd
Burien, Washington

SEATTLE DEPOSITION REPORTERS

(206) 622-6661 (800) 657-1110
1300 Puget Sound Plaza
1325 Fourth Avenue
Seattle, Washington 98101
FAX (206) 622-6236

REPORTED BY: Gretchen Hubbert, CCR# HU-BB-EG-*374PA

1 BE IT REMEMBERED that at
2 4:00 p.m. on Wednesday, September 17, 2000, at the
3 Highline Performing Arts Center, 401 South 152nd,
4 Burien, Washington, before GRETCHEN A. HUBBERT,
5 CCR, Notary Public in and for the State of Washington,
6 was held a public hearing on the Federal Aviation
7 Regulation Part 150 Study Update for Seattle-Tacoma
8 International Airport.

9 WHEREUPON, the following.
10 proceedings were had, to wit:

11 <<<<<< >>>>>>

12
13
14 PUBLIC TESTIMONY

15 MR. BARNARD: You're welcome to begin.

16 MR. YOUNG: Thank you. My name is Garrett
17 Young, and I live at 14811 - 32nd Place South.
18 It's the Morning View Town Homes apartment
19 structures there. I'm a homeowner. I did read
20 all the maps up front, and it seems as if we
21 are just directly outside the area where the
22 noise is supposed to be above. Now while I see
23 that, we also know that directly outside our
24 apartment structure coming out of our homes,
25 right across the way from us, there's a single

1 family dwelling, and we understand that they
2 have been, you know, given the opportunity to
3 seal off. And it's interesting that we're
4 right across the street, and we were not
5 involved in that at all. So that's my big
6 concern, and also, if indeed, there is
7 something that's going to be done for my
8 apartment structure, and specifically, of
9 course speaking for my own.

10 MR. BARNARD: Thank you, very much.

11 MR. HANSON: I'm Clay Hanson. I reside at
12 14817 - 32nd Place South in Sea-Tac here. My
13 building -- my unit is in the same building
14 where Garrett Young resides, and his comments
15 are very similar to the ones I'm also going to
16 make. I'm quite concerned that our complex is
17 just outside the major noise impact zone there,
18 and yet we receive quite a bit of the noise.
19 And I also noted that our neighbor right
20 directly to the north of us, just right outside
21 our entrance, he has received sound proofing in
22 his windows there, and we feel that we
23 shouldn't be left out of the -- of this at all.

24 Thank you.

25 MR. BARNARD: Thank you, very much.

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Anyone else like to speak? If you would state your name and your address, please.

MS. BOYD: I'm Peggy Boyd. 14913 - 32nd Place South. I live in the Morning View Town Homes. I've lived there for 19 years, and I feel like about ten years ago or so, they told us we were going to have this insulation. And then we got taken off, and then they said, "Wait a while and you'll get put back on." So a couple years ago they said we were put back on, and now they say we're outside.

When I moved in there, I could hardly hear the airplanes. I live upstairs, and I used to be able to hear my TV. But now, with my windows closed and everything, I still have a hard time hearing without turning it way up at times. And at night, sometimes the airplanes are very loud. I feel like we really should not be discriminated against because we are nearby the airport.

MR. BARNARD: Thank you. Anyone else?

UNIDENTIFIED SPEAKER: We're all from the same place, Morning View condos.

MR. BARNARD: We appreciate that. Yes, sir. Would you step to the microphone, please.

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State your name and address, please.

MR. FOX: My name is Irving Fox, and I live at 14912 - 32nd Place South in Sea-Tac, and I'm part of the Morning View group as well. I would just like to say that I think that Port of Seattle made a serious mistake when they had one policy for single family homes and another one for condominiums. The money that supports the renovation project, I understand it comes from the head tax the people paid when they use the airport facility, and also from taxes that are charged on the tickets. But the fact is that people that live in condominiums fly airplanes just like people that live in single family homes. I think that -- I think it's just plain discrimination that up and down our street the single family homes have been retrofitted, and we have not. I think that it's almost like they were saying, "It's okay to be exposed to high noise levels if you live in condominiums, but if you live in single family home, it's not okay." So I think the Port should step up and do the right thing and retrofit the buildings like they have with other properties in the neighborhood that have

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been done.

That's all I have to say.

MR. BARNARD: All right, sir. Thank you.

MS. PALO: Okay. I'm Clara Palo. I live at 14815 - 32nd Place South. I am also in the condominium, but I want to say something. Eight years ago, the board applied for this (inaudible.) Now they say no because they change their mind or what. They say, "Oh, after a while, once we've finished the house, we start on the condominium and the apartment." The second time, they say, "Oh, we don't have money now. When we get money, we start." What happened? We are out. Morning View is out. Why is that? No. We've got to be strong. All condominium. All Morning View, we're supposed to be strong and fight for this because I'm alone upstairs. Every five minutes, I got to listen to my head -- I got to put my hand on top of my ear. My picture on the wall, all the time this way (indicating.) I've got to put it straight. That's not fair.

I hope you understand. I'm sorry I not speak very good, but I do the best. Thank you, very much.

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MR. BARNARD: You did very well. Thank you.

Would you like to speak? Since you weren't here for the ground rules, we'd like you to -- if you represent yourself -- to keep your comments to two minutes.

MS. PERRY: Oh, it could be a lot less.

MR. BARNARD: That's okay. So state your name, if you would, and your address.

MS. PERRY: My name is Ruth Perry, and I live at 14821 - 32nd Place South in the Morning View Town House. And we're right there at the landing strip for United, and the noise is very loud. I've lived there for 12 years. In the morning, I can hear the planes when they turn on, so, I mean, we're right there. So help us.

Thank you.

MR. BARNARD: Welcome. Just a couple ground rules I'd like to remind you of, if you don't mind. If you are representing yourself, we'd like you to keep your comments to around two minutes, if you don't mind. If you are representing an organization, we'd like you to hold your comments to five minutes. And really, other than stating your name and

1 address, the floor is yours.

2 MS. HIGGINS: Okay. My name is Celeste
3 Higgins, and my address is 2731 South 205th
4 Place, Sea-Tac, Washington, 98198. And I am
5 representing myself. I'm not with any other
6 parties or firms. We've got the flyer, and we
7 were interested in more information regarding
8 the DNL 70 zone, and the buyouts with the
9 mobile home parks that are listed. With the
10 eight that you have, we do fall under one of
11 those eight, and we would like to be bought
12 out, and we would like more information before
13 the whole process is completed, to have a
14 chance to speak or hear public opinion at the
15 commission meeting which will be in November.

16 I think that's about it. Thanks.

17 MR. BARNARD: Okay. Thank you, very much.

18 MR. GOLON: Hi. My name is Tom Golon,
19 G-O-L-O-N, from Bainbridge Island, and I'm very
20 thankful that you've had us here today to hear
21 the various proposals about the traffic flow
22 routes, the air traffic flow routes. I'm very
23 concerned about air traffic coming down the
24 Sound, and I've heard a lot about the
25 Duwamish/Elliott Bay route, but it hasn't been

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really clarified well in the media. My main concern is that if you take an area like the middle of the Sound, where they're proposing more flights -- and Bainbridge Island in the middle of the Sound has very little ambient noise, and there are already a certain number of flights going down the Sound -- but if we were to increase them, as in town where there's a lot more ambient noise, I think we would have a big problem. I'm familiar with this issue a little more than the typical Bainbridge Islander because I have a condo in Madison Park, and I stay there during the week. And in the condo of course, I've seen the flight paths change, coming in over Madison Park, over the Arboretum, down through Madison valley and all, and coming in over the 520 Bridge at three minute intervals or so. And that's the thing I want to make sure doesn't happen with the down Sound route. Coming straight down the middle of the south will bring a lot of traffic because it would be put into an area, as I mentioned earlier, with no ambient noise and would really be a huge change for that area.

So that's my comment today. I'm going to

1 be going to more input meetings on this subject
2 in the future, and I would also suggest that
3 these meetings perhaps could be held Downtown,
4 where most of the affected neighborhoods are
5 where the people work, and you'd get a lot more
6 input from the various communities that are
7 affected by the air traffic flow.

8 Thank you, very much.

9 MR. BARNARD: Thank you. I appreciate it.

10 MS. ARMSTRONG: I'm Babs Armstrong, and I
11 live at 15051 - 29th Avenue South in Sea-Tac.
12 And my main complaint is air pollution. We
13 have people dying of cancer all around us. It
14 has wiped out one whole family that we know.
15 My neighbor two doors down is now dying of lung
16 cancer, and they never caught it until the
17 fourth stage, which is fatal. Neighbors up the
18 street have died of cancer. And I've lived
19 there since 1963, and the fuel was not what it
20 is today. It was -- you could go out in your
21 backyard. The kids could go out in the
22 swimming pools and swim. You can't go out in
23 your backyard now unless you go out and clean
24 off all the jet fuel that's all over the tables
25 and chairs. Your dog's dish has to be emptied

1 twice a day because of the fuel that's in the
2 dish, black soot. Our houses are being covered
3 with soot. The noise -- I know by living near
4 an airport, we have to put up with noise, and
5 it would have nice to have the bulkhead or
6 whatever it's called. That would help.

7 But it's the jet fuel that's really,
8 really changing our neighborhood. So I guess
9 if something could be done? I don't know what.

10 MR. BARNARD: Okay.

11 MS. ARMSTRONG: Well, one other thing:
12 They've insulated our homes, and that's fine,
13 but they've insulated it to where, when the jet
14 fuel is blowing our way, it burns our lungs so
15 bad that we have to shut all our doors and
16 windows. And when it's 80, 90 degrees out, and
17 you have to go in your house, there's something
18 wrong, something very wrong. And now I have a
19 little six month old grandbaby that I'm
20 watching, and when I smell the fuel coming, I
21 get up and shut the doors and windows. That's
22 not right. We live in a neighborhood that's
23 destroying our health. And I like my house and
24 I like my neighborhood. And my house is paid
25 for, and I'm retired. Okay?

1 MR. BARNARD: Okay. Thank you, very much.

2 MS. ARMSTRONG: Okay. I'm back. So if
3 the Port wants to insulate our homes and make
4 it to where we have to run indoors when the jet
5 fuel is, you know, filling our neighborhood,
6 then maybe they should think about air
7 conditioning, to where we could be in our house
8 in 90-degree weather, and have -- well, I don't
9 know.

10 MR. BARNARD: Good, thanks. Okay. If you
11 just simply state your full name and address
12 for the record, and then give us your thoughts.

13 MS. FIORE: Okay. My name is Sabina
14 Fiore, and I live at 10459 Des Moines Memorial
15 Drive, Unit 505. And it's a condominium
16 complex called Sunrise Terrace, and we have
17 about -- we have 45 units. And my complaint --
18 because that's what you get to hear tonight --
19 is the fact that single family homes were
20 insulated or given priority or what have you
21 over multifamily homes. It's not so much that
22 I don't think single family homes should have
23 gotten insulation, proper noise insulation;
24 it's just that I think we should have all been
25 considered equally. I'm a single person,

1 starting out. I don't come from a wealthy
2 background. This was the only home that I
3 could afford in the only neighborhood that I
4 could afford that met with my living standards.
5 And it's very frustrating for me to see houses
6 that are all around me with the insulation, and
7 yet I can't have the same thing. So I know it
8 sounds kind of greedy or whatever after that
9 last lady -- I feel really bad for her, her
10 situation -- but also I would like us to be
11 considered as homeowners as well, not just as
12 renters. Not that a renter is bad, but they
13 have the option of moving. For me to move and
14 pick up and sell my home is not an easy option.

15 So that's all I need to say. And I know
16 there's 45 other units who agree with me.

17 MR. BARNARD: Thank you, very much. Okay.

18 MS. MCGOWAN: Hi. My name is Pat McGowan,
19 and I'm a resident here in the City of Sea-Tac,
20 and my address is 19801 - 32nd Avenue South.
21 And I am an owner in Mark 11 Condominiums.
22 There's 11 owners, and we're owner-occupied,
23 and I see on the map out there that we're not
24 included in the group of the 65 decibel range.
25 Anyway, there's a mobile home park next to us.

1 that is marked on there, and our property lines
2 are right on that line, but we're not shown.
3 So there is a mistake on the map. And because
4 we're paying the taxes of single family
5 dwellings, we feel that we should be included
6 in this and not left out for another six or
7 seven years. Or ten, because it keeps going
8 out.

9 Since I've moved there, I've learned to
10 wear ear plugs in order to be able to sleep at
11 night, and I don't like doing that. I love the
12 area. I've been in Seattle all my life, and
13 the lake is beautiful, and I would really like
14 to have some upgrades done in my home so that I
15 can have a less noisy, silent night. Thank
16 you.

17 MR. BARNARD: Thank you. We appreciate
18 it.

19 MS. STOWE: My name Gail Stowe, 14808 -
20 32nd Place South, Sea-Tac, 98166. Well, I live
21 in Morning View Town Homes, and it's a 48-unit
22 complex. About five or six years ago, I was
23 President of Morning View Town Homes, and I did
24 research on our town homes, but I was also
25 redecorating Our Lady of Lourdes parish house.

1 And we had the windows done there. They got
2 done. They're over in south (inaudible), over
3 in that little area. So I went and did a lot
4 of work on our own place, and in the interim,
5 the homes all around us were being done, and
6 they said that it would be a little bit before
7 they got to us in as much as they still had a
8 lot of private residencies to take care of.
9 Well, a little bit grew an awful lot, into a
10 very long time, and actually, I just don't see
11 any reason that these 48 units can't be moved
12 up. From what I saw out there in the lobby on
13 your maps and plats, we're not even within the
14 five-year limit, and I find that disgraceful.
15 These are beautiful town homes. We have as
16 much trouble with noise. We're losing sales to
17 good people because of the noise. And they
18 aren't cheap. You're putting us on the butcher
19 block with this situation. There's just not
20 many of us who really appreciate it at all.
21 It's almost a moral issue, but it's also a
22 business issue.

23 Thank you.

24 MR. BARNARD: Thank you, very much.

25 MS. CONE: Hello. My name is Crystal

1 Cone. My address is 28426 - 15th Avenue South
2 in Federal Way, 98003. My phone number is
3 (253) 839-1909. I'm here because I'm getting
4 to be very angry in regards to the constant --
5 and I mean constant -- airplane noise that I
6 have to live with. I have attended some of
7 these meetings before, and I have made comments
8 through e-mail, through telephone
9 conversations, and feel that I'm getting
10 nowhere. Evidently my residence is located
11 right at the edge of the zone for noise
12 abatement, and I don't, obviously, qualify
13 because I'm right at 28426, and I think their
14 perimeter is at 288th or before that, I
15 believe. And so I don't qualify.

16 I don't mind telling you that this is a
17 noise that is 24 hours a day. I have timed the
18 planes. They go over my house on an average of
19 one per minute. They fly very low. I have
20 gotten to the point where I'm deprived of
21 sleep, and I feel like I go to bed with the
22 airplane noise, and I awaken to it. And I
23 can't enjoy my yard. I can't enjoy my hot tub.
24 I can't have friends over because you can't
25 even go out in the yard and have a decent

1 conversation because the planes are
2 continuously going over. Through my sleep
3 deprivation -- and mind you, I don't sleep an
4 awful lot -- but I feel like I'm accident
5 prone. I fell down the stairs at work the
6 other day. I ride home and almost fall asleep
7 at the wheel, and the same thing happens in the
8 morning. Like I said, I go to bed with the
9 planes and I get up with the planes, and this
10 is constant. And I mean constant. It's so
11 loud, it reminds me of when I was an infant and
12 subject to World War II. It sounds like
13 bombers are going over my house. My windows
14 shake, and I can't watch TV because I can't
15 hear it because of the planes. I can't open my
16 doors and my windows. What am I to do? I just
17 feel that something needs to be done for people
18 like me who are subject to all of this noise.

19 So please help. Thank you for your time.

20 MR. BARNARD: Great. Thank you, very
21 much.

22 MR. CARTER: My name is John H. Carter,
23 and my address is 19801 - 32nd Avenue South on
24 Angle Lake, and I'm representing Mark 11
25 Association. We have six condominiums, and

1 five town homes. All units are owner occupied.
2 The map depicting the multifamily homes does
3 not include Mark 11. We've looked at the map,
4 and it doesn't include Mark 11 Townhouses and
5 Condominiums. All the houses around Mark 11
6 have been noise remedied. Prop planes fly
7 directly over Mark 11, causing a great amount
8 of noise, affecting sleep, conversation,
9 watching television and talking on the
10 telephone. We also hear the jets that come
11 over.

12 I've been coming to the open houses for a
13 number of years. It seems that the area has
14 been changed. It's now getting narrower. Our
15 bedroom is on the third floor. The decibels
16 that we hear are greater than the houses that
17 have been completed. I think you should
18 reassess the criteria and include Mark 11 in
19 this recommendation.

20 Thank you.

21 MR. BARNARD: Great. Thank you, very
22 much.

23 MS. STEVENS: My name is M. Roberta
24 Stevens. I live at 14911 - 32nd Place South,
25 Sea-Tac, Washington, 98168. It's a

1 condominium. And I'm a single woman living in
2 my home, and I am kind of distressed that none
3 of this abatement help covers condominiums, so
4 I'm hoping that they will consider that. I
5 live in the 65 DNL -- not the 70 -- and the
6 five-year projection, I'll still be in the 65
7 DNL, like, eight blocks from the north lot of
8 the employee parking, which is right over the
9 approach path. So I'm hoping for some relief
10 because every single seal on my windows has
11 been broken, and some of those windows have
12 already been replaced, so replacing them again
13 would -- I don't know what. It seems futile to
14 me to waste money because the seals will be
15 broken again in no time at all.

16 So thank you, very much.

17 MR. BARNARD: Thank you. We appreciate
18 it.

19 MR. EGAN: I'm Joseph Egan. I live at
20 14816 - 32nd Place South. This is the Morning
21 View Condominium complex, 48 units, and my
22 question is why is it being treated differently
23 from any other private homeowners? The private
24 homes are getting sound proofed, and yet we
25 have 48 individual homeowners. Even though

1 it's a condominium, they're still individual
2 homeowners, and actually, the cost of doing
3 them would be considerably less than doing 48
4 individual homes. We only have two to four
5 windows or whatever on each unit, and I'm not
6 sure, but on the flats, they only have the two
7 units out of a four-unit building to worry
8 about sound proofing in the roofing, in the
9 attic. It's just -- the main thing is it's a
10 sign of discrimination for me to see the homes
11 around us being able to get their's done and
12 yet the 48 homeowners in this group can't get
13 it done. There is some discussion about
14 whether or not there's a need of a lawyer's
15 services because of this discrimination.

16 Thank you.

17 MS. WINDSOR: My name is Karen Windsor. I
18 live at Morning View Condominiums, 14816 - 32nd
19 Place South. And I should add that I also work
20 for the Noise Remedy Department, so I'm well
21 aware of how this whole process works. And
22 until this most recent news came out, that they
23 were not addressing condominiums unless they
24 were within the 70 DNL, I didn't feel any need
25 or reason to put my two cents in actually. But

20

1 when I learned that, then, yes, I also feel
2 that it's discrimination that we've insulated
3 how many homes that are below the 70 DNL, that
4 it's discrimination if we don't also address
5 homeowners, condominium homeowners. That's
6 basically it.

7 MR. BARNARD: Okay. Clarence, the floor
8 is yours.

9 MR. ROBINSON: Hi. Good evening. My name
10 is Clarence Robinson. I'm a President of the
11 Board for Morning View Town Homes, and we're in
12 that zone. Basically, for a few years now,
13 we've been trying to find out why, for us being
14 in condos, that our windows and the other work
15 that they've been doing for the abatement
16 hasn't been done when all the houses all around
17 us have been. And we've received different
18 answers referencing why we haven't been
19 recipients of the same program as everybody
20 else. And some is because we were in condos.
21 One answer I heard was, "Well, the homeowners
22 are people who fly airplanes." And I thought,
23 "Well, we live in condos, but we fly on
24 airplanes, too." People that live in
25 apartments in the area also fly on planes, too,

1 so I think that wouldn't be something that
2 would be used as a dividing line to determine
3 who has windows, or, if so, what's (inaudible)
4 zoning, if they just happen to not fly, that
5 they would still be entitled to have their
6 windows and all the rest of the work done to
7 their homes and dwellings.

8 So basically I'm hear to speak my voice in
9 the sense that, you know, we feel it's time
10 that we have our own work done just like the
11 rest of the homeowners in the area since we are
12 in that zone. And I'm just here to see what
13 will it take for us to get this done. I think
14 we've waited long enough. We're pretty much at
15 the demanding state at this point, being that
16 now our area hasn't been dealt with at all.
17 Maybe we could kind of understand the delay,
18 but being that we look at the house that's
19 right across the street from us, and the homes
20 right around our dwelling all have been done
21 and have been done for quite awhile -- like
22 those houses I think were done at least three
23 years ago. So I'm aware -- beyond that, we've
24 been patient in waiting our turn. We're not
25 too patient anymore. I just feel that it's

1 because we're in condos, it's been
2 discrimination against us. And I hate to use
3 those words so harsh, but that seems to be the
4 true facts of the matter. And we, as
5 homeowners, want to do these 48 separate units,
6 and that's a lot of people. And everybody
7 wants to know why we haven't been next, or it
8 hasn't started, or we haven't been given a day
9 of when it's going to start.

10 So that's pretty much of what I have to
11 say at this point. We want our windows, bottom
12 line.

13 MR. BARNARD: Great. We appreciate that.
14 Great, great voice, by the way. Welcome. It's
15 a user friendly microphone.

16 MS. HERRES: I'm Lorelei Herres, and I'll
17 spell it for you. It's Lorelei, L-O-R-E-L-E-I.
18 Last name is H-E-R-R-E-S. And I'm here
19 representing the Aircraft Noise Abatement
20 Committee, and all I really want to do is turn
21 in some written comments to be included in the
22 records.

23 MR. BARNARD: Wonderful.

24 MS. HERRES: Because I suffer at these
25 things.

1 MR. BARNARD: We'll see that that gets
2 done.

3 MR. STERN: Good evening. My name is
4 Harry Stern. I live at 5127 South Hill Street
5 in the Seward Park area of Seattle. I'm
6 speaking for the group called No Split East
7 Turn. We represent the residents of Southeast
8 Seattle who would have been severely impacted
9 by the proposed split east turn, which would
10 have sent 125 low-flying jets per day over our
11 neighborhoods. Our three main comments today
12 are:

13 (1) The Port acted properly and sensibly
14 in establishing the criterion that, quote, "The
15 proposed Part 150 noise mitigation program will
16 improve the overall noise environment, not
17 shift noise from one residential community to
18 another," end quote.

19 (2) The Port staff interpreted the results
20 of the Noise Compatibility Study correctly,
21 concluding that for the split east turn, quote,
22 "analysis indicates that the actual result
23 would be an increase in noise for a large
24 number of people," end quote.

25 (3) The Port Commissioners acted

1 responsibly and with due consideration of all
2 facts and testimony when they adopted
3 Resolution 3401 by a vote of five to zero on
4 June 27th, 2000. No Split East Turn supports
5 the Commissioners' request to the FAA to study
6 the feasibility of maximizing the use of the
7 Duwamish/Elliott Bay Corridor as a way to
8 reduce the number of flights making the east
9 turn on the north flow days.

10 We would also like to register these
11 additional comments on other aspects of the
12 Part 150 Study:

13 (4) We support the Fly Quiet Program as
14 recommended by the CAC/TAC and Port staff in
15 the Recommendations Summary of September 5th,
16 2000.

17 (5) We oppose North Preferential Runway
18 Use at all times, including curfew hours.

19 (6) We disagree with Resolutions B, C, and
20 E adopted by the CAC on September 13, 2000.
21 These resolutions make incorrect assertions
22 about the Port and the Part 150 process, and
23 are you not representative of all the, quote,
24 "citizens" who have been involved in the
25 Part 150 Study.

1 Finally, No Split East Turn would like to
2 encourage all interested parties to work
3 together to find solutions to the problem of
4 airplane noise without resorting to litigation.
5 Thank you for this opportunity to express our
6 views.

7 MS. BROWN: Arlene Brown, 239 SW 189th
8 Place, Seattle, Washington, 98166. And I live
9 over kind of in the heart of Normandy Park,
10 where there was no airplane noise whatsoever in
11 the early '90's. You could stand out in your
12 yard trying to hear an airplane, and you
13 couldn't hear one no matter how hard you tried.
14 Now they're awful. We can hear jets --
15 especially with that new runway safety area as
16 they sit there on the ground -- all day long.
17 It's obvious that the flight paths have
18 changed. Also the airplanes, especially after
19 6:00 at night, fly back to back. Also the
20 single prop airplanes are flying very low, less
21 than 500 feet from the nearest obstruction, and
22 they are flying such that one will be using the
23 same exact flight path, and the other one will
24 come along two seconds later in the same flight
25 path, which should be written up as an FAA

1 safety regulation violation, but I haven't
2 submitted it. I have called the (inaudible)
3 trying to get information on the diesel
4 airplanes, but they do not send me the
5 information, so I've been unable to file an
6 official safety complaint.

7 I'd also like to comment on your brochure
8 that came out, which is very misleading. It
9 indicates that Sea-Tac is 18th. It lists No. 1
10 as New York, with three different airports.
11 But if they included all of Sea-Tac, Renton
12 Field, and Boeing Field, we exceed Chicago in
13 transit number of operations. In other words,
14 we are first or second. It is also a classic
15 of example of apples and oranges. For
16 instance, Atlanta has four different airports,
17 and most of the airports share in the noise
18 mitigation. But this only lists the noise
19 mitigation costs that one airport incurred.
20 (Inaudible) kept with the equipment. Some of
21 airports in here have enclosures for engine
22 runups, which helps mitigate noise. Some of
23 them have incredible restrictions, such as
24 Minneapolis, which says you can't do any engine
25 runups in certain locations unless you close

1 down a road in order to eliminate road traffic
2 noise. It is clearly propaganda. It is not
3 scientific. It's not valid data because it
4 does not compare similar things. It's a bunch
5 of mishmash of numbers.

6 I'd also like to complain about the very
7 short notice about this meeting. Most people
8 that I've talked to are not on this list, and
9 they just found out about it when I mentioned
10 it to them, and they were unable to change
11 their plans.

12 Thank you, very much.

13 MR. BARNARD: Thank you, very much.

14 (Hearing concluded at

15 8:03 p.m.)
16
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23
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25

1
2 IN RE: PORT OF SEATTLE PUBLIC HEARING,
3 PART 150 STUDY
4

5 A F F I D A V I T
6

7 I, Gretchen Hubbert, do hereby certify that the
8 foregoing transcript prepared under my direction is a true
9 and accurate record of the proceedings taken on
10 September 27, 2000, in Seattle, Washington.
11

12 
13

14 GRETCHEN HUBBERT

15 NOTARY PUBLIC in and for the State of Washington,
16 residing at Seattle. Commission expires 6-19-2001.

17 CCR# HU-BB-EG-*374PA
18
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21
22
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Appendix Fifteen. Written Comments from Hearing

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

I have been informed that 10 years ago we were in the area to have our windows replaced.

Now we are not in the area - but are next door neighbor is ???

This needs to be looked in to for the Morningview townhomes.

I reside at 14813 32nd Place South, Sea-Tac WA, 98168

Sheila-Martin

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

The idea that single family homes qualify for noise abatement and condominiums do not is discrimination. Houses up and down are already retrofitted for noise abatement. This amounts to discrimination pure and simple. The cost of noise abatement is partly paid for by \$3.00 head tax for all airline passengers and also taxes collected on airline tickets. This is also discrimination because people who live in condos pay the same travel taxes as single family homes owners. I believe the Port should retrofit all housing units and schools in areas where single family homes have or are being retrofitted

Respectfully

Erving G. Fox
Manager, Townhomes
14912 32 Pl. SW
Seattle WA 98168

Phone 206-243-9009

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

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Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

Excessive noise at Marymount View Tower
Home Condos - single family homes
14917 - 32 PL 50 - I feel we
are discriminated against.

Mary Tressler

14917 - 32 PL 50

Thank You

» Barnard Dunkelberg & Company Team

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comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House
September 26, 2000

Comments:

- 1) I would like to voice my support for the Port purchasing properties in the approach transitional zones as recommended by the Port staff.
- 2) I would also like to comment on the Port's recommendation that only owner ~~occupied~~ occupied multi family units be sound insulated. I have heard the very ^{se} feasible excuse that apt. Bldgs are a for profit enterprise. What about the citizens that live in those units. Why do they have less rights than the tenant which lives in the house across the street that was just insulated. This seems to be discrimination in its purest sense. I have also heard the argument that the renter could just move. Well the renter is probably living in this noisy apt. because it is cheaper and they can't afford housing else where.

Thank You

» Barnard Dunkelberg & Company Team

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Seymour.r@portseattle.org

comments

Seattle-
International Airport
Tacoma

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

To whom it may concern:

I can understand the enormous amount of effort and funding that has already been invested into the sound insulation program. I can also understand why single family houses were able to be insulated, what I would like to see happen however, would be for multiple housing, to be sound insulated as well. (owner occupied)

I live a home in the Sunrise Terrace Condominium complex located at 10459/10455/10457 Des Moines Memorial Drive. The houses that surround this property have all been insulated, ~~etc~~

From the diagrams that were presented at the open house it seems as if my address falls just outside of the 70 DNL. Please reconsider your boundary, and extend it just a bit north.

~~The~~ The planes fly directly over our complex, my walls sometimes vibrate, I cannot speak on the phone (I have to pause the conversation) each time a plane flies over head - which is quite often! Even conversation w/ people directly inside of my home are difficult.

I believe our complex is directly in the flight path because ~~the~~ when the pilots turn on their landing lights they shine right into my living room. The lights, along with the tremendous amount of noise that the engines make when they prepare to land, is very disturbing to my existence. Sometimes it is so loud, I wonder if they will crash right into my unit.

Some people might say that I shouldn't have bought my condominium. But ~~I~~ I was unable to tell that the conditions would be so bad when I was only allowed a short time to view the home before my purchase.

Other people might say I should just move, but it is not easy to do that. I am a single person, who works part time and goes to

Thank You

➤ Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
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Seattle, WA 98168
Seymour.r@portseattle.org

grow up > am a responsible citizen who pays my taxes, ~~as well~~ as well as
high prices when I travel/fly. I work hard each day to make ends
meet and it would be nice to come and study in peace w/o having the
startling noise from the engines rumbling through my home.

Thank You,

Sabina Fiore (future Architect)
10459 Des Moines Memorial Dr #505
Seattle WA 98168-1688
206.248.8424

→ I would hope to
someday design
residential housing
so that disturbances
in our quality of life
don't happen, as
they are now.

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

I WENT TO YOUR OPEN HOUSE THIS EVENING TO SEE ABOUT INSULATION & WINDOWS. WHEN AFTER SEVERAL YEARS OF BEING TOLD WE'D GET THEM IN A YEAR OR 2, I FIND WE FALL IN A FRINGE ZONE THAT IS UNDER A FIVE YEAR STUDY. I FEEL WE'VE BEEN CHASING THE ELUSIVE DANGLING CARROT FOR LONG ENOUGH.

I ~~RENTED~~ RENTED AN APARTMENT 5 YEARS AGO & WAS TOLD THEN ~~THAT~~ THAT HOMES WERE FIRST THEN APARTMENT.

I ASKED THAT QUESTION TODAY TO ONE OF YOUR REPS & HE SAID YES. WRONG. 4 YEARS AGO I LIVED AT CANYON VIEW APTS, 10229 DES MOINES WY, SEATTLE, 98168 WHEN WINDOWS & SLIDING GLASS DOORS WERE INSTALLED BY THE PORT OF SEATTLE. I THINK YOU NEED TO GET YOUR FACTS IN LINE BEFORE TELLING ME THE WRONG ANSWER.

AS A TOWNHOME OWNER & TAX PAYER (PROPERTY) IT UPSETS ME TO SEE A PRIVATE BUSINESS PERSON MAKING A LIVING OFF OF RENTERS & RECEIVING TAX MONEY BENEFITS BEFORE I DO.

THANK YOU,

WAYNE VOLT
BOARD OF DIRECTORS
MORNING VIEW TOWNHOMES
SEATTLE
14828 32ND PL. S.
SEATAC, WA. 98168

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

COMMENTS

James B. Gilchrist
7430 SE 40th Street
Mercer Island, WA 98040

September 27, 2000

Individual comments at Sea-Tac Part 150 Open House and Public Hearing:

Thank you for the opportunity to comment.

Leschi/Medina seek to "move the noise" to a new, lower flight track over residential neighborhoods. Thank you to the Port for rising above this (pun intended).

Leschi/Medina seek to move noise to new neighborhoods. Thank you to the Port for taking a regional approach.

Leschi/Medina sue the Port when the Citizens' (their citizens) "Advisory" Committee's recommendation is not completely accepted because it is divisive, self interested, provincial, not supported by the facts, and contrary to the scope and mission of the Citizens' Advisory Committee. Thank you to the Port for seeing the big picture.

Thanks to the Port for your efforts to increase the use of an established noise abatement flight track over industrial areas (Duwamish corridor) rather than creating a new, lower flight track over residential areas (Seward Park, Mercer Island, South Bellevue).

Neighbors here on Mercer Island are contacting Senator Gorton and Representative Dunn urging their support in asking the FAA to work creatively and aggressively to increase the air traffic out the Duwamish corridor.

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

The Port of Seattle made the correct decision when it decided against the Split East Run over Columbia City, Seward Park + Lakewood. Those who are now complaining about that decision - citing noise - are simply upset that they didn't get everything they wanted. They got quite a gift from the Port - but they are refusing to accept it because it wasn't exactly what they wanted.

While I sympathize with anyone who must experience airport noise, I can't support the claims of the Port's opponents in this case. They knew they had overhead flights when they moved in, for the most part. For them to now try to dump their problem on their poorer neighbors is unconscionable. Port of Seattle - stick to your guns!

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
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Seattle, WA 98168
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comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

I really think flights should be restricted for certain hours — after 11 pm and before 5 am.

Some of the loudest jets seem to fly over in the middle of the night and once it wakes you, you cannot get back to sleep.

Other airports in residential areas (Orange County, for example) have such restrictions. Sea Tac should too!

Thank You

» Barnard Dunkelberg & Company Team

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Seattle, WA 98168
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comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

M. Valerie Kerry (206) 246-7272 home
14404 8th South
Bucien WA 98168 (253) 657-1304 work

According to your map, I am just outside the transition area. I am on 8th So. & the runway will be on 12th. I am on top of the hill & be very vulnerable for airplanes to crash into my home, especially small planes.

I have lived there since 1956 and have seen the airport expand 3 times.

I have a 1/2 acre of land and small house with a beautiful view of Mt Rainier & Cascades. To find a place with this view, it would cost me close to \$300,000 for the land only.

I would like to know if you have in your plans to buy out the residential homes in this area, if yes, when?

I would consider being bought out if the Port would purchase land with the same view & build me an equivalent size home.

I am at retirement age & can not afford to purchase land at \$300,000 to replace my home.

What is the Port's "fair market value" for residential land that they rezone for commercial use?

Please write or phone me

Thanks

M. Valerie Kerry

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

I was unable to stay for the meeting. I want it noted that I feel the boundaries for the third runway zone that will extend to 140th : 8th Ave S. will just miss our house. We live on 137th and 10th Ave South.

I feel you should expand the boundaries to 136th : 8th Ave South. There will be a small cul de sac ours - and some houses in the neighborhood left. It leaves us in a little pocket of a "ghost" neighborhood.

Not to mention the noise will be ten times worse. Please reconsider the "zone."

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

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Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

Sept, 27, 2000

I live and work in the area near Seatac Airport. The maps and information displayed at the open house tonight are useful and informative as to what the port is planning. You may have access to this information daily at will. I do not. Reasonable copies of these maps and information should be available to the public at these meetings.

I do not favor expansion of Seatac airport, either in larger terminal facilities or more runways. ~~Instead~~ I am of the conviction that the traveling public would be far better served by investing the funds in another airport, or airports for servicing air travelers to & from western Washington. To continue to concentrate on making Seatac bigger and bigger forces it into a diseconomy of scale in many ways - which cannot be compensated for no matter what infrastructure you try to build. Making Seatac airport bigger merely serves to allow the port of Seattle to grow its bureaucracy without useful results to the traveling public.

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House
September 26, 2000

Comments:

-move the airport. 1970 no 3rd runway. Government didn't listen then. We have King County airport noise didn't happen till 1997- & still happening. Seattle was also taking place. A take off (after the other) & it was loud. Closed our windows & window & doors. Summer open our house up & the noise is there. Outside working and it's still loud.

Senator Torcelli has sent letters to me. Last one in July. He said that the noise should not be spread around. Don't let the noise be spread around.

Sickness is bad for children and dr. We have a lot of ~~dr. citizens~~ dr. citizens in our area. School also Campbell Hill School in our area where planes go over. Seattle or King County.

2 yrs) will need another airport & who will want that in their backyard.

I hate noise

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

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P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

I was told that the Wet lands have to be moved. I am wondering how the animal life will be treated to the new areas. The air pollution on people does not seem to matter but do not disturb the insect life.

I am not convinced that the third runway will increase our economic activity except to impose new taxes for the ~~transportation~~ tax and spend government.

RSB

Thank You

» Barnard Dunkelberg & Company Team

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Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House
September 26, 2000

Comments:

① WE LIVE ON THE CORNER of 15th & 29th ave S. NOT ONLY ARE THE AIRPLANE FUMES unbearable but since the cargo lines have been moved to the N.E. corner the vibrations are unreasonable. More insulation will not correct this problem.

② We would also like to know how your plans connect with the SeaTac City plan to rezone our area to "High density commercial/residential".

③ What considerations are being made regarding buy outs when the Post Office is moved over to 24th ave S?

④ We definitely would like to be bought out at fair market value prices at any given time. We feel that it is unfair that the people south of us on 15th ave have custom insulation and are offered Airport assistance if they can't sell their property.

Thank you,

Douglas + Curia D. Vinyard
15059 29th Ave S.
Seattle, WA 98188

206-244-6396

cvinyard@iopencr.net

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House
September 26, 2000

Comments:

Since I am constantly subjected to the airplane noise going over my home, I strongly urge that the homes in my area are included in the noise abatement studies.

I am currently suffering from sleep deprivation due to the chronic noise I am exposed to. I fear for my safety and that of others, since I am not functioning at 100%. As you are aware, sleep deprivation is a big factor in causing accidents not only to one self but others as well.

I strongly disagree ^{with} the recommendations your staff has prepared. You must reconsider and include those areas that are located outside your noise abatement territory.

I am self supporting and cannot relocate. My home has depreciated due to the continuous noise (in both directions). I can not wait until 2004 ~~as~~ until you decide to ~~not~~ study my area. I'm a mental and physical wreck.

To resolve this issue I would suggest the following resolution: (1) you purchase my home and relocate me in a quiet neighborhood or (2) insulate my home in which I have resided for > 30 years (3) direct air traffic so that others share the continuous noise as I have been doing.

The situation is getting worse not better. What will happen when the 3rd runway is ready for use?

Thank you -
Christel Cox
2842615th Ave. So
Federal Way, WA 98003

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House
September 26, 2000

Comments:

I WANT MY INSULATION PKG, JET NOISE & OPERATING
HOURS HAVE INCREASED. I WAKE UP TO A 1AM OR
4AM TAKE OFF. THE IMPLEMENTATION OF THE
3RD RUNWAY WILL DEFINATELY PUT US IN
THE RUNNING FOR INSULATION BUT I FEEL THE
TIME IS NOW.

PLANES TRYING TO STAY WITHIN THE CONFINES OF
THE DUNSMUIR CORRIDOR TAKE OFF & LANDING
TEND TO MOVE WEST TOWARDS OUR HOUSE,

PLEASE LET ME KNOW WHEN TO EXPECT
THE NEW WINDOWS -

Bob Russell
10241 10TH STREET
SEATTLE 98168

206 - 762 - 6312

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

THE NOISE CONTOUR MAP MODELS:

- 1998 NOISE CONTOURS WITH NOISE REMEDY BOUNDARY
- 2004 FUTURE NOISE EXPOSURE MAP WITH NOISE REMEDY BOUNDARY

DO NOT SHOW THE IMPACT OF EASTBOUND AIRCRAFT AS THEY PASS OVER NORMANDY PARK IN THE AREA BETWEEN NORMANDY ROAD AND 120TH STREET, AND THE SHORELINE - 121 AV S.

WITHOUT THIS NOISE INFORMATION, THE MODELS ARE NOT ACCURATE.

THE SUMMARY OF STAFF RECOMMENDATIONS DOES NOT ADDRESS THE ISSUE OF LOW-LEVEL OVERFLIGHTS IN THIS (NORMANDY PARK) AREA.

WHEN I ASKED ABOUT NOISE RECORDING STATIONS IN THIS (NORMANDY PARK) AREA I WAS TOLD THAT NONE HAD BEEN PLACED IN THIS AREA. WITHOUT THIS INFORMATION, THE STAFF RECOMMENDATIONS CANNOT BE CONSIDERED COMPLETE.

PAT HEYO
18634 5TH PL SW
SEATTLE WA 98166
206 660 3882

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

I Want My Insulation Package.

Jet noise has increased as has operating hours at night. Plane are flying west of 14th Ave. so. Regularly. Right over my house.

WHITE
10247 10th AVE. SO
98168

Thank You

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

comments

Seattle-
Tacoma

International Airport

FAR Part 150 Study Update

Open House

September 26, 2000

Comments:

I live just outside your eastern boundary for the port PKs. I have a lot of airplane noise when the planes take off from the North end. The noise is even worse since you put in the North Cargo area parking. Those planes start up at 4 AM! I understand that my level of noise is not what the computer model says is excessive, but when you are sleeping it is excessive. Why don't you re-evaluate the zone of noise impact? I can see the planes parked from my driveway and I am outside the insulation zone! Please consider partial insulation of bedrooms only. The noise is bearable during the day, but not at night. Please also put up a sound barrier around the north cargo parking area soon! Our health depends on it.

Thank you.

T h a n k Y o u

» Barnard Dunkelberg & Company Team

Mail Comments to:

Ron Seymour
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
Seymour.r@portseattle.org

Appendix Sixteen. Responses to Comments

SEA-TAC FAR PART 150 STUDY
Summary of Public Hearing Written Comments Received
Open House/Public Hearing
September 27, 2000

There were twenty-one written comments received either during the Open House/Public Hearing or subsequent to the Open House/Public Hearing. These written comments are categorized and summarized below. The majority of the comments were unsigned.

The written comments are categorized in the following manner; six comments requested that owner-occupied multi-family units within the 65 DNL contour be insulated along with those in the 70 DNL contour, two comments praised the Port Commissioners for making the correct decision concerning the split east turn, one comment requested restricting flights during the nighttime hours, two comments requested expansion of the Approach Transition Zones to include them as they wanted to be purchased, three comments had to do with the third runway and airport expansion, and six comments either wanted to be purchased or receive sound insulation as they are not within the Noise Remedy Boundary.

Comment Concerning Owner-Occupied Units: Concerned about overall owner-occupied units outside of the 70 DNL noise contour. Believes they should be insulated.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Praising Port: Comments made praising Port for making the correct decision concerning the split east turn.

Response: Thank you for comments.

Comment on Restrictions: Comment requested restriction of flights during nighttime hours due to noise.

Response: Seattle-Tacoma International Airport is a public use airport supported by public funds. As such, Sea-Tac must remain open at all times for users that desire to operate there so that interstate and intrastate commerce is not hampered. Prior to 1990, several airports in the U.S. adopted restrictions on the use of their airports. However, in 1990 Congress passed legislation that prevents airports from implementing such restrictions without preparing additional studies and analysis. Several of these studies have been attempted by other airports, however, none have been approved to date by the FAA. Therefore, the implementation of such a restriction is not a viable option to pursue.

Comment on Approach Transition Zone: Comments regarding expansion of the Approach Transition Zone.

Response: The exact boundaries of the Approach Transition Zones have not been determined yet. However, they most likely will be based on physical attributes such as streets in an attempt to make identification of such boundaries easier to identify.

Comment on Third Runway: Comments against the third runway and expansion of the airport in general.

Response: The FAR Part 150 Study does not address the third runway or airport expansion as the implementation timeframe for this study is five years and the third runway is not scheduled to open until 2006.

Comment on Sound Insulation or Purchase: Several comments regarding accuracy of the noise contours and that it is discriminatory to not insulate or purchase homes that receive significant aircraft noise.

Response: Staff's recommendation is to not expand the single-family home sound insulation program for this Part 150 Study Update. The recommendation is that the Port focus efforts for the next five to seven years on those land uses that have not been previously addressed in the higher noise level contours. These land uses include owner occupied multi-family housing and mobile home parks. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

SEA-TAC FAR PART 150 STUDY
Summary of Public Hearing Comments
Open House/Public Hearing
September 27, 2000

There were twenty individuals who presented verbal comments to the Court Reporter at the Open House/Public Hearing. Responses to the comments are presented below. They are arranged by comment made, the page number in the Transcript where the comment can be found, and the name of the person making the comment.

Comment One, Mr. Young, page 2 of transcript, 14811 32nd Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Two, Mr. Hanson, page 3 of transcript, 14817 32 Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Three, Ms. Boyd, page 4 of transcript, 14913 32nd Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Four, Mr. Fox, page 5 of transcript, 14912 32nd Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Five, Ms. Palo, page 6 of transcript, 14815 32nd Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Six, Ms. Perry, page 7 of transcript, 14821 32nd Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Seven, Ms. Higgins, page 8 of transcript, 2731 South 205th Place.

Comment: Lives in one of the Mobile Home parks recommended for purchase. Would like more information and would like to speak to the Commissioners concerning the purchase.

Response: Staff's recommendation is to purchase those mobile home parks located within the 1998 70 DNL noise contour and to relocate the residents of those parks. All recommendations must still be approved by the Port of Seattle Commission, then the Federal Aviation Administration (FAA). Once approval has been received from the Commission and the FAA, specific guidelines and procedures will be developed and implemented. All such acquisitions using Federal funds will follow the Uniform Relocation and Real Properties Acquisition Policy Act that will assure residents of fair acquisition and relocation assistance. The Port Commissioners will take public testimony on all Staff recommendations during Commission meetings addressing the Part 150 Study Update.

Comment Eight, Mr. Golon, page 8 of transcript, Bainbridge Island.

Comment: Is concerned about the Duwamish/Elliott Bay route and how it would impact Bainbridge Island. Would like to be involved and recommends several meetings concerning the issue.

Response: The Port Commission has not made a decision on the use of the Duwamish/Elliott Bay route, as they are waiting additional information from the Federal Aviation Administration.

Comment Nine, Ms. Armstrong, page 10 of transcript, 15051 29th Avenue South.

Comment: Concerned about fuel, fumes and air pollution.

Response: This is a noise and land use compatibility study. Air pollution concerns were addressed in the Environmental Impact Statement for the proposed third runway. Air pollution is not addressed in a Part 150 Study.

Comment Ten, Ms. Fiore, page 12 of transcript, 10459 Des Moines Memorial Drive, Sunrise Terrace Condominium.

Comment: Would like to have the Sunrise Terrace sound attenuated. Thinks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Eleven, Ms. McGowan, page 13 of transcript, 19801 32nd Avenue South, Mark 11 Condominiums.

Comment: The Mark 11 Condominiums are not shown on the map. Should be sound attenuated.

Response: The Mark 11 Condominiums were inadvertently left off the map and this has been corrected. Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Twelve, Ms. Stowe, page 14 of transcript, 14808 32nd Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thanks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Thirteen, Ms. Cone, page 15 of transcript, 28416 15th Avenue South, Federal Way.

Comment: Lives right on the edge of the sound attenuation boundary and feels that her home deserves to be sound attenuated, she receives substantial amount of noise and deserves to be insulated.

Response: Staff's recommendation is to not expand the single-family home sound insulation program for this Part 150 Study Update. The recommendation is that the Port focus efforts for the next five to seven years on those land uses that have not been previously addressed in the higher noise level contours. These land uses include owner occupied multi-family housing and mobile home parks. Those land uses not

addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Fourteen, Mr. Carter, page 17 of transcript, 19801 32nd Avenue South, Mark 11 Condominiums.

Comment: The Mark 11 Condominiums are not shown on the map. Should be sound attenuated.

Response: The Mark 11 Condominiums were inadvertently left off the map and this has been corrected. Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Fifteen, Ms. Stevens, page 18 of transcript, 14911 32nd Place South.

Comment: Would like to have her condominium sound attenuated. Thinks that they should receive sound attenuation, although she is in the 65 and not the 70 DNL noise contour.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Sixteen, Mr. Egan, page 19 of transcript, 14816 32nd Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Seventeen, Ms. Windsor, page 20 of transcript, 14808 32nd Place South, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation, sound attenuation should extend out to the 65 DNL contour.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Eighteen, Mr. Robinson, page 21 of transcript, Board President, Morning View Town Homes.

Comment: Would like to have the Morning View Town Homes sound attenuated. Thinks that they should receive sound attenuation. Have been living with excessive noise for many years, have been promised attenuation, and should be attenuated.

Response: Staff's recommendation is to sound attenuate owner-occupied multi-family structures within the 1998 70 DNL noise contour. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Comment Nineteen, Ms. Herres, page 23 of transcript.

Comment: Presented Written Comments.

Response: Comments would be accepted.

Comment Twenty, Mr. Stern, page 24 of transcript, 5127 South Hill Street.

Comment: Against the Split Turn. Three major comments; agrees that the Port acted properly in establishing the Part 150 criteria, that the Staff interpreted the results properly and that the Port Commissioners acted properly. He had three other concerns; support the Fly Quiet Program, opposes the North Preferential Runway at all times and disagrees with Resolutions B, C and E adopted by the CAC on September 13, 2000.

Response: Comments received, no response necessary.

Comment Twenty-one, Ms. Brown, page 26 of transcript, 239 Southwest 189 Place.

Comment: Concerned about overall noise levels, accuracy of the newsletter concerning the amount of money spent for noise projects at other airports and complained about short notice of the meeting.

Response: Thank you for comments concerning noise levels. The Recommendations contained in this Study are intended to help reduce or mitigate aircraft noise levels. The information contained in the newsletter was obtained from the individual airports themselves. The notice given was contained in the newspapers, the newsletter and in specific mailings.

SEA-TAC FAR PART 150 STUDY
Summary of Public Hearing Written Comments Received
Open House/Public Hearing
September 27, 2000

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Comment Praising Port: Comments made praising Port for making the correct decision concerning the split east turn.

Response: Thank you for comments.

Comment on Restrictions: Comment requested restriction of flights during nighttime hours due to noise.

Response: Seattle-Tacoma International Airport is a public use airport supported by public funds. As such, Sea-Tac must remain open at all times for users that desire to operate there so that interstate and intrastate commerce is not hampered. Prior to 1990, several airports in the U.S. adopted restrictions on the use of their airports. However, in 1990 Congress passed legislation that prevents airports from implementing such restrictions without preparing additional studies and analysis. Several of these studies have been attempted by other airports, however, none have been approved to date by the FAA. Therefore, the implementation of such a restriction is not a viable option to pursue.

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Response: The exact boundaries of the Approach Transition Zones have not been determined yet. However, they most likely will be based on physical attributes such as streets in an attempt to make identification of such boundaries easier to identify.

Comment on Third Runway: Comments against the third runway and expansion of the airport in general.

Response: The FAR Part 150 Study does not address the third runway or airport expansion as the implementation timeframe for this study is five years and the third runway is not scheduled to open until 2006.

Comment on Sound Insulation or Purchase: Several comments regarding accuracy of the noise contours and that it is discriminatory to not insulate or purchase homes that receive significant aircraft noise.

Response: Staff's recommendation is to not expand the single-family home sound insulation program for this Part 150 Study Update. The recommendation is that the Port focus efforts for the next five to seven years on those land uses that have not been previously addressed in the higher noise level contours. These land uses include owner occupied multi-family housing and mobile home parks. Those land uses not addressed in this Part 150 Study Update, will be evaluated during the next update to the study, anticipated to take place in five to seven years.

Appendix Seventeen. Port Resolution Adopting Part 150 Study

RESOLUTION NO. 3401, as Amended

A RESOLUTION of the Commission of the Port of Seattle concluding a portion of the 2000 Federal Aviation Regulation (FAR) Part 150 Study for Seattle-Tacoma International Airport regarding alternate flight track analysis: 1) requesting that the Federal Aviation Administration determine the feasibility of and changes required for maximum use of the Duwamish/Elliott Bay Corridor for aircraft departing north from Seattle-Tacoma International Airport with a preference for those north-flow departures that currently turn east enroute to southerly destinations via the SUMMA departure procedure, and 2) directing Port staff to consult with Pierce County representatives concerning increased nighttime use of the Commencement Bay flight track.

WHEREAS, Seattle-Tacoma International Airport (STIA) is a critical regional economic transportation facility and the Port of Seattle Commission recognizes that responsible stewardship of this facility must include effective programs, strategies and technologies to reduce overall noise and noise impacts from STIA aircraft operations; and

WHEREAS, In 1985, the Federal Aviation Administration (FAA) approved the Seattle-Tacoma International Airport Part 150: Airport Noise Compatibility Program (STIA Part 150 Program) referred to in Resolution No. 2943, as Amended; and

WHEREAS, In 1993, the Commission adopted Resolution No. 3144, setting forth amendments to the STIA Part 150 Program following a substantial public process review and the FAA subsequently approved those amendments; and

WHEREAS, The Port currently is engaged in a similar substantial public process review of the amended STIA Part 150 Program, scheduled to be complete in August, 2000; and

WHEREAS, In 1997, the Port formed Citizen and Technical Advisory Committees (CAC and TAC) to assist in the Part 150 Program review; and

WHEREAS, The current STIA Part 150 Program review includes study of a number of alternative operational procedures with potential for further reductions in aircraft noise from STIA to benefit residential communities; and

WHEREAS, One component under review is an analysis of the impacts of alternate aircraft departure flight tracks on the noise environment in neighboring communities; and

WHEREAS, The Port Commission and Port staff set criteria for guiding the process at the beginning of the study, which were discussed with CAC and TAC on November 18, 1997. One criterion relating to flight tracks, was that the proposed Part 150 noise mitigation program "will improve the overall noise environment and not shift noise from one residential community to another"; and

WHEREAS, During the current STIA Part 150 Program review, CAC and TAC have suggested flight track alternatives for evaluation, and have been reviewing and commenting on information produced for each alternative; and

WHEREAS, The CAC and TAC established an Operations Subcommittee (OS) that devoted several meetings and numerous hours of review to flight tracks analysis and suggested six flight track alternatives for comparison to existing conditions; and

WHEREAS, The six alternatives include 1) South Flow – Two Track, 2) South Flow – Three Track, 3) South Flow – Establish use of Commencement Bay as preferred nighttime departure procedure for aircraft, 4) North Flow – Duwamish Corridor Increase, 5) North Flow – Flight Management System Implementation for East Turn, and 6) North Flow – Split East Turn; and

WHEREAS, On February 9, 2000, the Operations Subcommittee voted on its recommendations for flight tracks, which recommendations were then passed on to the full CAC and TAC; and

WHEREAS, the full CAC and TAC concluded final discussions on the OS recommendations on April 16, 2000; and

WHEREAS, CAC, TAC and OS participants widely supported further analysis of increased use of the Duwamish/Elliott Bay Corridor as a way to reduce the noise impacts for those residents living underneath the east turn on north departures; and

WHEREAS, the CAC found the status quo of the existing north flow turn to be unacceptable; and

WHEREAS, FAA Air Traffic Control preliminarily screened five of the six alternatives for safety, operational feasibility and maintenance of airspace capacity; and

WHEREAS, The Port analyzed alternatives 1, 2,3,5 and 6 using a combination of computer modeling and field noise measurement metrics and contouring techniques to consider the potential to cause annoyance, sleep and speech interference, and to compare the total population affected at various noise levels; and

WHEREAS, The findings of the analysis revealed that four of the six alternatives do not meet the criterion established at the beginning of the study; and

WHEREAS, The results of these analyses are available to the public; and

WHEREAS, The Port Commission at its Regular Commission Meeting on May 9, 2000, received a briefing from Port staff and at a Special Commission Meeting and Public Hearing on May 18, 2000 heard extensive testimony from interested citizens; and

WHEREAS, information currently available from the FAA is insufficient to allow full analysis and quantification of potential benefits or impacts of increased use of the Duwamish/Elliott Bay Corridor (alternative 4).

NOW, THEREFORE, BE IT RESOLVED, by the Port of Seattle Commission as follows:

Section 1: Increased use of the Duwamish/Elliott Bay Corridor is the one alternative that could possibly achieve a net reduction of noise. It offers the greatest potential for improving the noise environment for King County residents located under the current flight tracks. This corridor is already established as a noise abatement procedure and is the preferred procedure for flights during nighttime hours when aircraft are departing to the north. Communities located on the edges of Elliott Bay, as well as communities located on the west side of Puget Sound, may potentially receive more noise with this alternative. The FAA must first determine the feasibility of this alternative before noise impacts can be assessed. The Port Commission hereby requests the FAA to determine the feasibility of and changes required for maximum use of the Duwamish/Elliott Bay Corridor, including increasing the hours of the nighttime curfew on the east turn, for aircraft departing north from STIA in order to reduce the use of the existing east turn and for which the preferred outcome would be to have all north flow SUMMA departures relocated to this corridor. The Commission understands that the concept of redirecting all SUMMA departures through the Duwamish/Elliott Corridor may not be feasible, however, we strongly encourage the FAA to vigorously pursue the feasibility of this as one option.

Section 2: FAA airspace procedures established for safety and efficiency significantly constrain the Port in considering recommendations for flight track changes. Several interesting and innovative alternatives have been raised and analyzed. The resulting data, however, demonstrate that some of these alternatives would result in greater exposure to noise for a larger population due to the lower altitude for turning aircraft.

The Commission understands the desire of citizens to maximize flights over non-residential areas and minimize flights over developed residential areas. It is important that the FAA, as the agency responsible for flight tracks, understands and addresses this growing concern. It is the understanding of the Commission that the FAA is currently undertaking an internal process to review the processing of air traffic to increase the safety and efficiency of the air traffic control system. The Commission strongly encourages the

FAA to recognize the concerns of the citizens on flight tracks and to seize this opportunity to address those concerns, guided by the criterion that options should improve the overall noise environment and not merely shift noise from one community to another.

Section 3: The south flow Commencement Bay flight track is an established procedure that is used part of the time for flights departing to the south during nighttime hours. Increased use of this flight track offers the potential to reduce noise of south flow nighttime departures for many South King County residents. The Commission recognizes that some increased impact could potentially fall to Pierce County residents. Port staff shall consult with Pierce County representatives and report to the Commission prior to forwarding to the FAA any recommendation for further consideration of this alternative.

Section 4: The Commission encourages the FAA to maximize use of flight management system technology over industrial and open water areas and discourages use of such technology over residential areas.

Section 5: Port staff shall report to the Commission once the FAA has completed its feasibility analysis of the Duwamish/Elliott Bay Corridor. It is intended that Port staff subsequently will conduct an appropriate noise analysis for this alternative and report those results to the Commission.

ADOPTED by the Port Commission of the Port of Seattle at a regular meeting held this 27th day of June, 2000, and duly authenticated in open session by the signatures of the Commissioners voting in favor thereof and the seal of the Commission.

JACK BLOCK

PAIGE MILLER

BOB EDWARDS

CLARE NORDQUIST

PATRICIA DAVIS

Port Commission

RESOLUTION NO. 3443

A RESOLUTION of the Port Commission of the Port of Seattle, concluding the 2000 Federal Aviation Regulation (FAR) Part 150 Study for Seattle-Tacoma International Airport by updating and adding operational and land use elements to the Airport's existing Part 150 Noise Compatibility Program.

WHEREAS, Seattle-Tacoma International Airport ("Airport") is a critical regional economic transportation facility and the Port of Seattle Commission recognizes that responsible stewardship of this facility must include effective programs, strategies and technologies to reduce overall noise and noise impacts from Airport aircraft operations; and

WHEREAS, in 1985, the Federal Aviation Administration ("FAA") approved the Airport's Part 150 Airport Noise Compatibility Program ("Part 150 Program") established by Resolution No. 2943, as amended; and

WHEREAS, in 1993, the Commission adopted Resolution No. 3144, setting forth amendments to the Part 150 Program following a substantial public process review and the FAA subsequently approved those amendments; and

WHEREAS, the Port engaged in a similar substantial public process review of the amended Part 150 Program, culminating with this document; and

WHEREAS, in 1997, the Port formed Citizen and Technical Advisory Committees (CAC and TAC) to assist in the Part 150 Program review; and

WHEREAS, citizens of the region were given opportunities to express their concerns regarding noise impacts from operations at the Airport throughout the Part 150 process; and

WHEREAS, the Part 150 Program included review and analysis of operational alternatives suggested by the CAC and TAC, as well as the general public; and

WHEREAS, the Part 150 Program included review and analysis of land use alternatives suggested by the CAC and TAC, as well as the general public; and

WHEREAS, the CAC and TAC established an Operations Subcommittee that devoted numerous meetings and hours of review to operational alternatives review; and

WHEREAS, the CAC and TAC established a Land Use Subcommittee that devoted numerous meetings and hours of review to land use alternatives review; and

WHEREAS, On April 12, 2000, and May 10, 2000, the Operations Subcommittee voted on its recommendations for operational alternatives, which recommendations were then passed on to the full CAC and TAC; and

WHEREAS, On April 13, 2000, and May 11, 2000, the Land Use Subcommittee voted on its recommendations for land use alternatives, which recommendations were then passed on to the full CAC and TAC; and

WHEREAS, the full CAC and TAC concluded final discussions on the Operations Subcommittee and Land Use Subcommittee recommendations on April 26, 2000, and May 24, 2000; and

WHEREAS, CAC and TAC members widely supported alternatives that reduced noise at the source, addressed the most impacted land uses first, and focused efforts on places people spend the greatest amount of time, their residences; and

WHEREAS, the results of all analyses are available to the public; and

WHEREAS, A public hearing on Port Staff's recommendations was held on September 27, 2000, where public testimony was received from interested citizens; and

WHEREAS, The Port Commission at its Regular Commission Meeting on November 14, 2000, received a briefing from Port staff on their recommendations.

NOW, THEREFORE, BE IT RESOLVED, by the Port of Seattle Commission as follows:

Section 1: The Part 150 Program is hereby amended to include the Operational and Land Use Alternatives set forth herein. Port staff is directed to submit the amendments to the FAA for review and approval and, upon FAA approval, to expeditiously implement the directives in this Resolution, subject to all required Port Commission approvals.

Section 2: Operational Alternatives:

(a) **Flight Track:** Resolution No. 3401, addressing the flight track portion of the Part 150 Study shall be incorporated in the final Part 150 document to be submitted to the FAA for approval.

(b) **Engine Maintenance Run-up Regulations:** To provide a balance between the public's concern with the impacts associated with engine run-ups and the flexibility airlines require when conducting regular maintenance repairs on aircraft, and to reduce the number of run-ups between the hours of 10:00 p.m. and 7:00 a.m., the following elements shall be incorporated into the Airport's Rules and Regulations for Starting and/or Running of Aircraft

Engines: (i) allow run-ups, as needed, between 10:00 p.m. and 12:00 a.m., between 6:00 a.m. and 7:00 a.m., and on weekends from 6:00 a.m. to 9:00 a.m., if scheduled departure time is within 2 ½ hours of run-up and if departure cannot be accomplished without the run-up; (ii) prohibit run-ups between 12:00 a.m. and 6:00 a.m.; (iii) increase the fines for run-up violations to \$1,000 for the first occurrence, doubling thereafter, per occurrence, to a maximum of \$8,000 per occurrence in a calendar year; and (iv) include run-up monitoring in a Fly Quiet Program.

(c) Ground Run-up Enclosure ("GRE"): A GRE may offer the potential for significant reductions in noise impacts from aircraft engine maintenance run-ups to the local communities. The Port shall conduct a siting/feasibility study to determine exact location and orientation of a GRE at the Airport, determine the percentage of use anticipated by individual aircraft type and determine the impacts of the atmospheric conditions of the Pacific Northwest on the noise reduction anticipated from a GRE. The siting/feasibility study shall be completed by September 30, 2001.

(d) Noise Barriers: Noise barriers can provide a reduction in noise impacts to local communities. Construction of noise barriers in those areas on the airfield where cargo aircraft or aircraft maintenance operations occur, primarily in the north end of the airfield, may be an effective noise reduction tool. A site study of a noise wall shall be included in the environmental review process for the North End Development Program. The study shall consider the total space needs for development and a specific design to ensure a noise wall would provide maximum noise reduction to adjacent residences, without restricting the movement of aircraft. Future cargo area design and development shall incorporate noise barriers where feasible and necessary.

(e) Preferential Runway Use (North vs. South Flow): Port staff shall request FAA to implement a nighttime preferential runway use program for aircraft assigned to Flight Management System ("FMS") technology. Under the program, Air Traffic Control (ATC) would direct departures to the north through Elliott Bay during late night hours, weather conditions permitting. Port will request ATC to implement only if FMS procedures are used. The decision to implement preferential north flow departures would be solely at the discretion of ATC.

(f) Compliance with Noise Abatement Corridors: Port staff shall request the FAA to develop, implement and utilize FMS procedures for all departures using the Duwamish/Elliott Bay Corridor. Port staff shall also work with the FAA to determine a procedure for FMS assignment to all aircraft equipped with such technology and departing through the Duwamish/Elliott Bay Corridor.

(g) Ground Equipment: The Port shall continue with phased installation of 400 hertz power and conditioned air in existing and newly constructed gates. The Port shall require all airlines to use these sources of power, as it becomes available.

(h) Minimize Late Night Flights: Port staff shall work with the airlines on voluntarily limiting the operations of aircraft meeting Federal Aviation Regulation (FAR) Part 36 Stage 2 noise levels and weighing less than 75,000 lbs. from 10:00 p.m. to 7:00 a.m.

(i) Raise Glide Slope of Angle of Intercept: Port staff shall request from ATC that it consider raising the altitude that aircraft intercept the glide slope as long as safety, efficiency and capacity are not diminished.

(j) South Flow Elliott Bay Arrival Procedure Using Global Positioning System/FMS: Port staff shall work with the FAA and airlines to develop an approach through Elliott Bay that can be used during more inclement weather conditions, compared to the existing Visual Flight Rules (VFR) procedure. Such a procedure should be implemented first as a nighttime procedure for south flow arrivals. Action on this item is dependent on further development of technology.

(k) Coastal Arrivals in Propeller Aircraft: Port staff shall work with the FAA to keep aircraft over Puget Sound as much as possible without sacrificing small aircraft altitudes.

(l) Fly - Quiet Program: Port staff shall create a committee tasked with development of a Fly - Quiet Program encouraging airlines and pilots to operate aircraft as quietly as possible. The committee and program structure, including reporting mechanisms on the individual program elements, shall be presented to the Port Commission for approval prior to implementation.

Section 3: Land Use Alternatives:

(a) Noise Contours: The Port shall retain the 1998 65 DNL noise contour as the basis for the Port Noise Compatibility Program and all related programs.

(b) Approach Transition Zone ("ATZ"): Port staff shall prepare a plan for the acquisition of residential properties within the ATZ, both north and south, in order to alleviate the compounding effects of noise and low altitude of arriving aircraft over the properties. To avoid leaving parcel remnants, the acquisition plan shall integrate physical determinants (such as streets, highways, etc.) when identifying acquisition boundaries. Port staff shall work with the cities of Burien and SeaTac to prepare compatible land use plans consistent with both community and Port goals for future uses in the areas identified for acquisition under the plan.

(c) Insulation of Multi-Family Structures: Port staff shall prepare a plan for the integration of multi-family structures into the Port's Noise Remedy Program. The plan shall be limited to the insulation of owner-occupied multi-family units within the 1998 70 DNL noise contour, as well as additional criteria for determining program eligibility.

(d) Insulation of Public Buildings. The Port shall continue its school insulation program for schools located within the 1998 65 DNL and greater DNL noise contour.

(e) Mobile Homes: (i) Port staff shall prepare a plan for the acquisition of mobile/manufactured home parks within the 1998 70 DNL noise contour. The plan should consider other public projects that may result in the acquisition of the parks and subsequent conversion to airport compatible uses. (ii) Port staff shall review the existing Mobile Home Relocation policy adopted pursuant to Resolution No. 3257 and propose to the Commission an amendment to the policy that incorporates inflationary increases in the cost of relocation.

(f) Zoning and Comprehensive Plans: (i) The Port shall work with the cities of Burien and SeaTac, and recommend, as necessary, amendments to the respective zoning/comprehensive plans that ensure airport compatible land uses consistent with FAR Part 77 height requirements in those areas designated for potential acquisition under subsections (c) and (e) of this Section 3; and (ii) Port staff is directed to begin discussions with these jurisdictions concerning land use, development and infrastructure in these areas.

(g) Building Code Modifications: Port staff is directed to make recommendations to King County and the cities of Des Moines, SeaTac and Burien to amend the noise attenuation requirements of their respective building codes to require that: (i) properties located within the 1998 65 DNL must have consistency of materials and installation, recognizing that buildings closer to the Airport will require a greater degree of sound insulation; and (ii) any noise sensitive facility built within the 1998 65 DNL noise contour must achieve sound attenuation reduction in accordance with FAA standards.

ADOPTED by the Port Commission of the Port of Seattle at a regular meeting held this 12th of December, 2000, and duly authenticated in open session by the signatures of the Commissioners voting in favor thereof and the seal of the Commission.

JACK BLOCK

PAIGE MULLER

CLARE NORDQUIST

PATRICIA DAVIS

Port Commission

Appendix Eighteen. Other Comments Received During Study

Less Jet Noise is Possible!

Your help is needed! For more than ten years your local government in conjunction with a local citizen's group (ECAAN) has attempted to reduce the serious impact of jet noise on Medina, Clyde Hill and adjacent Bellevue neighborhoods. You may have read recently in the news that the Port of Seattle has commissioned a citizens committee ("Part 150") to review and make recommendations regarding the "East Turn." Their advice to the Port could be (1) a dispersal of departing jets into a broader corridor and (2) increased usage of the Duwamish Industrial corridor for departures. Both of these possibilities would greatly reduce the amount of jet noise currently being experienced by residents living beneath the narrow corridor presently servicing the East Turn (see Map on next panel).

What help do we need?

On February 9, the Part 150 committee will vote to pursue or not pursue these recommendations. Your input will significantly influence the Port's decision. The Port of Seattle staff will review the committee's findings. If we are successful, there will be a public hearing in May with the final decision by the Port of Seattle sometime in June, 2000.

What Can I Do?

The Port of Seattle Commissioners and the FAA need to hear from the citizens impacted by jet noise NOW. Let these officials know that you endorse the proposed solutions of routing aircraft over non-residential areas and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths. Our goal is not to eliminate aircraft noise, but to more equitably distribute the noise burden associated with what all agree is a regional facility that benefits all. Letters to the Editor of the Seattle Times and Eastside Journal will also help.

Act Today To Let These Decision-makers Know You Want Relief

Port of Seattle

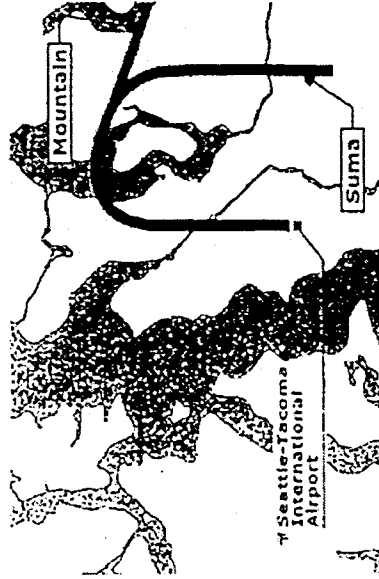
Jack Block, President
Port of Seattle Commission
P.O. Box 1209
Seattle, WA 98111-2205
blockj@portseattle.org

FAA

Larry Andriesen
Federal Aviation Admin
1601 Lind Avenue SW
Renton, WA 98055
larry.andriesen@faa.gov

Consultant Part 150 Committee

Barnard Dunkelberg & Co., c/o Mr. Michael West
1122 East Pike St, #1286, Seattle, WA 98122
mjwest@prodigy.net



Existing East Turn Tracks



The "split turn" proposed by the Port more equitably distributes jet noise from Sea-Tac operations.

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Yes - it seems only fair route planes over non residential areas - split into two paths. Noise affects us all. Share the burden!

Ron + Susie Lowe

1001 P.O. Box 209

Medina WA 98039

425-455-3144

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulzc@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name: FRED J FROUT JR
Address: PO BOX 901
BELLEVUE WASH
98009

Phone: BELLEVUE FAX COVOD'S

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

I hope it will pass!
Margaret Hansen



Margaret Hansen
423 99th Ave NE Apt 5
Bellevue, WA 98004-5450

Phone: 425-454-7452

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

I agree with the above statement! It is difficult to carry on



Name: Heidi L. Eilers
Address: 10016 NE 23rd St.
Bellevue, WA 98004

Phone: a conversation while outside during the summer months without being interrupted by the plane
Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

Sincerely,
Heidi Eilers

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

THERE IS EXCESSIVE JET NOISE OVER OUR AREA!

ROBERT & MICHELLE KOLSTAD

Name

10111 SE 8TH

Address

BELLEVUE WA 98004

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

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Phone: 425-454-9222

Fax: 425-454-8490



WINDERMERE REAL ESTATE, ABR
Mo (206) 940-1136
Dire (206) 450-2611
Fax (425) 450-2600
E-mail jdiener@siteconnect.com



Windermere Real Estate/
Bellevue Commons, Inc.
200 112th Avenue N.E., Suite 200
Bellevue, Washington 98004

Windermere

spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Safety is first - but noise pollution affects my property and quality of life. Paths should first be over unpolluted areas.

John Diener

Name

1605 108th Ave SE

Address

Bellevue, WA 98004

425-450-2611

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

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Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

DALESSIO

Name

10301 SE 28th ST

Address

Beaux Arts Village
WA 98004

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name: R. Lee Millward
Address: 1814 - 101st Place NE
Bellevue, WA 98004

Phone: 425-453-0880

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name: Hugh Hambling
Address: 1219 Evergreen Point Rd.
Medina, WA 98039-3136

Phone: 425 454 0905

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name: B. F. DOTSON
Address: 3603 EVERGREEN PTG
Medina, WA 98039

Phone: 425 454 1471

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

We are in complete agreement with above proposal. There is no logical argument to not make the changes in the proposed endorsement.

Name

JAN/LARRY GRANSTON

Address

9020 NE 19th (CLYDE HILL)
BELLEVUE, WA 98004

Phone

454-0599

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

I do endorse

Name

Carole Coogler

Address

1555 77th Pl. NE

Medina, WA

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

CARL EDLUND

Name

10130 SE 8th St

Address

Bellevue WA 98004

Phone

425-451-3590

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

It is time to more equitably distribute the noise burden associated with a regional facility that benefits all of us.

Name Diana & Tom Stotler

Address 8802 NE 20th

City/Country/State ZIP Clyde Hill, WA 98004

Phone (425) 454-8967

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

We are tired of the continual jet noise.

Name Mary & Michael Harley

Address 3220 84th Ave NE

City/Country/State ZIP Medina WA 98039

Phone 425 453-9529

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144

MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

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I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Something must be done to reduce noise over our Community.

Name Ann & David Tillotson

Address 2460 Evergreen Pt Rd

City/Country/State ZIP Medina WA 98039

Phone 425-452-1959

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144

MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name: Julie E Pat Moran
Address: 8831 NE 28th St
Clyde Hill WA 98004

Phone: (425) 494-5423

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

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Comments:

Name: Robert Rasmussen

Address: Robert Rasmussen
3819 82nd Ave. NE
Bellevue, WA 98004-1327

Phone:

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
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Comments:

Name: James and Jane, Doug and Jeff
The noise be shared fairly by all, not just one area.

Name: James and Jane, Doug and Jeff
Address: 1465 Evergreen Pt Rd,
Medina, WA 98039

Phone: 425-453-8816

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
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Comments:

I am for the Turn Split Proposal. I have lived at this address for 52 yrs.

Name: Earl P. Johnson
Address: 8719 Ridge Rd
Medina wa. 98039

Phone: 425-454-4660

DETACH AND SEND TO:

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Comments:

Name: Steve + Diana Schiro
Address: 2403 Evergreen Pk. Rd
Medina, WA 98039

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
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Comments:

Name: James & Beverly Hanson
Address: 9945 Lk. Wa. Blvd. N.E.
Bellevue, wa. 98004

Phone: (425) 453-8496

Let us know if you respond. We may need your help again later

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Comments:

Peary Burkhop
Name
1623 - 102nd Pl. NE, A-2
Address
Bellevue 98004

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
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MEDINA, WA 98039

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Comments:

We believe the splitting the Flight Paths is the best way of the future

Chuck & Kathy Gleich
Name
2423 104th Ave SE
Address
Bellevue WA 98004

Phone
425-454-3508

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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Comments:

No noise over our house is getting worse all the time it seems. Please pass the proposal!

Kurt BelBene
Name
3624 Evergreen Point Rd
Address
Medina, WA 98039

Phone
425-454-8003

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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Comments:

Please help us! Aircraft noise continues to increase at an alarming rate. G. Willey
8608 N.E. 10th
Medina WA 98039

Name

Address

Phone

Let us know if you respond. We may need your help again later

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Comments:

Bob House
9001 Vineyard Crest
Bellevue WA 98004

Bus 206-453-8704

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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Comments:

It's time to act in fairness to all concerned,

Patricia Flug
PO Box 596
Medina

Address

Phone

physical address 8743 Dunlake
425-462-7711

Let us know if you respond. We may need your help again later

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Comments:

I support the above endorsement.

Name



Patricia Scordo
2602 78th Ave. NE
Medina, WA 98039-1519

Phone

425 455 2837

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulzcc@ci.medina.wa.us

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Phone: 425-454-9222
Fax: 425-454-8490

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Comments:

Since the four-fast plan was adopted in 1990, overflights have increased exponentially over our home. It seems just to request that the aircraft noise burden be shared.

Name

Victor & Mary Odenmat
1825 77th Ave NE
Medina, WA 98039

Phone

425 455 4776

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

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Comments:

It's ridiculous to be continually awoken by aircraft noise early in the am!

Name

Dave & Jane Kossuth
4230 95th Ave NE
Bellevue, WA 98004

Phone

425 450 0055

Let us know if you respond. We may need your help again later

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Comments:

IT IS UNFAIR TO US WITH THE PRESENT ROUTE PATTERN. IT NEEDS TO CHANGE.

Name

BJORN ELDE

Address

1809 96th AVE NE

CLYDE HILL, WA 98004

Phone

(425) 452-9739

Let us know if you respond. We may need your help again later

CITY OF MEDINA

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MEDINA, WA 98039

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Comments:

I agree w/ the above. club

Name

Christine Beito

Address

2034-94th NE

Clyde Hill, WA 98004

Phone

425 453 1186

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD
P.O. BOX 144

MEDINA, WA 98039

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Fax: 425-454-8490

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Comments:

WE WOULD LIKE TO SEE THE "EAST TURN" MUCH FARTHER NORTH AFTER MORE ALTITUDE IS ACHIEVED, SAY 8-10000 ft.

Name

Mr. & Mrs. GERALD A. FLORENCE

Address

1040 - 21ST AVE, N.E.

BELLEVUE, WA 98004-3901

(WEST BELLEVUE)

Phone

(425) 454-1342

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD
P.O. BOX 144

MEDINA, WA 98039

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Fax: 425-454-8490



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Comments:

Support Split East Turn

Name SAADHANON

Address 3118 103RD AVE

Bellevue WA 98004-1919

Phone 425.822.8608

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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Comments: we think

we think
the routing aircrafts over
non-residential areas
is the best possible
solution!

Name Reza Faranak Jalber

Address 710 Lake Washington Blvd N.E.

Bellevue wa 98004

Phone

Let us know if you respond. We may need your help again later

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Comments:

.....

Name DANCY - PAMELA CARVER

Address 4432 - 95th NE

Bellevue wa 98004

Phone 425 - 688 - 1102

Let us know if you respond. We may need your help again later

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Comments:

Find way to fly over non-residential areas of which they must fly over residential areas, they should be spread out at a minimum into several paths

Name Rao & Satya Remala

Address 8827 NE 36th St.
Bellevue, WA 98004

Phone 425-467-9407

Let us know if you respond. We may need your help again later

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Comments:

Fairness!
Split the East Turn!

Name Tom / Sally Wilder

Address 1728 89th Pl NE
Clyde Hill, WA 98004

Phone 425 453 9728

Let us know if you respond. We may need your help again later

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WE WOULD ATTEND THE FEB. 9

Comments: MEETING, BUT WE'LL BE OUT OF TOWN.

THERE ARE TIMES WHEN THE NOISE FROM FLIGHTS OVER CLYDE HILL IS INCREDIBLY AGGRAVATING. PLEASE RE-ROUTE THESE FLIGHTS, OR AT LEAST REDISTRIBUTE THE BURDEN OF THIS THREAT TO OUR QUALITY OF LIFE!

Name JEFF & KAREN NEBEL

Address 2055 94th Ave. NE
Clyde Hill, WA 98004

Phone 425.646.7802

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

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Fax: 425-454-8490

THANK YOU. MR. WEST FOR YOUR

DETACH AND SEND TO:

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Comments:

WE ARE ALSO IN THE HIGHEST LAND TAX BRACKET. IF I WANTED TO LIVE IN BURLEIGH, I WOULD MAKE

Name: MARC/SHARI LARLEY
Address: 9638 ALDER RD
BELLEVUE WA 98004

Phone: 425-453-4576

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
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Comments:

Name: LORRAINE WELTZIEN
Address: 9416 N.E. 24th
CLYDE HILL, WA. 98004

Phone: 425-454-7775

Let us know if you respond. We may need your help again later

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Comments:

Name: HARRY DAVIDSON
Address: 8723 RIDGE RD
MEDINA, WA 98039

Phone: (425) 454-3792

Let us know if you respond. We may need your help again later

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501 EVERGREEN POINT ROAD
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Comments:

Name: Edward W. Reid
Address: 1515 90th Pl NE
Clyde Hill
WA 98004
425-454-9303

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St., #1286, Seattle, WA 98122 as soon as possible.

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Comments:

Comments: AFTER MOVING INTO CENTRAL BELLEVUE TWO YEARS AGO I WAS SHOCKED @ THE NOISE LEVEL FROM EAST BOUND TRAFFIC, NOT ONLY SEA-TAC BUT BOEING FIELDS ALSO. WOULD PROBABLY ALSO
Name: ANN + NATALIA GOODMAN (MOTHER)
Address: 1657 105th Ave, S.E.
Bellevue, WA 98004
425-452-9589

Let us know if you respond. We may need your help again later

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Comments:

Comments: Hope This Flies!

Name: BONNIE HEDEEN
Address: 319 102nd AVE SE
Bellevue WA 98004
425-883-4773

Let us know if you respond. We may need your help again later

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I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Southbound planes should be allowed to start their turns much sooner - the only logic for the flight path now must be for the influence of certain Messier Island biggies.

Hugh M. McClelland

Name

828 101st Pl. SE

Address

BELEVUE, WA 98004

(425) 454-1982

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

It's very noisy - It often sounds as though we are being "dive-bombed" rather frightening at times.

Shirley Crawford

Name

P.O. Box 257

Address

Medina, WA 98039

(425) 454-4258

Phone

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Comments:

Gordon J. Robinson

Name

2632 78th Ave., N.E.

Address

Medina, WA 98039-1519

425-455-0749

Phone

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Comments:

Name: Margaret Rod Johnson
Address: 11004 SE 26th St.
Bellevue WA 98004
Phone: (425) 454-3583

Let us know if you respond. We may need your help again later

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We definitely endorse!

Comments:

Over out-of-town guests find themselves by airport and disembarked as we see that all aircraft are routed over city community exclusively rather than over highways as done in other local areas. This question is always the same: how does, why?

Name: Marvyn Mairlyn Davis
Address: 9234 N.E. 13th St.
Clyde Hill WA
98004-3448
Phone: 425-454-7591

Let us know if you respond. We may need your help again later

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Comments:

SUMMER NITS, WE SLEEP OUTSIDE, GET NOISE IS VERY DISTURBING - ALSO DURING THE DAY I THINK OF POLLUTION AND

Name: Roundway, Hwy
Address: 8818 NE 10th St
Clyde Hill, wa. 98004
Phone: 425-454-3873

Let us know if you respond. We may need your help again later

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Comments:

I SECOND THE ABOVE BUT THINK MORE THOUGHT SHOULD GO INTO 3 OR 4 EAST TURBS WITH THE 3RD RUNWAY, COMB IN A SPLIT WOULD DO IT

Name MURIEL HAP CRAWFORD

Address 8624- NE 17

City CLYDE HILL WA. 98004

Phone 425-4545454

Let us know if you respond. We may need your help again later

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Comments:

Name Anita Quiring

Address 8628 N.E. 17th Pl

City Clyde Hill 98004

Phone 454-5370

Let us know if you respond. We may need your help again later

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Comments:

I had wanted contacts jet noise in my life, I would have bought a big expensive house with lower real estate taxes near the airport. Sometimes I can't even hear to talk on the phone because the noise is so continual. One plane isn't out of hearing range before the next plane is already overhead. I can't sleep, either when I'm asleep or when I'm awake.

Name Aileen O. Mechem

Address 9437-NE, 5th St, Bellevue, WA 98004-5424

It seems very dangerous to fly all the planes on the same route over densely populated residential areas, especially since we have heard about all the pilots (425) 454-0770 including near miss from the public until now.

Let us know if you respond. We may need your help again later

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Comments:

John & Kim Bantz

3003 96th Avenue

Bellevue, WA. 98004

425-451-0160

Let us know if you respond. We may need your help again later

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Comments:

SEA TAC & BOEING FIELD AIR TRAFFIC IS INCREASING & WILL INCREASE MORE WITH THE THRD SEAMIC RUNWAY. NOW IS THE TIME TO SPREAD THE RESULTING NOISE BURDEN. PLAY IT FAIRLY WITH THE "SPLIT TURN" PLAN!

M/M SCHELL HARMON

2885 93RD AVE. NE

CLYDE HILL, WA 98004

(425) 455-0367

02/07/00 Schell Harmon

Let us know if you respond. We may need your help again later

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Comments:

Robert Li

9636 Evergreen Dr.

Bellevue WA 98004

Phone

Let us know if you respond. We may need your help again later

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Comments:

We accept that jets are part of life today - we just need to spread out the impact & minimize it's concentration.

Name Jinda & Joe Rosmann

Address 9815 Vineyard Crest
Belleuve WA 98004

Phone 425-637-7655

Let us know if you respond. We may need your help again later

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Comments:

Right on!

Name Raiti Wonnens

Address 9911 Lk Wash Bl, NE
Belleuve WA 98004

Phone 455 5551

Let us know if you respond. We may need your help again later

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Comments:

Name BRET NEELEY

Address 8641 NE 17th PL
Clyde Hill WA
98004

Phone 425 452 9165

Let us know if you respond. We may need your help again later

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Comments:

Think the idea is great as we would all "share" the noise

M/M Daniel G. Woodward

Name

8632 N.E. 17th Pl.

Address

Clyde Hill, Wa. 98004

425. 455. 5353

Phone

DETACH AND SEND TO:

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Comments:

SURELY, SPREADING THE FLIGHTS IS THE BEST WAY OF ACHIEVING FAIRNESS FOR THE EAST SIDE RESIDENTS.

MARY & CAROL MILLER

Name

461 DETWINER LANE

Address

BELEVUE WA 98004

253-0334

Phone

Let us know if you respond. We may need your help again later

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Fax: 425-454-8490

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Comments:

Please implement the routing proposal above. Noise pollution is pallative

AMNE Offenkacker

Name

10225 SE 28th St

Address

Beaux Arts Village WA. 98004

425 454 2843

Phone

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

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Comments:

Rob Butcher
Name
9325 NE 19th St
Address
Bellevue, WA 98004
425-456-1111
Phone

Let us know if you respond. We may need your help again later

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Fax: 425-454-8490

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Comments:

Please do anything
to lessen the early
morning noise
Barbara J. Amin
Name
710 - 98th AVE NE
Address
Bellevue, WA 98004
425-454-1629
Phone

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

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Comments:

PLANE NOISE STARTS EARLY
IN THE MORNING AND CONTINUES
ALL DAY. IN THE SUMMER, WE
CANNOT CARRY ON A CONVERSATION
ON OUR NEW DECK BECAUSE OF
THE PLANE NOISE.
W.W. R. & JEAN L. DAVIDSON
Name
10046 S.E. 16 ST.
Address
Bellevue, WA
98004-7015
(425) 455-4217
Phone

Let us know if you respond. We may need your help again later

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Comments:

We strongly endorse this proposal!

Name SUSAN K BLETHEN

Address 375 DORRIGAN DRIVE SE

BELLEVUE, WA 98004

+ ROBERT C. BLETHEN

CAVENDISH BLVD

425-455-5284

Phone

Let us know if you respond. We may need your help again later

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Comments:

Name AMITZIA MIRIAM GIBBARY

Address 10323 S.E. 13th PLACE

BELLEVUE, WA 98004

425-454-8162

Phone

Let us know if you respond. We may need your help again later

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Comments:

Name STEPHANIE HOOPER

Name

Address

8720 NE 16th St.

Bellevue WA 98004

425-503-7265

Phone

Let us know if you respond. We may need your help again later

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Comments:

We have only lived in Yarrow Point for a few months + haven't noticed a problem. But we are concerned about equity + fair distribution of airplane noise throughout the area.

Name

Dale & Annie Roth

Address

9018 Pointis Drive NE
Yarrow Point, WA 98004

Phone

Let us know if you respond. We may need your help again later

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Comments:

Strongly support this effort - tired of plane noise over house

Name

Judy Heydick

Address

2225-102nd Pl SE
Bellevue, WA 98004

Phone

425-453-0080

Let us know if you respond. We may need your help again later

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Comments:

Name

Boyd Ruckhaber

Address

2620 107th Ave NE

Bellevue, WA 98004

Phone

425-576-0292

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

KATHARINE BENTLEY
6 DIAMOND SPANCH
BELLEVUE WA 98004
425 4509968

Name

Address

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1208, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Please consider seriously this significant change to two routes. Quality of life is at stake. Noise increase will be unbearable over the years -
Tean + Russ FAEH

Name

Address

Phone

3216 Hunts point Bend
Bellevue WA 98004
425 454 8526

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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Comments:

I live in Medina and it is a constant parade of airplanes flying over my house. Summer time in my yard is not peaceful and would like - please help & consider re-routing.
Laura Burgess
84186th Ave NE
Medina, WA 98039
(425) 454-0355

Name

Address

Phone

Let us know if you respond. We may need your help again later

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Comments:

Sharing is good for all of us... about the noise!!

THE Hills

1800 77th Avenue, 98039
Medina, WA 98039

425.646.0722 (Csk)

Let us know if you respond. We may need your help again later

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Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

J. HONARI

2808 95th Ave NE
Bellevue, WA 98004

(425) 646-9171

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

To the extent possible the flight paths that must fly over residential areas should be done in a manner that spreads the daily cumulative noise impulse to all areas equally.

Roy Phillips/Jeanne Phillip

10108 SE 2051
Bellevue, WA
98004

425 454 8064

Let us know if you respond. We may need your help again later

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I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

WE CAN'T VIDEOTAPE QWA
KIOS PLAYING OUTSIDE -
TOO MUCH JET NOISE!
PLEASE SHARE OUT
THE NUISANCE.

Name

SETH ARLow

Address

8297 OVERLAKE DR. W.
MEDINA, WA 98039-4727

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

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Comments:

Send some over Kirkland
or Kenmore too on
an alternating basis of
tracks 1 2 3 4 1 2 3 4

Name

R. B. Bindon

Address

PO Box 719
Medina, wa. 98039

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

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Comments:

[Handwritten signature]

Name

[Handwritten signature]

Address

1000 SUNSET WAY
BELLEVUE WA 98004

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

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Comments:

It gets mighty wazy around here and dispersal would seem an equitable solution

Name JOHN DACIA EMMEL

Address 9663 Evergreen Drive

Bellevue, WA 98004

Phone 425-454-5072

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144

MEDINA, WA 98039
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I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

I agree with the "split turn" plan

Name _____

Address GARY & ALICE EILERS

Gary & Alice Eilers
1428 Evergreen Pt. Rd.
Medina, WA 98039-USA

Phone _____

Let us know if you respond. We may need your help again later

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MEDINA, WA 98039
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Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

AIRCRAFT NOISE CAN BE SO LOUD AND SO CONTINUOUS THAT IT WAKES YOU UP. IT IS REALLY LOUD, GRINDING AND AWFUL, GOING ON AND ON ALL DAY.

Name WHITNEY CURRAN

Address 9432 NE 24TH ST.

CLYDE HILL WA

-thank you for a chance to COMMENT

Phone _____

Let us know if you respond. We may need your help again later

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Fax: 425-454-8490

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Comments:

I don't see why all the planes must fly over exactly the same neighborhood? It makes that neighborhood suffer all the noise while others get none. Unfair!

Name: Christy Papadakis

Address: 1235 96 Ave SE

Bellevue, wa

Phone: 425-462-8295

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

MY AMERICAN AIRLINES CAPTAIN NEXT DOOR NEIGHBOR ADVISES THE RIGHT TURN OVER GEORGETOWN POSES NO FLIGHT SAFETY PROBLEMS!

Name: FRED KORTMAN

Address: 10425 SE 20th

BELLEVUE, WA 98004

Phone: 425-453-9009

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulz@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Am in agreement with dispersing the noise.

Name: Robert - Lawrence Bush

Address: 9777-31st Avenue

Bellevue WA 98004

Phone: 425-646-2780

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulz@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St., #1286, Seattle, WA 98122, as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Trust us - the number of flights over our home has increased plenty - while we think a busy sea-tac is great we do feel that more of the eastside should share the noise

Bob + Jeri Berg
Name

2510 85th NE
Address

Clyde Hill 98044

Wacon about set air decision on Sun evening departure - shu

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

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Phone: 425-454-9222
Fax: 425-454-8490

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Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St., #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Danna Fullerton
Name

10609 SE 29th St.

Beaux Arts, WA 98004

Phone

Let us know if you respond. We may need your help again later

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Comments:

Mrs. Myranda Knight (Goyekovic)
Name

2303 Evergreen Point Rd.

Medina, Wa 98039

425-454-9823
Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Please apply "split turn"
I'm suffering the noise of jet liners.

Name

Hideyuki Ito

Address

531 Overlake Dr. E
Medina WA 98037

Phone

(425) 455 5684

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

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Comments:

Thomas M. Brandes
1002 Evergreen dr
Bellevue, WA 98004

Name

Address

Phone

Let us know if you respond. We may need your help again later

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Comments:

We had the
Airplane noise long
enough to get someone
also enjoy (?) it!

Name

Address

Shady v All (O.A.) Perzla
1615-104 Ave. S.E.
Bellevue, Wa. 98004

Phone

(425) 454-9667

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Sometimes when planes go over, cannot even hear radio on bedside table (r we're in bed). Cannot carry on conversation outdoors if people not close together when planes go over. You would probably have to believe & believe how bad it is. Cutting flights over our home in half would be fantastic.

John + Jean Fuller
701-95th N.E.
Bellevue

Phone

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

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Comments:

LLOYD & MAROLYN REED
8703 N.E. 11th St
MEDINA, WA 98039

425-455-3689
Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

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Comments:

Gail Singer
2615 102nd Avenue N.E.
Bellevue, WA 98004

425-827-6376
Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
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MEDINA, WA 98039
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Fax: 425-454-8490

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Comments:

[Empty box for comments]

Name Ted Graham
Address 1404 102nd NE
Bellevue
WA
98004
Phone 425 454-7694

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA-98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490



B-7-00

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

THE PROPOSED ROUTE AS ILLUSTRATED IS NOT CONSISTENT W/ THE ABOVE ENDORSEMENT RE: ROUTING OVER THE DUWAMISH & ELLIOT BAY. IS THE BAY/INDUSTRIAL ROUTING PRESENTLY BEING CONSIDERED? IT WOULD BE GOOD IF FLIGHT PATHS MOST INCLUDE RESIDENTIAL - DISPERSAL WOULD BE GOOD IF IT COULD BE SAFELY ACCOMPLISHED & REASONABLE & FAIRLY IMPLEMENTED. ONE AREA MUST NOT BE SPARED AT THE EXPENSE OF ANOTHER, UNLESS TOTAL ROUTING OVER NON-RES AREAS IS FEASIBLE - I OPPOSE TOTAL ELIMINATION OF AIR TRAFFIC OVER OUR AREA.

THANK YOU -

Mary Jane Swindley

Name

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490



DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

WE HAVE BEEN SUBJECT TO THE NORTH TAKE OFF / RT. TURN ADVISE FOR YEARS. MENAGED IS SUCCESSFULLY CANCELED & FAA MOVED 1 MILE NORTH TRANSFERING THE PROBLEM - SPREAD IT OUT - WE ALL BENEFIT FROM GROWTH - LET'S

SHARE THE DOWNSIDE TOO.

EDWARD PILLITTERA

Name

1914 102ND AVE NE

Address

BELLEVIEW, WA

98004

Phone

425-646-2690

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490



DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

I heartily support this proposal! P. Schultz

Name

Priscilla Johnston

Address

2223 Evergreen Pt Rd

Medina, WA 98039

Phone

425-454-7333

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

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Phone: 425-454-9222

Fax: 425-454-8490

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Comments:

The aircraft noise evering home ad summer is very bad. You cannot visit with people on my patio, no you cannot hear them!!

Name: Charles T Golob
Address: 9803 N.E. 15th St
Belleuve WA 98004
Phone: 425-454-0444

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1288, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

We fully support this proposal. There is plenty of room to disperse the air traffic to several areas.

Name: Bill Cassinelli
Address: 530 100th Ave SE #15
Belleuve, WA 98004
Phone: 425/451-7488

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

The problem has got much worse in recent months over Beauty Arch. We are willing to take our share of aircraft traffic, but feel it should be spread over non-residential areas further West over S. Hercules, North of Kilo land, Bristle, & Bellevue.

Name: Peter and Sylvia Hobbs
Address: 2815 105 Ave SE
Beauty Arch
WA 98004
Phone: (425) 454-3732

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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MEDINA, WA 98039
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Comments:

Please consider this request!
Frank Jun

Name: Jim i ROBERTA WEFARIN
Address: 1445 EVERGREEN PT DR
MEDINA, WA 98039

Phone: 425-454-3648

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
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MEDINA, WA 98039

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Comments:

Name: Jeanne Roberts
Address: 2307 88th Pl. NE
Olyde Hill, WA 98008

Phone:

Let us know if you respond. We may need your help again later

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Comments:

The airplane noise is so loud it startles my guests. You can not carry a reasonable conversation when outside.

Name: Cindy & Gary Frank
Address: 2212 102nd Pl. SE
Bellevue, Wa. 98004

Phone:

425-688-0807

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
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Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Bernard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name: Patti Thompson
Address: 375 Bellevue Way SE #9
Bellevue WA 98004

Phone: 425 855 7253

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

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Fax: 425-454-8490

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Comments:

Share the wealth.

Name: Joyce Papke
Address: 424 102nd Ave SE #307
Bellevue, WA 98004

Phone: 425-453-1775

Let us know if you respond. We may need your help again later

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Comments:

Name: Thomas & Constance Aspinall
Address: 8526 NE 26 ST
Clyde Hill, WA 98004

Phone:

Let us know if you respond. We may need your help again later

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Comments:

We all share the benefits of flight - let us all share the noise of flight - Let there be no free loaders.

Name HELEN & CHARLES DAVIDSON

Address 7157 OVERLAKE DR. W.

MEDINA

WA. 98039

425-454-9967

Phone

Helen Davidson

Charles B. Davidson

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Comments:

[Empty comment box]

Name Douglas and Charlotte Guyman

Address 3324 78th Place NE

Medina, WA 98039

425-454-5545

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA

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Comments:

We endorse the proposal above.

Name DAVE WANANET HUGUENIN

Address 9130 NE 134A

BELLEVEUE, WA 98004 (CLYDE HILL)

(425) 454-9610

Phone

Let us know if you respond. We may need your help again later

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Comments:

Please Help!

Peter & Teresa Youtz

Name

Address

726 95TH AVE N.E
Bellevue WA 98004

425 646-8051

Phone

Let us know if you respond. We may need your help again later

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Comments:

WE HAVE LIVED WITH JET NOISE IN OUR COMMUNITY FOR OVER 10 YEARS IN FAIRNESS, WE FEEL THE ABOVE PROPOSAL MIGHT EMPHATIZE THE NOISE. THANK YOU

ROBERT + MARTHA AIGNER

Name

1601 90TH AVE, N.E.

Address

Clyde Hill, WA 98004-3211

(425) 454-8385

Phone

Let us know if you respond. We may need your help again later

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Comments:

The noise is so bad during the summer when we are outside with our young children we cant even talk to each other, I also cant hear if my children are in trouble and calling for me.

Name

Cindy - Jured Wheeler

Address

9204 N.E. 30th St.
Clyde Hill WA 98004

425/637-0134

Phone

Let us know if you respond. We may need your help again later

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Comments:

Something must be done. This was not the route when we moved here 20 years ago. It is truly unfair to have all the noise.

Name: Dennis & Connie Gerlitz

Address: 2415 28th Ave. N.E. Medina, WA 98039

Phone: 425 455-0944

Let us know if you respond. We may need your help again later

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501 EVERGREEN POINT ROAD
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MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

Yes I would

DETACH AND SEND TO:

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See Kailing

Comments:

THIS IS JUST ANOTHER "QUALITY OF LIFE" ISSUE IN AN ENVIRONMENT THAT IS BECOMING LESS HOSPITABLE EVERY DAY, ALL FOR WHAT PURPOSE - ?

Name: Ken and Gail Kailing
Address: 7920 NE 26th Street
Medina, WA 98039

Phone: 425-455-2586

Let us know if you respond. We may need your help again later

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Fax: 425-454-8490

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Comments:

THE SYSTEM NEEDS TO DISTRIBUTE THE FLIGHT / NOISE EQUALLY

Name: MARK CORDOVA

Address: 8820 NE 15th PLACE
CLYDE HILL, WA 98004

Phone: 425-454-2411

Let us know if you respond. We may need your help again later

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Fax: 425-454-8490

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Comments:

WE ALSO BELIEVE THEY SHOULD USE Paine Field to help alleviate traffic pressure at Seatac. There is no in-pa structure to support continued growth at Seatac.

Name

Pete & Diane Kalamand

Address

4025 94th Ave NE
Yarrow Point, WA 98004

Phone

425-480-0981

Let us know if you respond. We may need your help again later

CITY OF MEDINA

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Comments:

L.F. Cabrera / H.O. Stagno

Name

2009 Kilarney Way SE
Bellevue

WA 98004

Phone

(206) 451-4065

Let us know if you respond. We may need your help again later

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Comments:

Name

Gregory & Sally Dahl

Address

9216 NE 13th St
Bellevue WA 98004
(Clyde Hill)

425-454-9205

Phone

Let us know if you respond. We may need your help again later

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Comments:

2/5/00
We, on the western edge of Uuecrest, Bellevue, are disturbed when successive flights are over head. It takes about 5 minutes for the noise to disappear. Old DC 9's are the worst offenders.

Name
L. L. LOPEZ

Address
1031 Sunset Way
Bellevue, WA 98004

Phone
(425) 454-7213

Let us know if you respond. We may need your help again later

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Comments:

Name
Mary Doyle Douglas
Address
904 80th NE
Medina WA 98039

Phone
(425) 454-3817

Let us know if you respond. We may need your help again later

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Comments:

Name
Brad + Gail Pratt
Address
2232 78th Ave NE
Medina, WA 98039

Phone
425-454-4161

Let us know if you respond. We may need your help again later

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Comments:

Some days the sound of jets is early, loud and persistent. I am 1 block from the Bad Shore of Lake Washington
Edith A. Martin

Name

EDITH A. MARTIN

Address

8457 MIDLAND RD.
MEDINA, WA 98039

Phone

425 - 454-7510

Let us know if you respond. We may need your help again later

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Comments:

SCOTT AND STACIA SMITH
9421 Vineyard Crest
BELLEVUE WA 98004

Name

Address

Phone

425-557-6464

Let us know if you respond. We may need your help again later

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Comments:

On clear summer days the noise of aircraft overhead is relentless. As the noise of one plane dies away, the growing noise of the next one replaces it. This is not fair or acceptable

Name

CHARLES & DELPHINE STEVENS

Address

8422 RIDGE ROAD

MEDINA

WA 98039

Phone

(425) 451-9592

Let us know if you respond. We may need your help again later

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Comments:

Name Jean M. Blakely

Address 3440 78th Pl. NE

Medina, WA 98039

Phone

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Comments:

Name Vaughn & Sharon Davis

Address 9417 SE Shoreland Dr.

Bellevue WA 98004

425-455-3929

Phone

Let us know if you respond. We may need your help again later

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Comments:

Pls be fair with the distribution of airplane noise. For the last 10 yrs we've listened to jet noise as they have made their east turn and powered for altitude making us live in the AM and keeping a headache to the PM

Name JOHN and DEBORAH BAKER

Address 2325 92nd AVE. NE

Clayde Hill WA 98004

425-453-0116

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA

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Comments:

Name: Loren K. Brobeck
Address: 3223 Evergreen Point Road
Medina WA 98039

Phone: 425-454-6737

Let us know if you respond. We may need your help again later

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Comments:

Please implement some relief by more quickly dispersing the traffic.

Name: Stephen and Cardyn Clark
Address: 2770 Evergreen Pt. Rd
Medina WA 98039

Phone: 425-453-1170

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

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Comments:

The noise in the summer is so irritating. Starting @ 7 AM every 2-3 min we hear planes, we hear this repeat in the eve. Anno on our deck is not what it should be. I would like

Name: Trish & Ken Briggs
Address: 10527 SE 27th St
Beach Arts, WA
98004

Phone: 425 451-2261

rather pay more for more air ticket and have out of the planes fly further out of the way over Elliott Bay. (we each told this is why they don't fly over Elliott Bay - let them cost?)

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

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Comments:

WE'RE RIGHT UNDER THIS PATH - IT SOUNDS EXACTLY LIKE IT WOULD NEXT TO AN AIRPORT - PLEASE HELP SPREAD THE NOISE MORE EQUALLY !!

Name

MARY LAUCKS

Address

8708 NE 20th St
Bellevue, WA 98004

Phone

Let us know if you respond. We may need your help again later

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Comments:

I hear planes so early in the AM

Name

John & Anne Trainor

Address

2307 Medina Circle
Medina, WA 98039

Phone

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Comments:

I don't feel that the objection of Mercer Island residents should take complete precedence over those of Medina / Clyde Hill / Hunt Point / Yarrow Point

Name

Allen E Seneor

Address

14416 92nd Ave NE
Clyde Hill, WA 98004

Phone

(206)-454-5883

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DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

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Comments:

Name: James + Catherine Ford
Address: 2119 - 104th Pl. SE
Catherine M. Ford
425-451-1992
Phone:

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name: Sharon Katsulis
Address: 10407 SE 25th St
Bellevue WA 98008
Phone:

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1206, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Please vote to make the noise factors split and more equitable,

Name: Chris + Richard Dilcher
Address: 8905 Groat Point Dr.
Medina
425-453-9604
Phone:

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

There is one reason for West Bellevue, etc. to have to endorse all of the noise. It is only equitable for the "problem" to be spread out.

JEFF + SUZY LEVERE
Name
3848 - 94th Avenue
Address
Bellevue WA 98004

(425) 202-3688
Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
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Fax: 425-454-8490

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Comments:

Exp in the region share benefits from air travel. All should share in the bene. as well - direct flights equally all over.

Jack and Carlene Motteller
Name
2828 95th Ave NE
Address
Clyde Hill, WA 98004

425-454-9949
Phone

Let us know if you respond. We may need your help again later

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Comments:

Carmin & Martin-Smead
Name
8828 NE 2nd Pl.
Address
Medina WA 98039

(425) 635-0773
Phone

Let us know if you respond. We may need your help again later

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Comments:

AIRCRAFT NOISE HAS INCREASED OVER THE PAST FEW YEARS QUITE NOTICEABLY.

PAUL & PAT PATT

Name

5 ENATAI DR.

Address

BELLEVUE, WA.
98004

(206) 454-4895

Phone

Let us know if you respond. We may need your help again later

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Comments:

THE PROPOSAL WOULD HELP US, WE ARE A COUPLE WHOSE WHO SLEEP LATE. BUT WHEN THE WIND IS NORTH THE NOISE STARTS BEFORE 7 AM. AND MAKES SLEEPING DIFFICULT.

Francesca A. Bodin

Name

10403 S.E. 19th ST. BELLEVUE
98004

Address

425-453-0642

Phone

Let us know if you respond. We may need your help again later

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Comments:

It is unfair to the families in the flight path to not consider non-residential areas as we preferred flight path

Beth & Terry Drayton

Name

1520-79th Place NE

Address

Medina, WA 98039

(425) 600-9286

Phone

Let us know if you respond. We may need your help again later

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Comments:

It's not trouble at all, I can hardly hear them if I hear the plane it's very little. What we have to go through every day here only with the aircraft.

INGER. M. GARNETT

9215 NE 24th

Bellevue, Wash 98004

425-454-2391

Let us know if you respond. We may need your help again later

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Comments:

THE EXISTING PRACTICE HAS LONG BEEN UNFAIR TO MEDINA WITH THE NOISE UNBEARABLE AT TIMES. PLEASE CHANGE CHAIRS TO MAKE MORE FAIR TO ALL.

MR. MARKS R.L. BRDG

8400 N.E. 7th St.

Medina, Wa. 98039

425-454-9550

Let us know if you respond. We may need your help again later

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Fax: 425-454-8490

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Comments:

NOISE IN SUMMER MONTHS IS BOTH DISTURBING AND CONSTANT. A MAJOR ILLUATION

JAMES COLLETT

2000 79th Ave N.E.

MEDINA 98039

Phone

Let us know if you respond. We may need your help again later

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P.O. BOX 144
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Comments:

BRUCE & MARY J. DODDS

Name

1453-86TH AVE NE

Address

CLYDE HILL, WA

(425) 861-4928

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA

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Comments:

*This is a residential area
I feel that we have
too much aircraft noise
over our homes. Please
eliminate some of this noise.
Thank you*

Elizabeth Boyer

Name

Address

Ms. Elizabeth Boyer
9526 Lake Washington Blvd NE
Bellevue WA 98004-5407

Phone

Let us know if you respond. We may need your help again later

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Comments:

*WE AS COMMUNITIES MUST
SHARE ALL OUR WONDERFUL
THINGS, AS WELL AS OUR
UNCOMFORTABLE THINGS.*

CARL PATRICK SMITH

Name

JANICE ANN SMITH

Address

10926 - SE 26th

BELLEVUE, WA 98004

425-455-0864

Phone

Let us know if you respond. We may need your help again later

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Comments:

In the last 6-8 mo. the # of planes per day has increased - at all hours planes fly quite low to our house

Name Bruce Yates
Address 2532 Medina Cir
Medina WA 98039

Phone 425-451-0499

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

Thanks for help
Bruce Yates

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

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Comments:

I believe a multiple departure pattern should be used to spread noise as much as possible

Name Mr. & Mrs. John Dunkel
Address 8810 NE 2nd AVE.
Medina, WA, 98039

Phone 425-455-5914

Let us know if you respond. We may need your help again later

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P.O. BOX 144
MEDINA, WA 98039

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Phone: 425-454-9222
Fax: 425-454-8490

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Comments:

Name Lucy J. Inez
Address LUCY T. GREGG
1605-96TH AVE. N.E.
BELLE VUE, WA 98004-3419

Phone

Let us know if you respond. We may need your help again later

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501 EVERGREEN POINT ROAD
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Comments:

Rosset & Joan McGowan
Name

530 Upland Rd.
Address

MEDINA, WA. 98039

Phone

Let us know if you respond. We may need your help again later

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P.O. BOX 144

MEDINA, WA 98039

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Comments:

Chris Birke/and
Name

944 88th NE
Address

Medina, WA 98039

425-454-7757
Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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P.O. BOX 144

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Comments:

Anne Healey - Bill Fenner
Name

11001 SE 24th Place
Address

Bellevue 98004

425-453-1086
Phone

Let us know if you respond. We may need your help again later

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Comments:

WE STRONGLY SUPPORT THIS PROPOSAL!

BOB & WENDY PERKINS
Name
2015 78th AVE NE.
Address
MEDINA, WA. 98039

425-455-9101
Phone

Let us know if you respond. We may need your help again later

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Comments:

Please do what you can to re-route some of the Plans. we have a 9 month old and a 3 year old and the noise wakes them early in the morning again during their nap and keeps them up in the evening. They are very tired and so are we. Thank you!

T.J. + Suzanne McBill
Name
6077 Evergreen Pt. Rd
Address
P.O. Box 272
Medina WA 98039

425-709-6977
Phone

Let us know if you respond. We may need your help again later

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Comments:

PATRICIA A. SHANDS
Name
602 UPLAND ROAD
Address
MEDINA, WA. 98039

425-452-9796
Phone

Let us know if you respond. We may need your help again later

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Comments:

STEVE GREYER
3006 8TH PL NE
MEDINA, WA,
98039
206-930-1188

Let us know if you respond. We may need your help again later

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Comments:

We have to except some noise but not all. Share good things and also the not so good things
Chester Potuzak
1270 80th PL N.E.
Medina, wa 98039
425-454-1793

Let us know if you respond. We may need your help again later

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Comments:

THIS MEASURE IS FAIR & EQUITABLE. THE NOISE-LOAD MUST BE EVENLY SHARED.
DAVID & ANITA MELLO
P.O. BOX 231 (7611 NE.P)
MEDINA.
WA. 98039
(425) 454-6448

Let us know if you respond. We may need your help again later

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Comments:

A much more equitable distribution. We are in the pathway of the East Turn & the houses vibrate!

Name: Denise Karen Bahler
Address: 2533-103RD SE
Bellevue WA 98004

Phone: 425-453-1018

Let us know if you respond. We may need your help again later

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Comments:

Name: Rodd W. Wagner
Address: 1635 101 PL SE
Bellevue 98004

Phone: roddw@uswest.net
(252)637-1396

Let us know if you respond. We may need your help again later

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Comments:

Thanks for considering this input!

Name: TOM and GAIL HAMERLINCK
Address: 9715 SE 7th ST,
Bellevue WA 98004

Phone: (425) 990 1075

Let us know if you respond. We may need your help again later

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501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

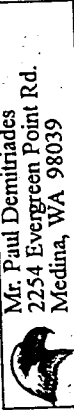
Phone: 425-454-9222
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Comments:



Mr. Paul Demetriades
2254 Evergreen Point Rd.
Medina, WA 98039

Name: *Paul Demetriades*
Address: *2254 Evergreen Pt. Rd.
Medina - WA - 98039*

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name: *Cynthia R. Carter*
Address: *P.O. Box 172
1221 Evergreen Point Rd.
Medina - WA 98039*

Phone

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Comments:

It's a fair way to share our growing popularity + population. Thank you.

Name: *Chris Crandall/Chris Hame*
Address: *7715 NE 12th
Medina 98039*
Phone: *425 451 3122*

Let us know if you respond. We may need your help again later

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Comments:

Over the water is best - split East turn if necessary -

EARL W. DAVIE

ANITA R. DAVIE

9010 N. E. 22nd P.L.
Bellevue, Wa. 98004

Phone

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Comments:

NORTH TO EAST DEPARTURES
FLY DIRECTLY OVER OUR
HOME STARTING @ 0600.

D.P. VANJANICE VAN BLARICOM

835-91ST LANE N.E.

BELLEVUE, WA 98004-4811

(425) 453-0082

Phone

Let us know if you respond. We may need your help again later

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Comments:

Make the changes NOW!

PAUL B. DEMITRIS, *

2254 EVERGREEN PT. RD

MEDINA, WA. 98039

(425) 453-8288

Phone

Let us know if you respond. We may need your help again later

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* Elected city council member

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Comments:

NO!
DON'T SPLIT INTO TWO PATHS & INCREASE NOISE IN NEARBY NEIGHBORHOODS.
PETERSON

Name

Address

BEAUX ARTS VILLAGES

Phone

Let us know if you respond. We may need your help again later

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Comments:

I have lived in Medina for 10 years and the constant early morning to late night aircraft noise disturbs the peace and quiet of mind. Why not split the noise and lessen our impact.

Name

Address



425-453-6343 (I can help)

Phone

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Good idea!

Name

Address

Mrs Connor M. Hammond
1413-100th Ave N.E.

Bellevue WA 98004-3523

(425) 454-1328

Phone

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Comments:

I would further suggest more than two paths to disperse noise - maybe direct a third route over the north end of Lake Washington.

Name Mr. Mrs. Andrew T. Stefan

Address 10620 SE 27th Place

Bellevue, WA 98004

Phone 425-453-1133

Let us know if you respond. We may need your help again later

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Fax: 425-454-8490

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Comments:

Name JAMES A LUTZ
Address 8416 NE 21st Pl
Clyde Hill, WA 98004

Phone (425) 452-8957

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Comments:

Subday mornings beginning very early in the am it is like Star Wars over head. Saturday seems almost as noisy. Please re-write paths & give us a break!

Name Diane Arnold

Address 8410 NE 27th Pl

Bellevue, WA 98004

Phone 425 454-8449

Let us know if you respond. We may need your help again later

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Comments:

OPAR & TURID GIDE
806 C.W. BLVD. N.E
BELLEVUE WA 98004

Name

Address

Phone

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Comments:

Less aircraft noise would be a welcome relief. Many other major U.S. airports already have strong restrictions concerning takeoff/climb patterns over residential areas.

Daphne Simon
8535 NE 26th St
Bellevue, Wa 98004

Phone

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Comments:

Excellent idea!
Let's share the noise with our south of I-90 friends & neighbors.

MATT & KATHY MATHEIS
10228 SE 16th ST
BELLEVUE WA 98004

Phone

Let us know if you respond. We may need your help again later

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Comments:

Being awakened at 5:40 am by jet engines - Ducks!!

WILLIAM SUHT
7750 NE 16th ST
MEDINA, WA 98039

425-454-6475
Phone

Let us know if you respond. We may need your help again later

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Comments:

Noise has gotten so loud that it frequently wakes us up.

Bruce Ries
Marilyn Ries
1845 90th Pl Ne
Clyde Hill, WA 98004-3221

(425) 454-5862 tel
454-1132 fax
Phone

Let us know if you respond. We may need your help again later

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Comments:

the noise of airplanes wakes us up at 5:30 AM every on Sundays!

Dorothy & Patrick Hawkins
2659 90th Ave
Clyde Hill
WA 98004

(425) 454 4267
Phone

Let us know if you respond. We may need your help again later

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Comments:

SUSAN F. TERRY MOSS
Name
4620 95th AVE N.E.
Address
YARROW POINT, WA 98004

Name

Address

Phone

Let us know if you respond. We may need your help again later

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Comments:

a split into 2 paths is a sensible idea

Name

Address

Phone

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non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."
Barbara Thral

Comments:

MARSHA THRAL
Name

2222 - 77th Ave NE
Address
MEDINA, WA 98039

425 - 454 - 8230
Phone



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Comments:

Name: Jennifer Leslie
Address: 10027 NE 28th Place
Bellevue, WA 98004
Phone: 425-803-0687

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Comments:

REDUCTION OF NOISE
& POLLUTION CONCERNS
SHOULD BE PRIMARY GOALS
OVER RESIDENTIAL AREAS.
Name: JOSEPH & ELIZABETH FOWLER
Address: 9827 NE 33rd ST
BELLEVUE, WA 98004
Phone: (425) 454-3585

Let us know if you respond. We may need your help again later

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Comments:

Name: Stephanie L. Wallach
Address: 7620 N.E. 12th STREET
MEDINA, WASHINGTON 98039
Phone: 425-455-5597

Let us know if you respond. We may need your help again later

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Comments:

Howard Meister

Name

405 84114 Ave. NE, Medina 98039

Address

425-451-7070

Phone

Let us know if you respond. We may need your help again later

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Comments:

Charles F. Lloyd

Name

9803 78th Ave. N.E.
Medina, WA 98059-1580

Address

Phone

Let us know if you respond. We may need your help again later

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Comments:

THE "SPLIT TURN" IS BETTER THAN EXISTING TURN. WE WOULD LIKE TO SEE FURTHER STUDY OF A WEST TURN FOR NORTH TAKEOFFS AND AVOID CITIES STILL FURTHER. THE R.H. TURN IS NOT A RULE JUST HISTORICAL USEAGE!

ROBIN + GERDA MIDDLETON

Name

Address

2501-100th Ave NE
BELLEVUE. WA. 98004

425-454-8054

Phone

Let us know if you respond. We may need your help again later

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Comments:

Central Noise Pollution!
Paul E. Zahler
Patricia Zandavich

Name

Address

9620 NE 29th Street
Bellevue WA 98004
425 635-0128
Phone

Let us know if you respond. We may need your help again later

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Comments:

When we moved here, it was much more peaceful. the plane noises are sometimes so loud, they drown out even the T.V. We would love to see an improvement. Thanks

Name

Address

Mrs. John Whitacre
9415 NE 21st Place
Clyde Hill, WA 98004
425-462-0721
Phone

Let us know if you respond. We may need your help again later

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Comments:

Sharon Snyder
Patricia Snyder
733-96th Ave NE
Bellevue WA
198004

Name

Address

Phone

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Comments:

Nancy Leigh
508 98th Ave NE
Bellevue WA
98009

Name

Address

Phone

Let us know if you respond. We may need your help again later

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Comments:

Please help reduce noise over Bellevue.
Thanks

Name

Address

Phone

Let us know if you respond. We may need your help again later

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DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Put the noise over an industrial area. It makes alot of sense! It is very noisy now.
The Peter Fowler Family
2605 100th AVE NE
Bellevue WA 98004

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
MEDINA, WA 98039
Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222
Fax: 425-454-8490

DETACH AND SEND TO:

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Comments:

We have lived in the same house for over 40 yrs. As the population has increased, so has the population Aircraft noise when the wind is from the north and I-90 traffic noise when the wind is from the south. Can't do much about I-90 but it would be nice if some of the aircraft noise could be eliminated.

Robert and Nancy Solibakke

2846 105th Ave S.E.

Bellevue, WA 98004-7435

(425) 454-0294

Let us know if you respond. We may need your help again later

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Comments:

CONCUR-
ANOTHER OPTION - LIMIT
DEPARTURES TO 9AM-9PM

MARYLYN AART

2201 86th AVENUE

Clyde Hill WA
98004

Let us know if you respond. We may need your help again later

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Comments:

ITS NOT RIGHT THAT ALL FLIGHTS SHOULD FLY OVER THE SAME NEIGHBORHOODS DAY AFTER DAY. THE FLIGHT PATTERN SHOULD BE SPREAD OVER OTHER NEIGHBORHOODS. THE CONSTANT NOISE IS NOT FAIR! IT'S EVEN DIFFICULT TO TALK OUTSIDE ON A NICE DAY.

Name Teresa

ED URQUHART

1632 - 92nd Ave N.E.
Bellevue, WA 98004

Phone 425-452-5675

Let us know if you respond. We may need your help again later

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Comments:

Name FASCAL MICHEL
Address 10610 SE 27th Pl.
Beaux Arts Village
WA 98004
Phone 425-455-4968

Let us know if you respond. We may need your help again later

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Comments:

Thank you for your just consideration!
Diane and Paul Rutherford
2895 94th Ave NE
Clyde Hill 98004
Phone 425-462-1204

Let us know if you respond. We may need your help again later

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Comments:

E. WILLIAM & LEONORA N. ESAIL
Name
10205 NE 20th PLACE
Address
Belleve WA 98004-2709
Phone 425-454-1834

Let us know if you respond. We may need your help again later

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Comments:

Let's be fair. The burden of aircraft noise solution should be equally shared, so no one community is impacted, as Medina has been.

Name: Mrs + Mrs H. Vernon Slippy
Address: 2515 Medina Circle
Medina, WA 98039

Phone: (425) 458-8253

Let us know if you respond. We may need your help again later

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Comments:

IS IT POSSIBLE THAT PLANES WOULD ROUTE OVER ELLIOTT BAY CANAL AREA TO MAKE THEM TURN AT THE UPPER END OF LAKE WASHINGTON WHERE THERE ALTHOUGH WOULD BE MUCH CLEARER?

Name: R. H. TATE
Address: 4000 W. 4th St
CLYDE HILL WA 98004

Phone: 425 454 8420

Let us know if you respond. We may need your help again later

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Comments:

THIS PROPOSAL IS EXCELLENT - NOT ONLY FOR SAFETY BUT FOR PERSONAL REASONS - THIS IS LONG OVERDO.

Name: CAROLYN TRIGG
Address: 200-99 B.N.E., #25
BELLEVUE, WA. 98004

Phone: 425/453-7636

Let us know if you respond. We may need your help again later

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Comments:

The noise is particularly bad during the summer when we are outside - so planes come in from the north

Name Denise Lane / Bruce Allen

Address 3340 Evergreen Point Road
Medina, WA 98039

Phone 425-453-8609

Let us know if you respond. We may need your help again later

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Michelle Jordan

Comments:

We are unfortunately unable to attend the meeting. Know that we truly feel the aircraft need to be rerouted.

Name Mark & Michelle Jordan

Address 2256 Killarney Way SE
Bellevue WA 98004

Phone 402-1728

Let us know if you respond. We may need your help again later

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Comments:

I encourage a decision by the Part 150 committee to pursue further alternatives to the East Turn.

Name Robert Loney

Address 1810 104th Ave SE
Bellevue, WA 98004

Phone 425-637-9593

Let us know if you respond. We may need your help again later

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Comments:

HERMAN H. GINSBERG
Name
Address
BETTY R. GINSBERG
9902 - NE 4th #6
BELLINGHAM, WASH. 98204

425-457-8243
Phone

Let us know if you respond. We may need your help again later

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DETACH AND SEND TO:

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I/we endorse the non-residential Industrial area must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by

2-8-00

Mailed endorsement of ECAAN to Block
Walter H. Kleiner
1725 98th N.E.
Bellevue, WA 98004

Comments:

Seems only equitable!
(send your mailings, like that one, earlier)

Walter H. Kleiner
1725 98th Pl. N.E.
Bellevue, WA 98004

425-454-1119
Phone

Let us know if you respond. We may need your help again later

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Comments:

MARK & Cindy Pigott
Name
Address
1031 Evergreen Pt. Rd.
Medina, WA 98039

425-453-3269
Phone

Let us know if you respond. We may need your help again later

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Comments:

This is a big problem early morning & late at night.

Name Bruce K Jones

Address 791 96th Ave SE
Bellevue, WA 98004

Phone 425 467 8304

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD
P.O. BOX 144
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Comments:

*This is perfect!
He couldn't say
it better. Please endorse
this proposal!! Please*

Name Mr. & Mrs. Ron Everich
2615 96th Avenue Northeast
Bellevue, Washington 98004

Phone 425-455-1194

Let us know if you respond. We may need your help again later

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Comments:

Name CHRIS EDE

Address 9010 PANTS DR. NE
BELLEVUE WA 98004

Phone 425 455 3531

Let us know if you respond. We may need your help again later

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Comments:

TRISHA NERNEY

Name

2438 78th NE

Address

MEDINA, WA 98039

425-462-1060

Phone

Let us know if you respond. We may need your help again later

CITY OF MEDINA
501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

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Fax: 425-454-8490

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Comments:

We have to have a reduction in current and future increased jet noise in our area. This plan sounds like a good option. I do endorse it.

Berber-Phillips

Name

8610 N.E. 17 St.

Address

Clyde Hill, WA 98044

(425) 454-8590

Phone

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

This seems to be a fair solution to me. I hope you will concur.

Name

SUE B. DRAIS
393 - 101st Ave. S.E.
Bellevue, WA 98004

Address

425-462-9897

Phone

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Comments:

Bv. Mercer Islands will fight this, equity should give Medina ^{part of} the air noise we have suffered for decades! Be fair.

Mary Ellen Paulman

1415 80th Av. NE

Medina WA 98039

Phone

DETACH AND SEND TO:

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Comments:

I favor the Split Turn

1. It is doable
2. It saves the airlines money
3. It is equitable to all.

Henry Paulman

1415 80th Ave. NE

Medina, WA

98039-3129

425-455-3311

Phone

DETACH AND SEND TO:

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Comments:

We are very aware of the air traffic over our home.

Bob & Nancy VanDerHorn

Craig VanDerHorn

2734-103rd Ave SE

Bellevue, WA

98004

425-455-2654

Phone

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Comments:

Name: Chris E Jane Baker
Address: 3026 93rd PL NE
Clyde Hill, WA 98004

Phone: (425) 453-7457

Let us know if you respond. We may need your help again later

CITY OF MEDINA
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Fax: 425-454-8490

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Comments: also

The noise of an airplane is deafening, all conversation must stop for the minimum 15 min they go over

Name: Asher White
Address: P.O. Box 194 Medina, WA 98039

Phone

Let us know if you respond. We may need your help again later

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Comments:

As a teacher for 20 yrs. @ Sacred Heart School on Clyde Hill & as a Clyde Hill resident I'm all too familiar w/ jet noise pollution. I've had to stop teaching & wait for jets to pass to be heard by my students & much sleep interrupted @ home.

Name: Frank & Joan Shaver
Address: 9245 Pointz Drive N.E.
Clyde Hill, WA. 98004

Phone: (425) 454-6537

Let us know if you respond. We may need your help again later

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Comments:

*The sooner the better -
Ridiculous to have the
flight over residential
areas.*

Name Mr & Mrs James R. Leitt
Address 1103 Lake View Blvd, NE
Bellevue, WA 98004
Phone 425 454 2136

Let us know if you respond. We may need your help again later

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Comments:

(Blank comment box)

Name _____
Address _____
Claire / Michael Gordon
706 Shoreland Drive
Bellevue, WA 98004-8742
Phone _____

Let us know if you respond. We may need your help again later

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Comments:

*Please move
equitably distribute
the noise burden!
Thank you -
M/M W.W. Smith*

Name M/M W.W. Smith
Address 1635-13th Ave NE
Medina, WA
98039
Phone 425-454-0269

Let us know if you respond. We may need your help again later

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DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name Wes & Beverly Brandt

Address 1012 103rd Ave. SE

Belleuve, WA 98004

Phone 425-688-1990

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

Name Sue-Erin Stone

Address 3015 98th Ave

Cluda Hill, WA 98004

Phone 425-8119

Let us know if you respond. We may need your help again later

CITY OF MEDINA

501 EVERGREEN POINT ROAD

P.O. BOX 144

MEDINA, WA 98039

Or email at: dschulze@ci.medina.wa.us

Willing to help? Call Medina City Hall

Phone: 425-454-9222

Fax: 425-454-8490

DETACH AND SEND TO:

Mr. Michael West, Barnard Dunkelberg & Co., 1122 East Pike St, #1286, Seattle, WA 98122 as soon as possible.

I/we endorse the proposal of routing aircraft over non-residential areas (particularly the Duwamish Industrial area and Elliott Bay) and when they must fly over residential areas they should be spread out or, at a minimum, split into two paths as proposed by the "Split East Turn."

Comments:

None, the information provided in the pamphlet adequately explains the situation.

Name Tony N. TAKAHASHI

Address 1111 102nd AV. NE #323

Belleuve, WA 98004

Phone (425) 462-7262

Appendix Nineteen. Port Resolution 3257

RESOLUTION NO. 3257

A RESOLUTION of the Port Commission of the Port of Seattle implementing Measure M2d -Mobile Homes, of the 1993 amendments to Federal Aviation Regulation (FAR) Part 150 Noise Remedy Program at Seattle-Tacoma International Airport

WHEREAS, in January, 1985, the Port of Seattle Commission adopted Resolution No. 2943, as amended, the Noise Remedy Program for Seattle-Tacoma International Airport (Airport), consisting of noise mitigation measures pursuant to Federal Aviation Regulation (FAR) Part 150; and

WHEREAS, on July 13, 1993, the Port Commission adopted Resolution No. 3144 amending the Airport's FAR Part 150 Noise Remedy Program; and

WHEREAS, the Federal Aviation Administration approved the 1993 amendments effective May 18, 1994; and

WHEREAS, Measure M2d of the 1993 amendments, Mobile Homes, "Reduction of Noncompatible Mobile Homes in the Airport Environs by Providing an Incentive to Change Land Use," provides that the Port may assist mobile home park owners wishing to convert their property to Airport compatible land uses, by providing funds to move the mobile homes outside the Noise Remedy Program boundaries subject to the following conditions: (a) the property is converted to an Airport compatible land use, (b) the responsible jurisdiction requires the park owner to develop a relocation plan for the residents of the park, (c) the park owner grants to the Port an aviation easement over the property, agrees to restrict the uses of the property to Airport compatible land uses, and agrees that Port funds will be used for the relocation of the mobile homes, and (d) the responsible jurisdiction agrees to restrict development of the property to Airport compatible uses; and

WHEREAS, Measure M2d further requires that the Port develop procedures for implementing this program; and

WHEREAS, the owner of Marine View Mobile Home Park in the City of SeaTac has agreed to convert the park to an Airport compatible land use and closure of the park will require the removal of approximately 38 mobile homes;

NOW, THEREFORE, BE IT RESOLVED by the Port Commission of the Port of Seattle that:

Section 1. This program shall be known as "The Mobile Home Airport Compatibility Program."

Section 2. All mobile park owners interested in participating in the Port's Mobile Home Compatibility Program shall enter into all necessary agreements with the Port agreeing to: (a) convert use of the property to Airport compatible uses; (b) restrict all uses on the property that are Airport incompatible pursuant to Appendix A, Table 1, "Land Use Compatibility With Yearly Day-Night Average Sound Levels," of FAR Part 150, (c) grant an avigation easement to the Port over the property, substantially in the form of attached Exhibit A, (d) provide a copy of the relocation plan approved by the jurisdiction in which the property is located, (e) provide evidence that the jurisdiction with land use authority over the property has agreed to restrict development on the property to Airport noise compatible uses, and (f) use all funds paid by the Port pursuant to such agreement solely for the purpose of moving the mobile homes off the property, and (f) reimburse to the Port any funds not used for the removal of the mobile homes.

Section 3. As consideration for the park owner's agreement in accordance with Section 2, the Port shall deposit into an escrow account established under an agreement pursuant to Section 2, a total of

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Six Thousand Dollars (\$6,000.00) for the removal of each mobile home leasing a lot at the park.

Subject to the provisions of Section 5, the Port may increase this amount to a total not to exceed Twelve Thousand Dollars (\$12,000.00) per mobile home.

Section 4. (a) Mobile home owners occupying spaces under a lease or other rental agreement in a park that is the subject of an agreement pursuant to Section 2, must meet the following requirements in order to be eligible for participation in the program and receive reimbursement towards the costs of removing the mobile home from the park: (i) submit proof of ownership of the mobile home, (ii) submit proof of legal occupancy at the park as of May 26, 1999, (iii) certify that the mobile home, decks, awnings, skirting and any associated sheds have been removed from the park, (iii) certify that the mobile home has been moved, in accordance with state and local laws, to an area outside the 1998 baseline noise contour (65 Ldn), and (iv) where the mobile home cannot be moved because of its condition, certify that it has been properly disposed of at a local landfill.

(b) Eligible mobile home owners submitting documentation, reasonably sufficient to the Port, that the actual cost of removing their mobile home exceeded Six Thousand Dollars (\$6,000.00), will be reimbursed for actual costs not to exceed Twelve Thousand Dollars (\$12,000.00).

(c) Mobile home owners may choose to assign their approved claim for costs of removal directly to the company with whom the mobile home owner contracts for removal of the mobile home.

(d) Tenants of mobile home owners leasing lots at the park are not eligible to submit claims or receive payment under this program.

Section 5. The Port shall establish efficient procedures for processing claims for payment of mobile home removal costs to eligible mobile home owners.

Section 6.

In the event a mobile home owner abandons the mobile home at the park, or is unable to meet the eligibility requirements of Section 4, the park owner may apply to the Port for approval to withdraw those amounts authorized pursuant to Section 5 for removal of the mobile home. In seeking such approval from the Port, the park owner must demonstrate that (a) there are no liens against the particular mobile home, or (b) holders of liens against the particular mobile home have been given notice and an opportunity to claim the mobile home; provided that such lienholders shall not be eligible to receive Port payments for removal of the mobile homes from the park. The park owner shall, in its agreement with the Port, hold harmless and indemnify the Port against all claims arising from the park owner's removal of mobile homes from the park for which the Port approves payment of moving costs.

Section 7.

The Port shall provide advisory services to all residents of mobile home parks subject to an agreement pursuant to Section 2. Such advisory services shall include information about other mobile home parks, area apartments and elderly care facilities. The Port shall coordinate such advisory services with the jurisdiction where the park is located in an effort to avoid duplication where the local jurisdiction also provides advisory services for residents of mobile home parks.

Section 8.

This program shall be administered by the Port's Aviation Noise Remedy Office. The Manager, Noise Remedy, is hereby authorized to enter into all agreements required under this resolution for the implementation of the program, including all agreements with mobile park owners pursuant to Section 2. Monetary authorizations for implementation of the program and agreements authorized thereunder may be approved as part of the Port's budget process or presented to the Port Commission as individual requests for monetary authorization.

ADOPTED by the Port Commission of the Port of Seattle at a regular meeting thereof,

held this _____ day of _____, 1997, and duly authenticated in open session by the signatures of the Commissioners voting in favor thereof and the seal of the Commission.

Port Commission

Appendix Twenty. Forecast Appendix

APPENDIX A

FORECAST REGRESSION METHODOLOGY

In preparing an aviation forecast, numerous methodologies are available. The most common method is the use of regression equations that, based on past activity, explained changes in various types of airport activity. In the forecasting process, total passengers and enplaned passengers are forecast. Then based on average aircraft sizes for categories of passenger service, aircraft operations are predicted. The following summarize the regression methodology.

PASSENGER FORECASTS

In forecasting passenger activity, activity was categorized as Domestic and International.

Domestic Enplanement Forecast

The domestic passenger enplanement forecast model was developed using multiple regression analysis in which mathematical relationships were developed between historic domestic enplaned passengers and various parameters known to influence air passenger travel. A number of such relationships were examined, based on parameters such as population, employment, and personal income in the Puget Sound Region; average Sea-Tac airfare; per capita income and unemployment rate in the Puget Sound Region; and gross state product for Washington. The Sea-Tac airfare (in 1992 cents per passenger mile) was estimated from data contained in U.S. Department of Transportation and U.S. General Accounting Office studies, as are listed in Table 3-1. Both linear and logarithmic relationships were tested.

After analyzing dozens of potential equations, the following model was selected for forecasting domestic enplanements at Sea-Tac because it is based on parameters which are known to affect air travel demand and the correlation and other statistical tests of the relationship were excellent:

Ln of domestic enplaned passengers =

- 3.304

- + 1.283 x Ln of personal income in Puget Sound region (in millions 1982 dollars)
 - 0.558 x Ln of average Sea-Tac airfare (in 1992 cents per passenger mile)
- (where Ln equals natural logarithm)

TABLE 3-1
FORECAST OF PASSENGER ENPLANEMENTS
AT SEATTLE-TACOMA INTERNATIONAL AIRPORT: 1997-2010

	Actual	Forecast		
	1997	2000	2005	2010
Forecasts				
Forecast (Prepared in 1996) [b]				
Domestic Enplanements (millions)		12.4	14.0	15.7
International Enplanements (millions)		1.3	1.7	2.2
Total Enplanements (millions)		13.7	15.7	17.9
Forecast Model Parameters				
Personal Income in Puget Sound Region (billions of 1982 dollars)	45.9 [c]	55.8	60.7	65.6
Domestic Airfare per Passenger Mile (1992 cents)	10.34	10.10	9.86	9.63

- [a] Source: Technical Report No. 5., Final Forecast Report, August 1994, for Sea-Tac Master Plan Update
- [b] Source P&D Aviation
- [c] Estimated
- [d] Source: Puget Sound Regional Council

The model performed well in all statistical measures. The coefficient of determination (R^2) of this model was unchanged from the model used in the Master Plan (0.99), indicating the model explains 99 percent of the observed variation in domestic air passenger enplanements between 1970 and 1995. The independent variables, as measured by the t-statistic, were found to be statistically significant predictors of air passengers. Further, the predictive power of the overall model, as measured by the F-statistic, was also statistically significant.

International Enplanement Forecast

Regression analysis was used to develop a model to forecast international enplanements. After analyzing a number of potential equations, the following formula was selected for the Master Plan because it had the best statistical measures of reliability and represents a logical relationship between international enplanements and a primary measure of economic activity in the international passenger service market:

Ln of international enplaned passengers =

$$\begin{aligned} & - 16.43 \\ & + 1.884 \times \text{Ln of gross state product of the three state area} \\ & \quad \text{(Washington, Oregon and Idaho) in constant 1992 dollars} \\ & \quad \text{(where Ln equals natural logarithm)} \end{aligned}$$

The model performed well in all statistical measures. The coefficient of determination (R^2) of this model was 0.93, indicating the model explains 93 percent of the observed variation in international air passenger enplanements between 1970 and 1995. The independent variables, as measured by the t-statistics, were found to be statistically significant predictors of air passengers. Further, the predictive power of the overall model, as measured by the F-statistic, was also statistically significant.

TOTAL ENPLANED PASSENGER FORECAST

Total passengers represent the sum of domestic and international passengers.

Origin-Destination Passengers

An estimate of domestic air carrier origin-destination passengers were obtained from the U.S. Department of Transportation 10 percent ticket sample survey. The origin-destination percent averaged 72.5 from 1976 to 1992 and this percentage is projected to remain relatively consistent through 2010.

For the remaining three categories of passengers (international to Canada, international other than Canada and Commuter), no reliable historical origin-destination data exist. For these passenger categories, the origin-destination

percents estimated in the Flight Plan Phase I study were used (TABLE 3-8). Overall, 68 to 69 percent of Sea-Tac passengers are estimated to be origin-destination passengers.

AIR CARGO FORECAST

The air cargo forecast was also developed using a regression analysis model. Many model forms and variables relating to air cargo tonnage were evaluated, including: Washington State gross product; Puget Sound income; Puget Sound employment; Puget Sound population; and Puget Sound per capita income.

The following Master Plan model was selected because it had the best overall statistical measures of reliability:

Ln of air cargo (in thousands of metric tons) =

$$\begin{aligned} & - 17.597 \\ & + 2.949 \times \text{Ln of Puget Sound population (in thousands)} \\ & \text{(where Ln equals natural logarithm)} \end{aligned}$$

With this model, 98 percent of the historical variation in air cargo tonnage is explained.

The air cargo model analyzed data for the period 1985 to 1993 (9 years). Air cargo has been very cyclical at Sea-Tac, increasing steadily in the early 1970s, remaining almost constant between the mid-1970s and mid-1980s, and increasing again after 1985. From 1985 to 1993 cargo tonnage at Sea-Tac grew at an average annual compounded rate of 7.8 percent. It was felt that the period after 1984 is the most representative period for basing future air cargo projections, because it is most indicative of current air freight trends and is representative of the growth expected in future air cargo volume.

Appendix Twenty-One. SEPA Documentation



SEPA Determination of Non-Significance (DNS) of Proposed Action

Part 150 Noise Compatibility Plan

The Port of Seattle has completed an environmental analysis, including review of pertinent and available environmental information and preparation of an Environmental Checklist for the following proposal.

Description of the Proposed Action: Commission approval and adoption of the Part 150 Noise Compatibility Plan for Seattle-Tacoma International Airport. The Plan consists of the following recommended actions:

1. Establish Noise Barriers at the north cargo area, based on the planned design of this area;
2. Complete a feasibility and siting study on the development of a Ground Run-up Enclosure (GRE);
3. Modify Existing Maintenance Run-up Regulations and Fines;
4. Install ground power and pre-conditioned air at existing and new gates to minimize use of auxiliary power and ground power units;
5. Implement a nighttime preferential runway use program that would maximize use of north flow and Elliott Bay Corridor upon completion of all requisite studies, including additional FAA environmental review;
6. Development of a South Flow Elliott Bay Arrival Procedure upon completion of all requisite studies, including additional FAA environmental review;
7. Encourage FAA to develop FMS procedures for all north flow, west bound corridors and to assign all FMS equipped aircraft, currently using those corridors, an FMS procedure upon completion of all requisite studies, including additional FAA environmental review;
8. Work with the FAA to have aircraft intercept the glide slope as far away from the Airport as possible upon completion of all requisite studies, including additional FAA environmental review;
9. Develop a Fly Quiet Program;
10. Establish Follow-on Public Committee – would establish a committee comprised of interested citizens and users;
11. Acquisition of residential lands within the Approach Transition Zone (ATZ), relocation of residents, and demolition of acquired structures;
12. Sound insulation of owner occupied multi-family units within the 70 DNL;
13. Sound insulation of schools within the 65 DNL;
14. Acquisition of Mobile Home Parks within the 70 DNL and relocation of residents; continuation of relocation assistance to mobile home owners in parks located in 65 DNL that are voluntarily closed by the park owner;
15. Modify building codes to require builders of new homes built in 65 DNL to provide adequate sound insulation and to require new schools built in 65 DNL to meet appropriate sound insulation standards; and
16. Amend Community Plans and Zoning Ordinances to note acquisition and relocation plans and ensure that lands can be converted to compatible commercial uses.

Location of Proposed Action: Several actions will occur within the secure portions of the Airport, while other actions will occur within the surrounding communities.

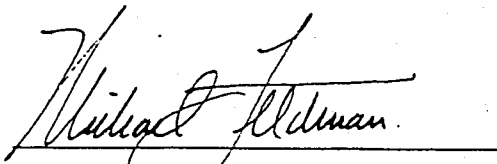
Lead Agency: Port of Seattle (SEPA File No. 00-20)

Determination: This environmental evaluation has been prepared following the provisions of the Washington State Environmental Policy Act (SEPA) under Chapter 43.21C, Revised Code of Washington (RCW), Chapter 197-11, Washington Administrative Code (WAC), and Resolution 3028, Port of Seattle SEPA Policies and Procedures. As lead agency, the Port has determined that the proposal will not have a probable significant adverse impact on the environment. Therefore, an Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(c).

Supporting Information: Information used to reach this determination, and applicable State laws and Port of Seattle policies, regulations and procedures, are available for public review at the Port of Seattle office at: (1) Engineering Services Department, Second Floor Bid Counter, Pier 69, 2711 Alaska Way in Seattle or (2) Port of Seattle office, 17900 International Blvd., Suite 401 in the City of SeaTac. Any questions relating to this determination or to the proposed action should be referred to David McCraney, Environmental Program Manager, Port of Seattle, P.O. Box 1209, Seattle, WA 98111, Tel. 206-728-3193.

Public and Agency Comment: No action will be taken on this proposal until 5:00 pm on November 3, 2000 during which time public and agency comments will be received by the Port. Following the fourteen day review period, the Port will (1) formally adopt this Determination of Non-Significance; or (2) clarify or revise the proposal; or (3) complete additional environmental analysis, as appropriate. The Port will receive public and agency comments until 5 pm on November 3, 2000. Please refer questions and comments about this determination of the proposal to David McCraney at the telephone and address above. Comments are also received on the Port of Seattle electronic mail Internet address at SEPA.p@portseattle.org. Provide your mailing address when submitting comments to the electronic mail Internet address.

Appeals: This SEPA DNS determination may be appealed by filing a writ of review in King County Superior Court within twenty-one (21) days of the date the Port formally adopts this determination pursuant to Port of Seattle Resolution No. 3211.



Michael Feldman
Director, Aviation Facilities
Port of Seattle, SEPA Responsible Official
October 20, 2000

Appendix Twenty-Two. Funding Paper

AIRPORT FUNDING

WORKING PAPER

One of the incentives for airports to undertake a Part 150 Noise Compatibility Planning Study is the availability of funding allocated for noise projects within the Airport and Airway Improvement Program (AIP)^{1/} or by Passenger Facility Charge (PFC) funds. Airports that have completed and received approval for their Noise Compatibility Plans may access the noise portion of the AIP. Over the years, major air carrier airports have also sought and developed additional funding mechanisms. The purpose of this working paper is to discuss the possible sources and availability of funding for noise compatibility projects:

- *Airport-related Funding Sources*
- *Port of Seattle Funding Sources*
- *Local, State and Federal Funding Sources*

The following paragraphs briefly describe the funding mechanisms available to airport operators.

1. Airport Related Funding Sources

In general airports operate as an enterprise fund, where only sufficient revenue is collected to offset the expenses of operating, maintaining and improving the facility. Funding can be characterized by the following sources:

- Airline rents and charges
- Airport and Airway Improvement Program/Trust Funds
- Passenger Facility Charge funds
- Bond funds
- Other funds

As a general rule, all airport revenue must be used on-airport or in support of direct airport needs. The issue of off-airport revenue diversion (the use of airport generated funds for off-airport municipal or regional purposes) is highly contentious and has been the cause of significant litigation over recent years. The most visible and on-going of these cases involves Los Angeles International Airport, a department of the City of Los Angeles. A desire by the City to use airport funds to pay for certain city services motivated the airlines to sue the City of Los Angeles over appropriate cost accounting methods in the setting of landing fees. This suit also triggered a Congressional mandate for FAA to promulgate Revenue Diversion Regulations.

Based on the Port's plan of finance, funds associated with implementing the Master Plan Update (capital improvement plan, including the completion of the sound insulation program) anticipate funding from the following sources:

^{1/} The AIP refers to the Trust Fund that was created in the 1970s to aid in funding improvements at Airports. Thus trust fund is fueled by a 10% tax on airline tickets and goods imposed by the Federal government.

- Existing bonds - 54%
- PFCs (Passenger Facility Charge) – 24% (including PFC backed bonds and increased PFC)
- AIP (Airport Improvement Program) – 9%
- ADF (Airport Development Fund) – 11%
- Other - 3%

The following sections summarize the revenue opportunities and funds available.

1.1 Airline Rents and Charges

In 1999, the Port Aviation Division received about \$174 million in revenue, including almost \$79 million from airline rents and charges, and \$95 million from non-airline sources. Airline fees at Sea-Tac Airport are guided by the Basic Airline Lease Agreement (BALA), an agreement between the Port and airlines concerning the use and collection of rents and charges at the Airport. This agreement is being re-negotiated by the Port as the present agreement expires after 30 years in 2001. Airlines not signatories of the BALA operate on month-to-month operating agreements. These agreements also give the airlines a process for endorsing future development at an airport, often called the Majority-In-Interest (MII) votes. All revenue generated subject to the BALA must be used to offset the cost of the operation and maintenance of airport facilities. Based on the terms of the BALA, noise abatement activities are not funded by airline rents and charges.

At Sea-Tac Airport, the BALA created the Airport Development Fund (ADF) that enables the Port to expend funds for projects of its discretion that do not require airline approval. For the year 2000, the ADF represents 10 percent of total revenues (\$20 million annually). All monies assigned to the ADF have been committed to implement the Port's Master Plan through the year 2010.

1.2 Airport Improvement Program (AIP)

The AIP is derived from fuel and ticket taxes and is allocated by the Federal Aviation Administration to airports largely through formulas based on the amount of activity at the Airport. The Airport Improvement Program (AIP) is authorized at \$2.475 billion in FY00; \$3.2 billion in 2001; \$3.3 billion in 2002 and \$3.4 billion in 2003. Even though funds are authorized, they must be appropriated by Congress each year. AIP funds are eligible for certain federally approved projects and carry with them many "grant assurances" imposed by FAA. Funding within the AIP is allocated into two categories: entitlement (based on the number of passengers, with a cap for airports imposing a PFC), and discretionary. Currently, 34% of the discretionary portion of AIP is allocated for noise purposes (representing \$208 million in 2000 to be allocated to all airports). Discretionary funds are available for use at the discretion of the FAA Administrator, and represent 33 percent of the trust fund, thus funds allocated for noise represent about 11% of AIP in 2000. **Figure 1** shows the allocation of the AIP funds while **Figure 2** shows the allocation of PFC funds, as reported by the Airports Council International for airports using these funds.

Figure 1 AIP Grant Allocations (nationwide)

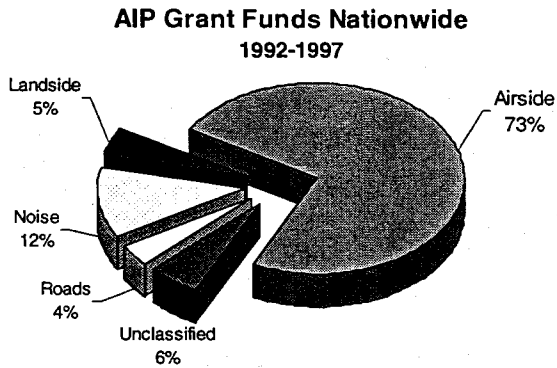
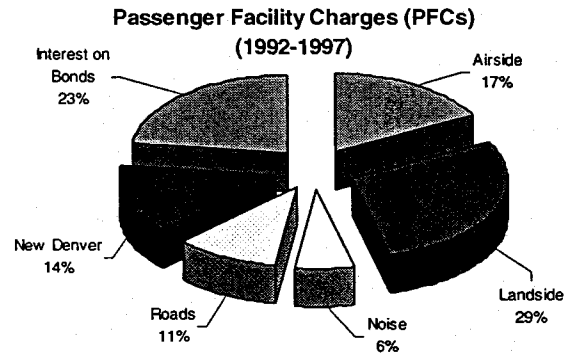


Figure 2 – PFC Allocation (nationwide)



In 1999, the Port of Seattle received \$27 million dollars from the AIP -- about \$4 million from the entitlement program and \$23 million from the discretionary funds. Included in this funding was \$5 million that was used to implement noise programs (the sound insulation program). During the mid-1990s, the FAA began to restrict access to noise funds by individual airports, due to the high demand for these funds. Today, a maximum of about \$5 million annually will be granted to an individual airport sponsor. Figure 3 shows the Port's use of AIP and PFC funds through 1999.

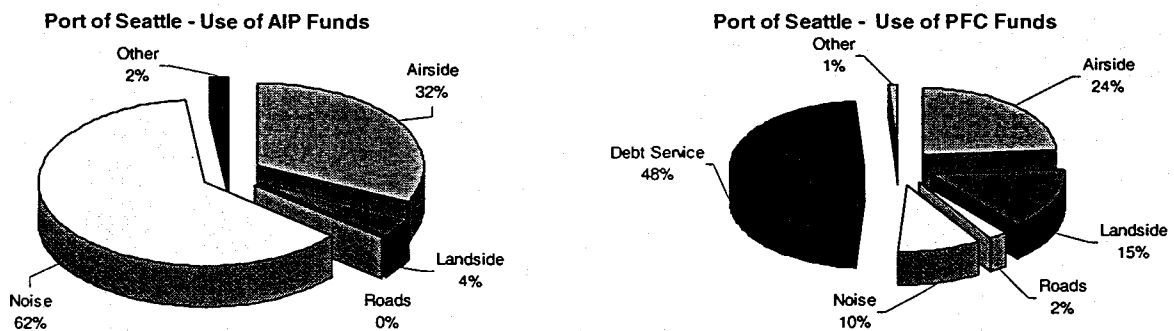


Figure 3 – Port of Seattle Use of AIP and PFC Funds

1.3 Passenger Facility Charges (PFC)

With increasing demands for AIP funds, airports began discussions during the 1980s to create a passenger-related fee. Before the PFC, passengers operating from the larger airports were contributing more to the trust fund than was being returned to the airports for their development needs. In 1989, Congress enabled airports to collect a fee, up to \$3.00 per passenger departing from the airport, for approved purposes. Most large airports levy a PFC to offset airport development needs. Although airports have somewhat more flexibility in designating projects to be funded through PFCs, actions included in the PFC must also be approved by FAA. Recognizing the airport development needs, over the last few years

Congress has been debating increasing the PFC from \$3.00 to as high as \$6.00. Recently enacted legislation (AIR-21)^{2/} has increased the authorization for PFCs from \$3.00 to \$4.50.

Airports can also issue bonds backed by revenue to be collected through PFCs. The Port issued \$260 million in PFC-backed bonds in 1998.

The Port plans to use the next 10 years of PFCs to implement the Master Plan Update and anticipates its use of \$75 million for existing and future noise abatement projects.

1.4 Bond Funds

Perhaps the most common source of funds for large airport projects is the capital bond markets. General Airport Revenue Bonds are issued by the Port, backed by Port revenue, to fund capital improvement projects at Sea-Tac. To date, a total of \$20 million in revenue bonds have been used to implement noise projects.

1.5 Other Funds

In general the only source of other funds available to the Aviation Division are funds to implement capital projects through third parties. One benefit of the use of third party funding is that it frees up the other sources of funding available to the Port. However, third party funding is unlikely to be used for noise projects as, except in the case of transitional land uses or acquisition and re-development, these types of projects do not generate revenue for the third party.

2. Port of Seattle Funding Sources

Separate from airport funds, the Port of Seattle also has access to other funding mechanisms

2.1 Tax Levy

The Port of Seattle is authorized under Washington State law to levy property taxes within King County for general Port purposes. The allowable amount of the Tax Levy is generally subject to two limitations: 1) the total levy rate may not exceed \$0.45 per thousand dollars of assessed value; and 2) annual increases in the amount of the levy are restricted to the lesser of inflation or 6%. The annual increase in the allowable levy is based on the amount of taxes that could have been levied in the previous year, even if the Port did not levy the full amount.

The Tax Levy is available for general Port purposes, but may not be used to pay debt service on Revenue Bonds. By policy the Port of Seattle uses the levy solely for Marine-related capital expenditures and community investments such as the Port JOBS program. No tax levy dollars are used for the airport. Since 1992 the Port Commission has held the amount of the Tax Levy flat at \$35.6 million per year. In 1999 the budgeted levy rate is

^{2/} At the time of this writing, the legislation had been approved by Congress and the Senate, and was awaiting signature of the President.

\$0.24/\$1,000 of assessed value. The Port's Tax Levy comprises less than 3% of total King County property taxes.

The Port Commission has established the following criteria for use of tax levy: 1) to fund projects with a long lag time between capital costs and project revenues or the project's financial return will not support revenue bond financing (i.e. the internal rate of return is less than the current costs of debt); and 2) project's which generate significant economic or other community benefits for taxpayers. Each year, a tax levy request will be made for the funding of specific capital projects, and other community investments. Once designated as levy funded, projects will remain so through completion.

2.2 General Obligation or Revenue Bonds

The Port of Seattle may issue General Obligation (G.O.) Bonds, which are backed by the full faith and credit of the Port, including the Tax Levy. Due to their broader pledge, G.O. Bonds can be issued at lower interest rates than Port Revenue Bonds. However, the total amount of the Port's G.O. Bonds outstanding is restricted by statutory limitations based on the total assessed value of property in King County.

Section 1.5 also discusses this funding mechanism.

2.3 Industrial Development District Levy

The Port's Industrial Development District funding is equivalent to a third party funding mechanism. Relative to the noise program at Sea-Tac, this item might be possible to fund actions that result in re-development of lands purchased for noise purposes, as long as the land is re-developed for commercial development purposes.

3. LOCAL, STATE AND OTHER FEDERAL FUNDING SOURCES

Local funding sources are private funds or funds from local agencies and organizations. This review examined a number of possible mechanisms, however, in light of the passage of Initiative 695,^{3/} great uncertainty exists concerning the availability of funds at a local or state level.. Possibilities include:

Washington State Community, Trade and Economic Development (CTED), a state agency, was created in 1994 to strengthen community social service programs, provide affordable housing, assist companies to export their products, and promote Washington's heritage and scenic beauty. The Agency administers more than one hundred programs that are either federally or state funded. Approximately ninety-five percent of the funding it receives is passed on to local organizations.

- CTEDs Growth Management Program provides assistance and guidance for planning under the Growth Management Act (GMA), as well as support for the Land Use Study

^{3/} I-695 is a statewide initiative that passed in November 1999 that reduces the fee collected for automotive licensing and requires governments to submit any proposed new or increased taxes to a public vote.

Commission. Under the GMA, technical and financial resources are available from Washington State Community, Trade and Economic Development (CTED) to help local governments develop county-wide policies, comprehensive plans, and development regulations. Funding could be pursued by local jurisdictions to aid in land use planning, and implementing land use recommendations of the Part 150 Study.

- The Community Development Block Grant (CDBG) General Purpose Grants are made available annually through a competitive application process to assist cities, towns, and counties in carrying out significant community and economic development projects that principally benefit low- and moderate-income persons. Depending on congressional action, approximately \$7 million in grant monies is normally available each funding cycle under the General Purpose Program. The maximum amount for a single grant is \$750,000.
- Title II of the Home Investment Partnerships Act provides funding from HUD to states and local governments to implement housing strategies that address the affordable housing needs of low- and very low-income individuals and families. Assistance through this program, called HOME, might be available concerning issues raised by the mobile home relocation.

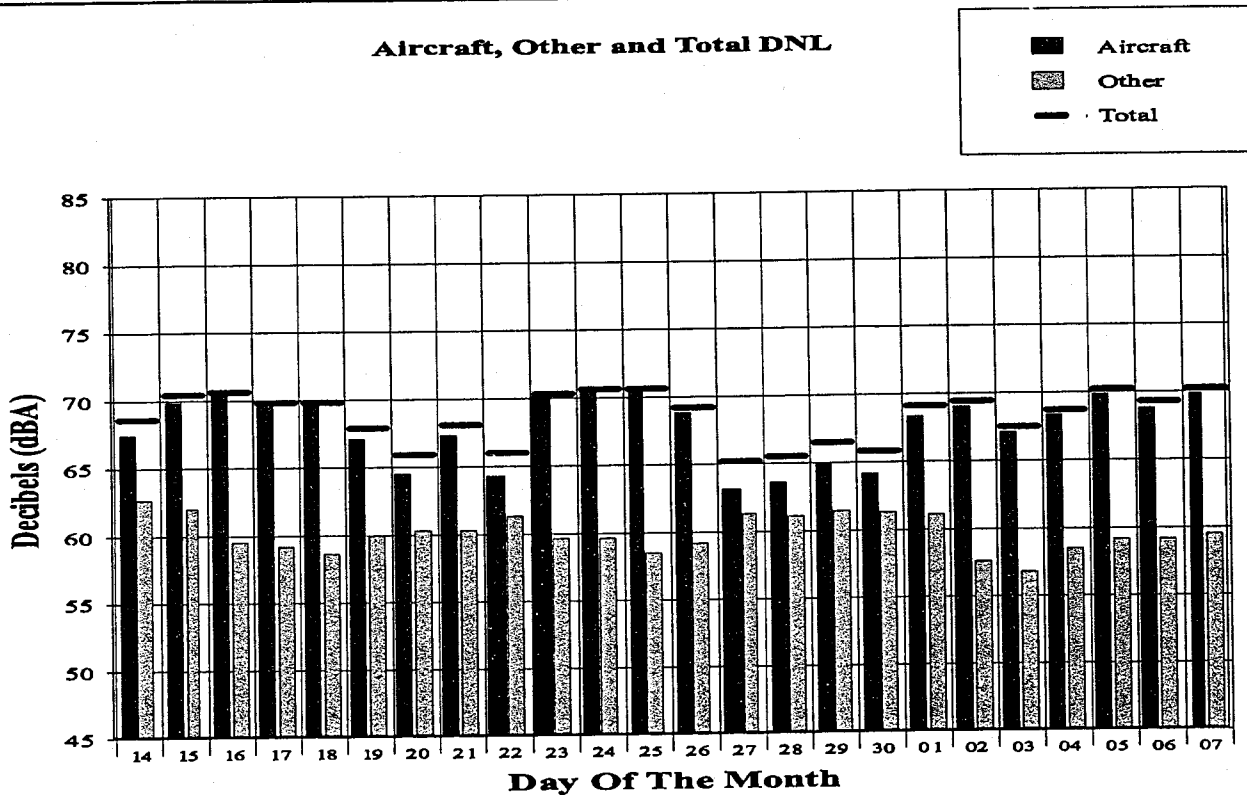
Funds for these eligible activities are distributed on a competitive basis. Eligible organizations are local governments, housing authorities, and nonprofit organizations. HOME dollars are awarded as grants, deferred loans, and amortized loans. Project funded by this program include: permanent rental housing projects for the chronically mentally ill, seniors, farmworkers, and other very low-income individuals and families, transitional housing for homeless families with children, etc.

- Mobile/Manufactured Housing Relocation Program: Manufactured home relocation assistance is provided on a first come, first served basis, subject to availability of funds. If an individual owned their manufactured home and lived in a park that closed or was converted to another use after June 30, 1991, they may be eligible for assistance. Financial assistance for residents of communities closing after December 1995 is available only to persons who maintain ownership of their homes.
- Washington State Department of Transportation – Transportation Economic Partnership Division – provides innovative financing services and consultations to develop and apply innovative financing approaches to create new funding opportunities for state transportation projects. However, in light of I-695, their 2000 business plan anticipates focusing on major surface transportation safety and congestion issues.

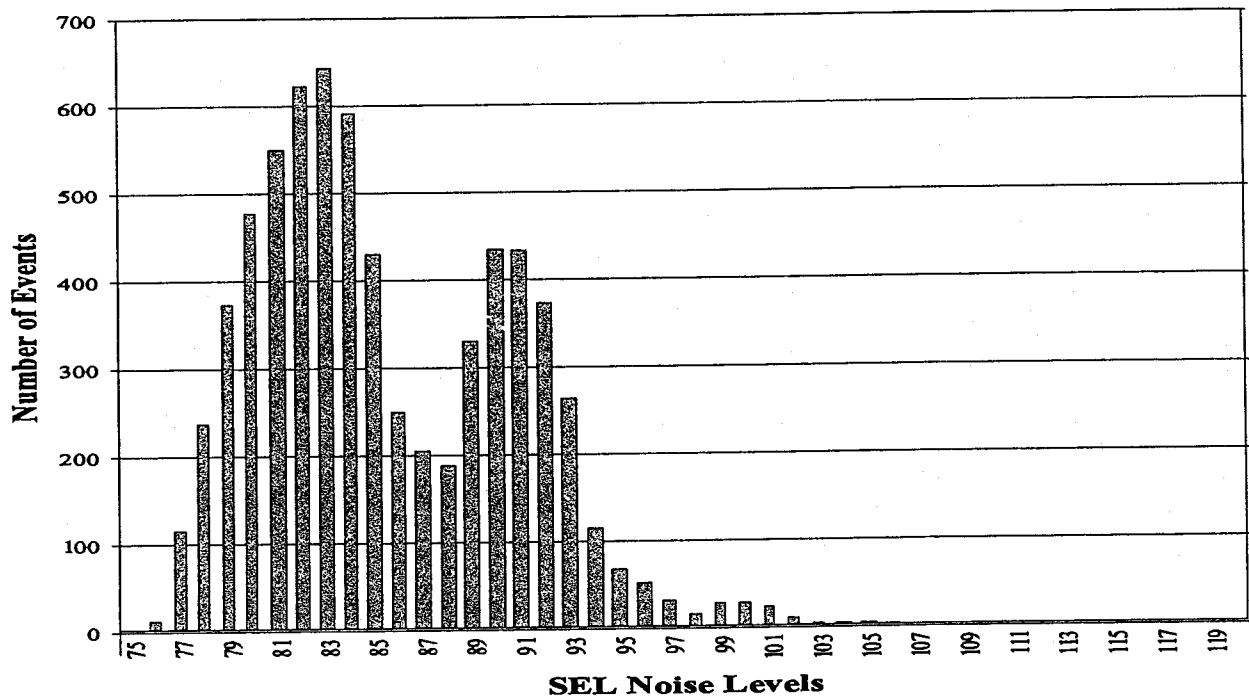
Federal Agencies other than the FAA provide funding assistance for a myriad of actions and possibilities. However, because the effect being remedied is related to aviation, it is unlikely that funds would be a high priority of those agencies, unless the actions also remedied other issues of interest to those respective agencies, such as the housing programs offered by CTED.

Appendix Twenty-Three. Additional Noise Data

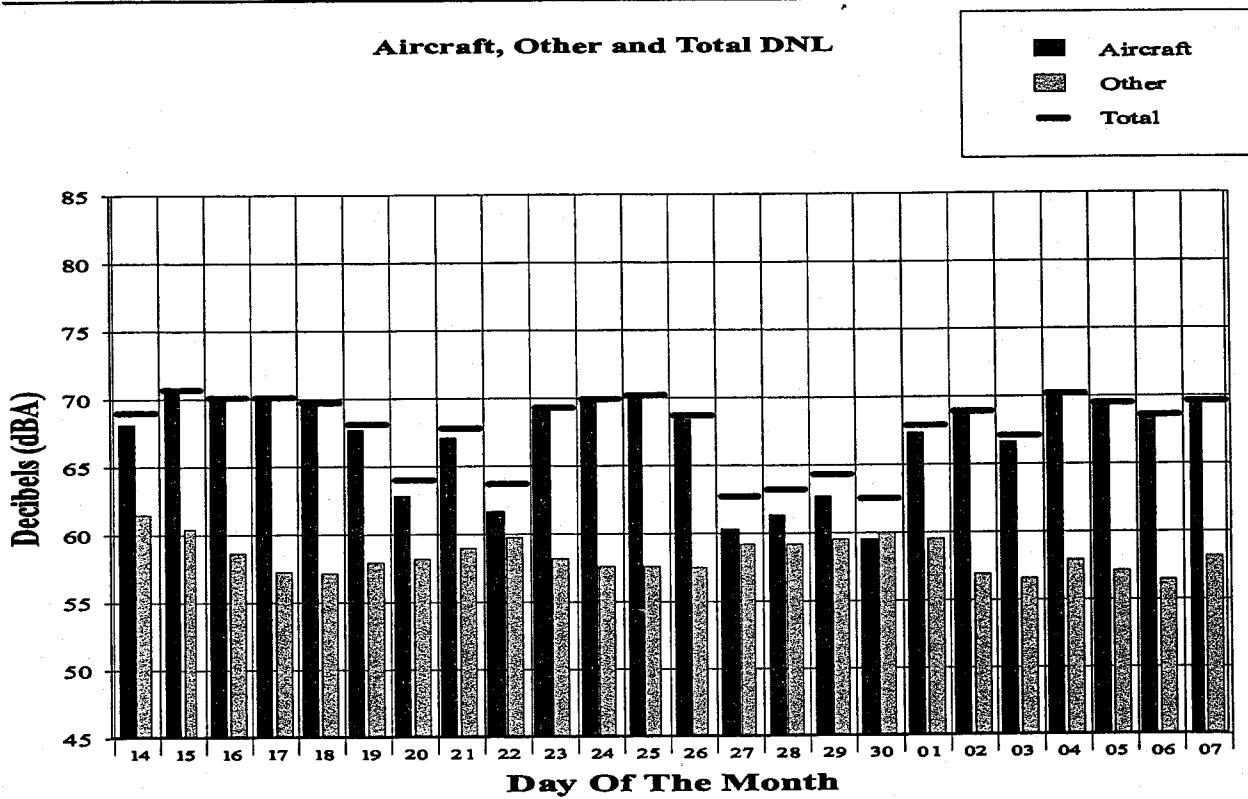
Aircraft, Other and Total DNL



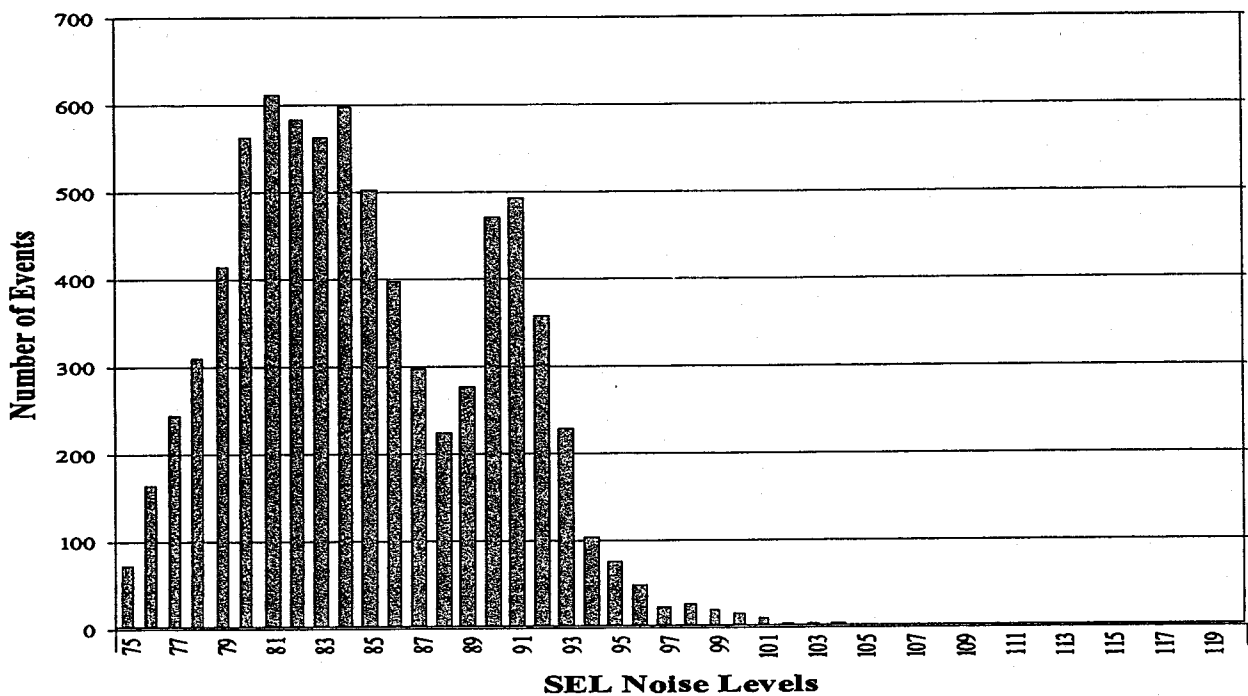
Total Number of Measured Aircraft Noise Events



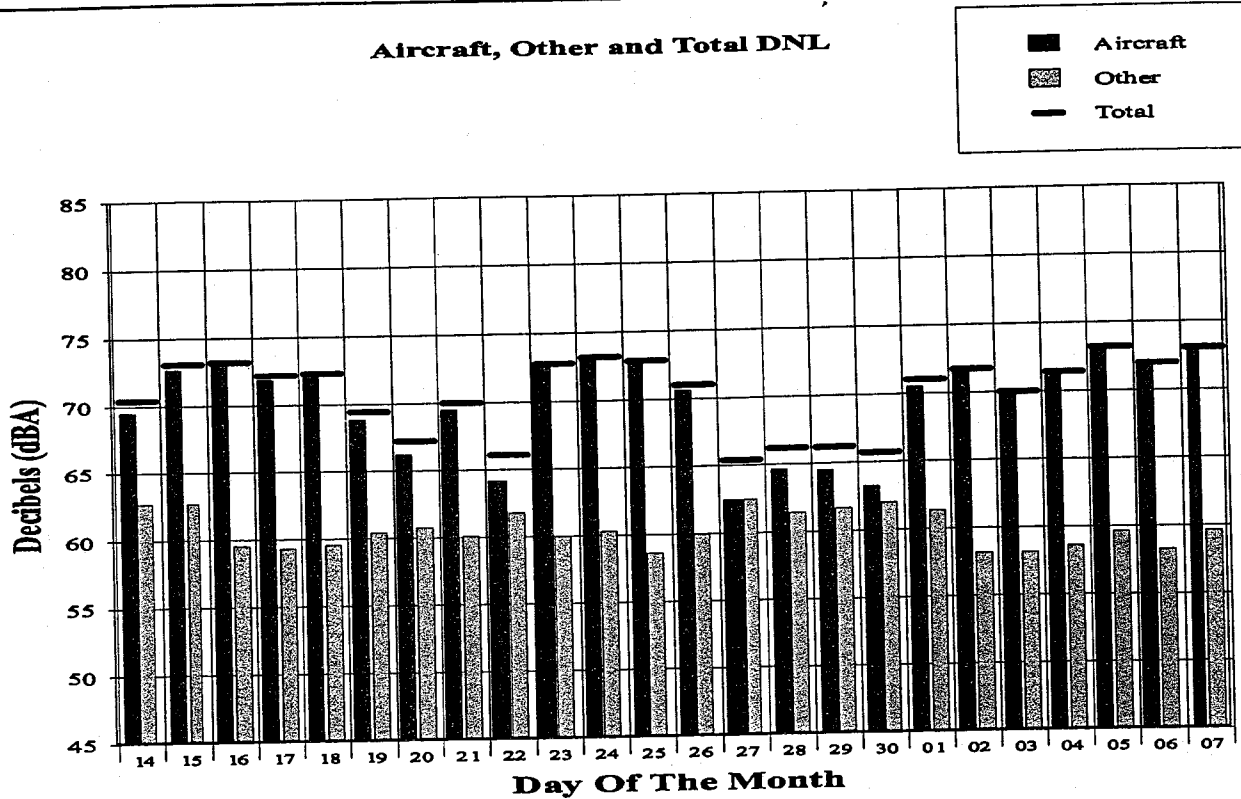
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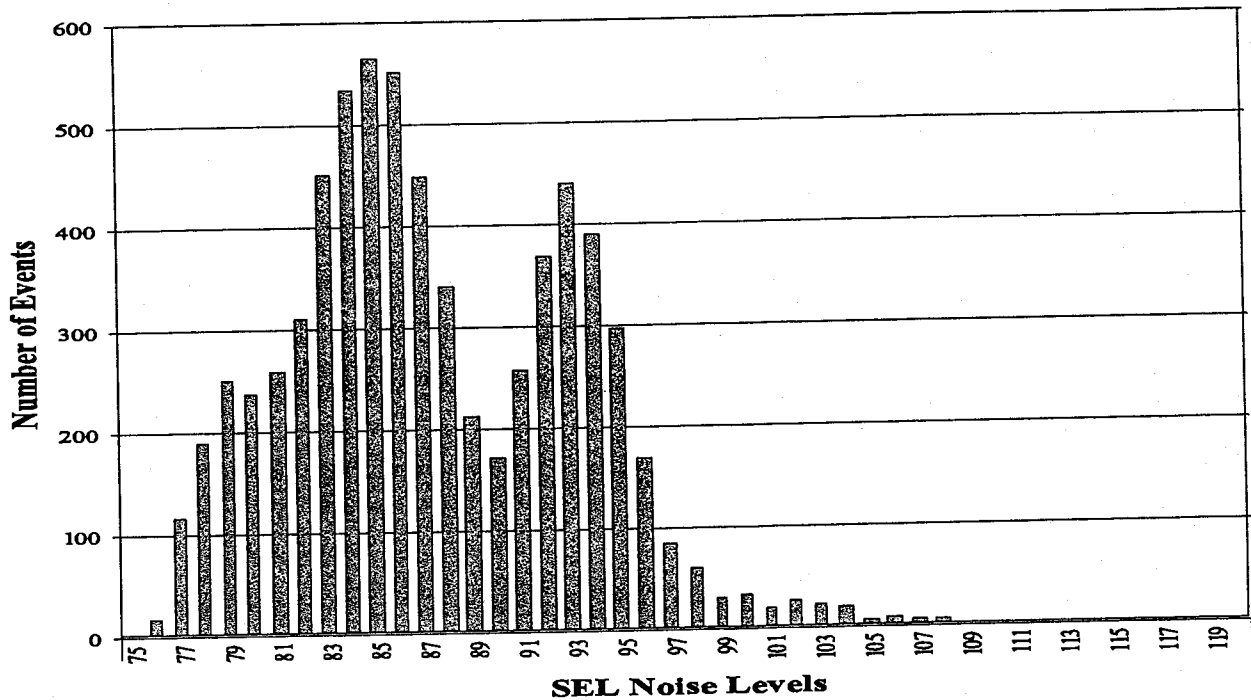
Total Number of Measured Aircraft Noise Events



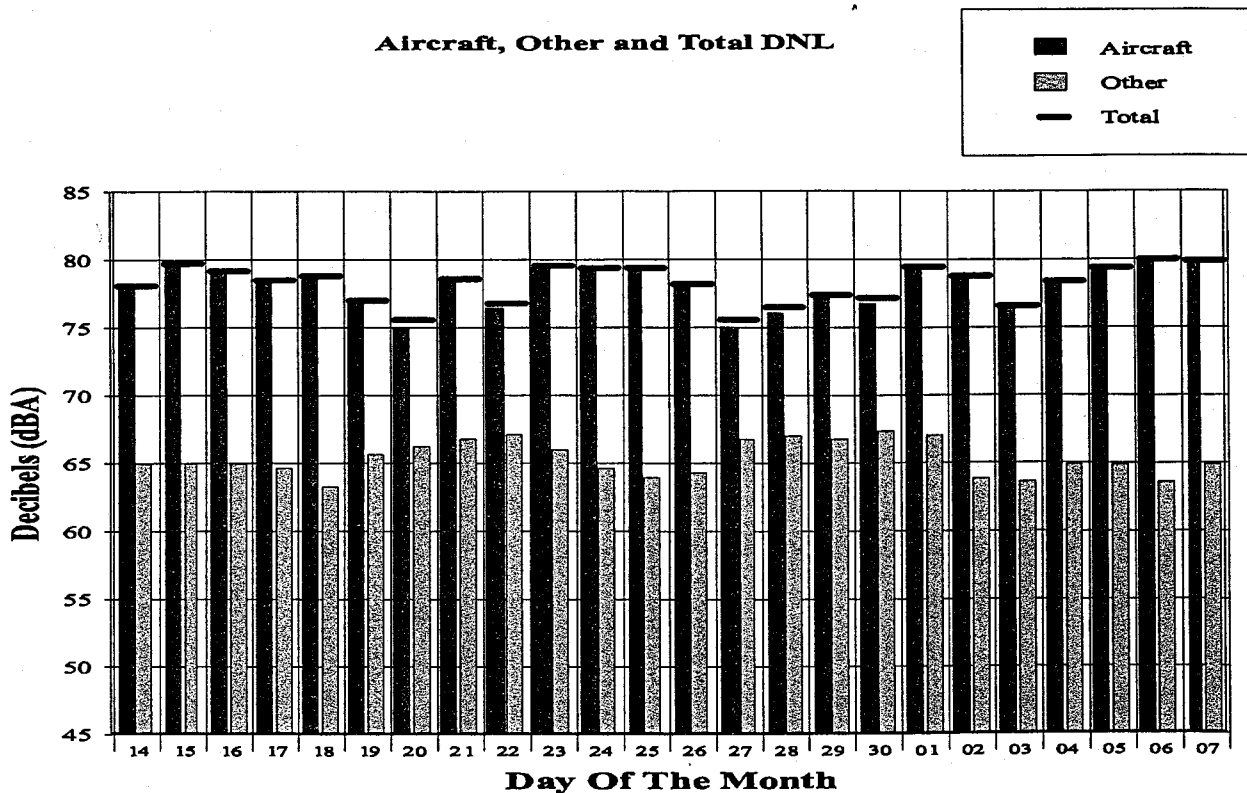
Aircraft, Other and Total DNL



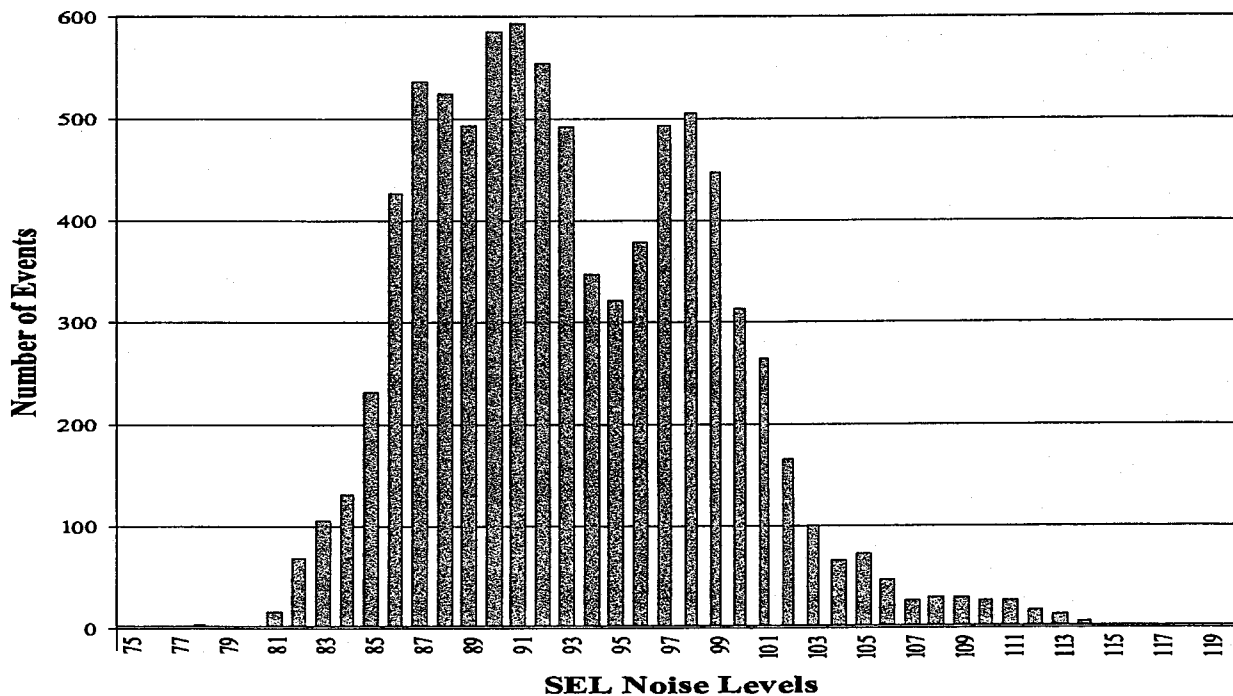
Total Number of Measured Aircraft Noise Events

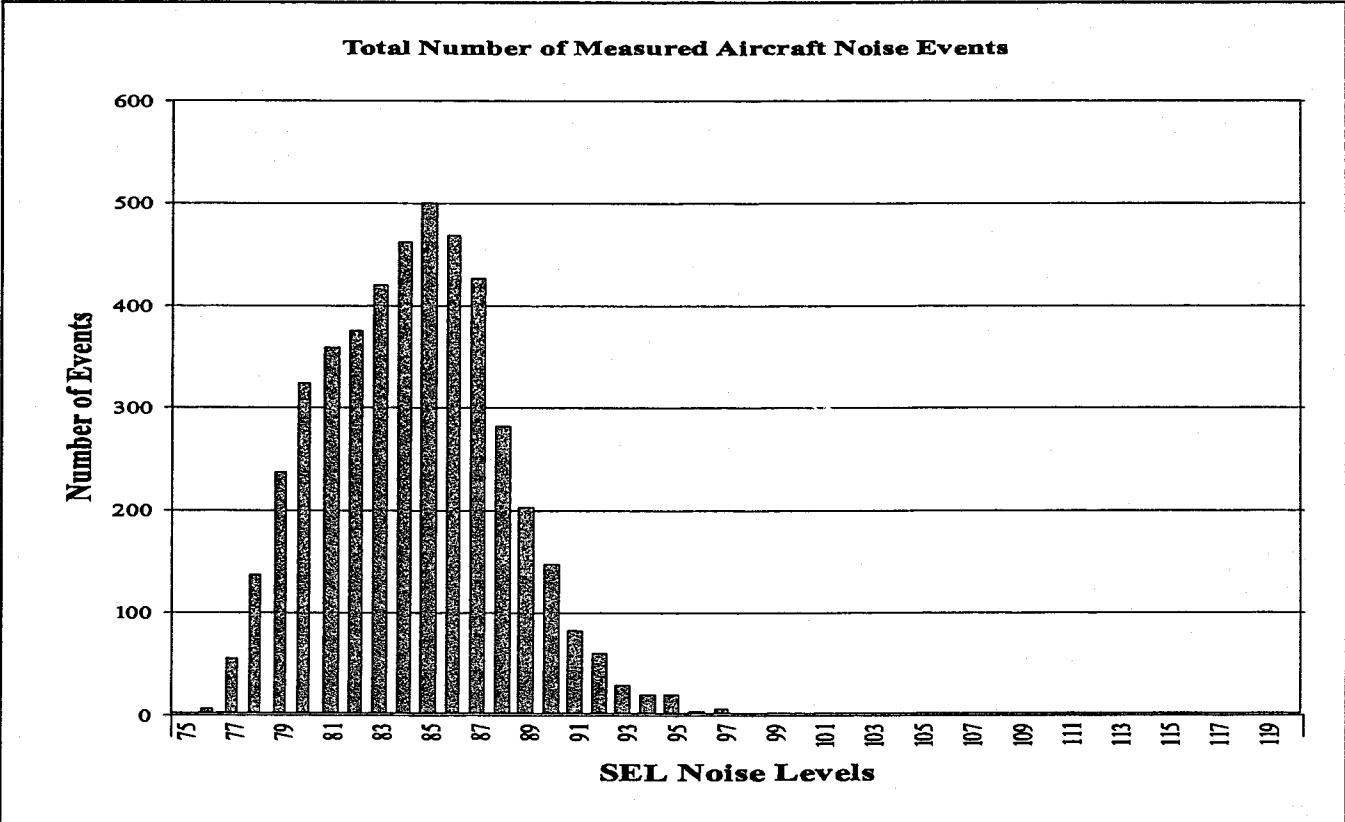
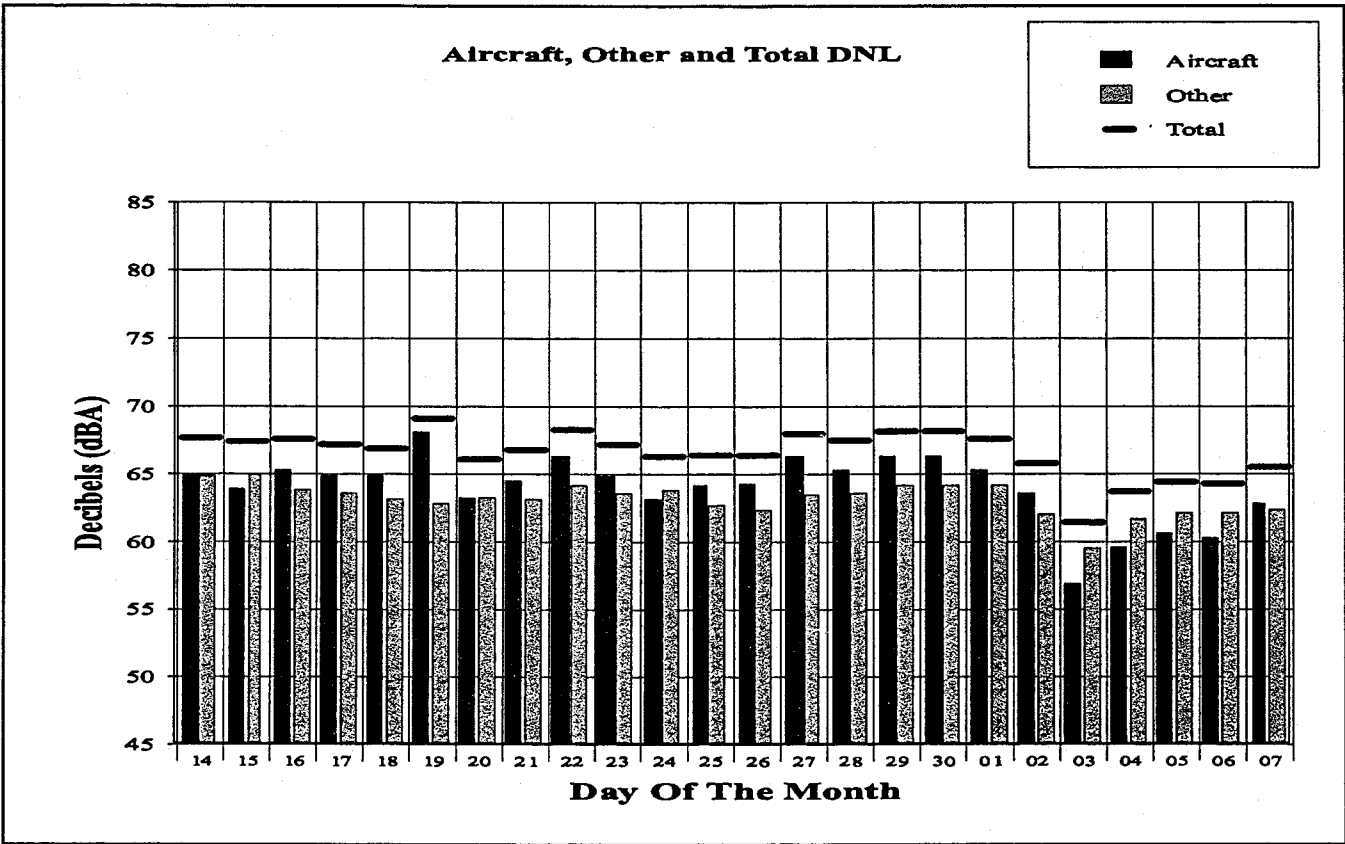


Aircraft, Other and Total DNL

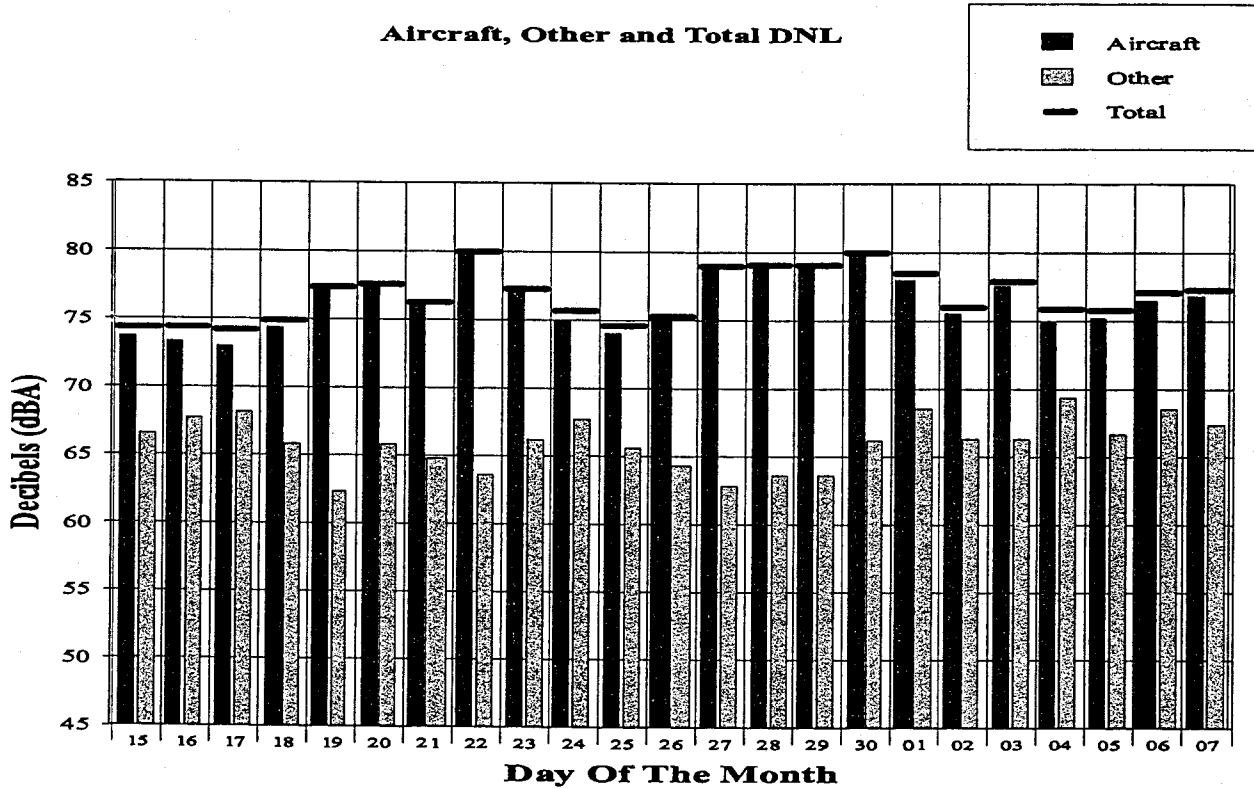


Total Number of Measured Aircraft Noise Events

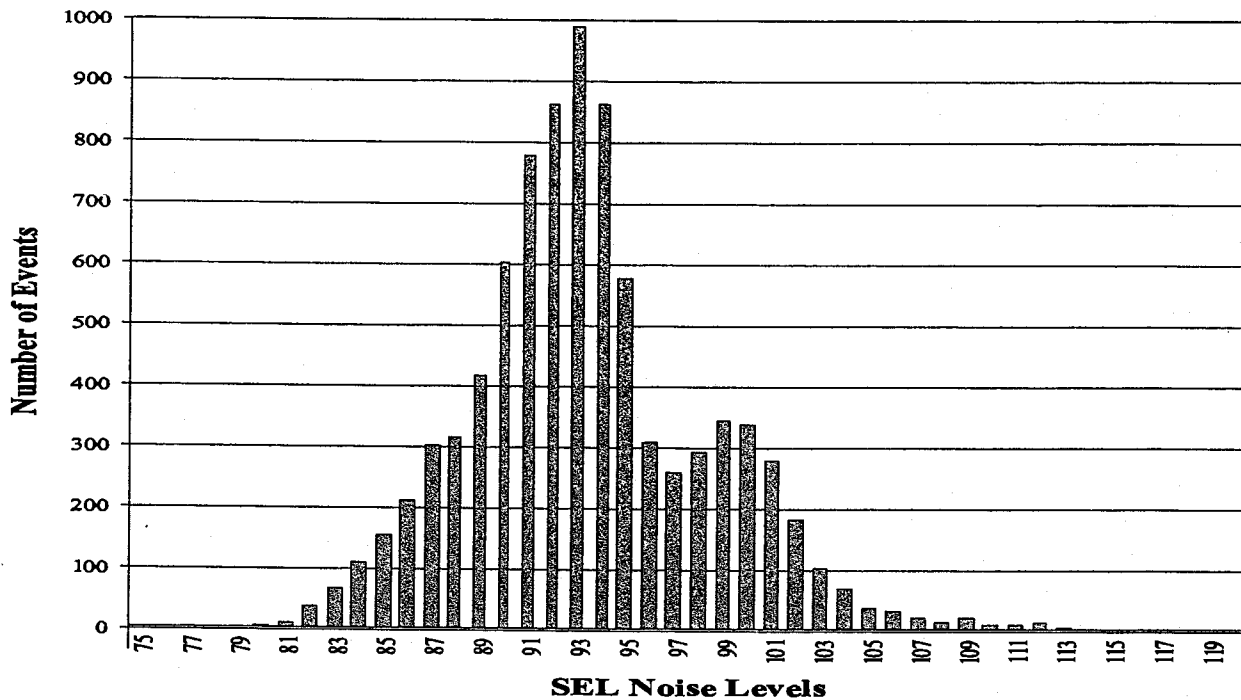




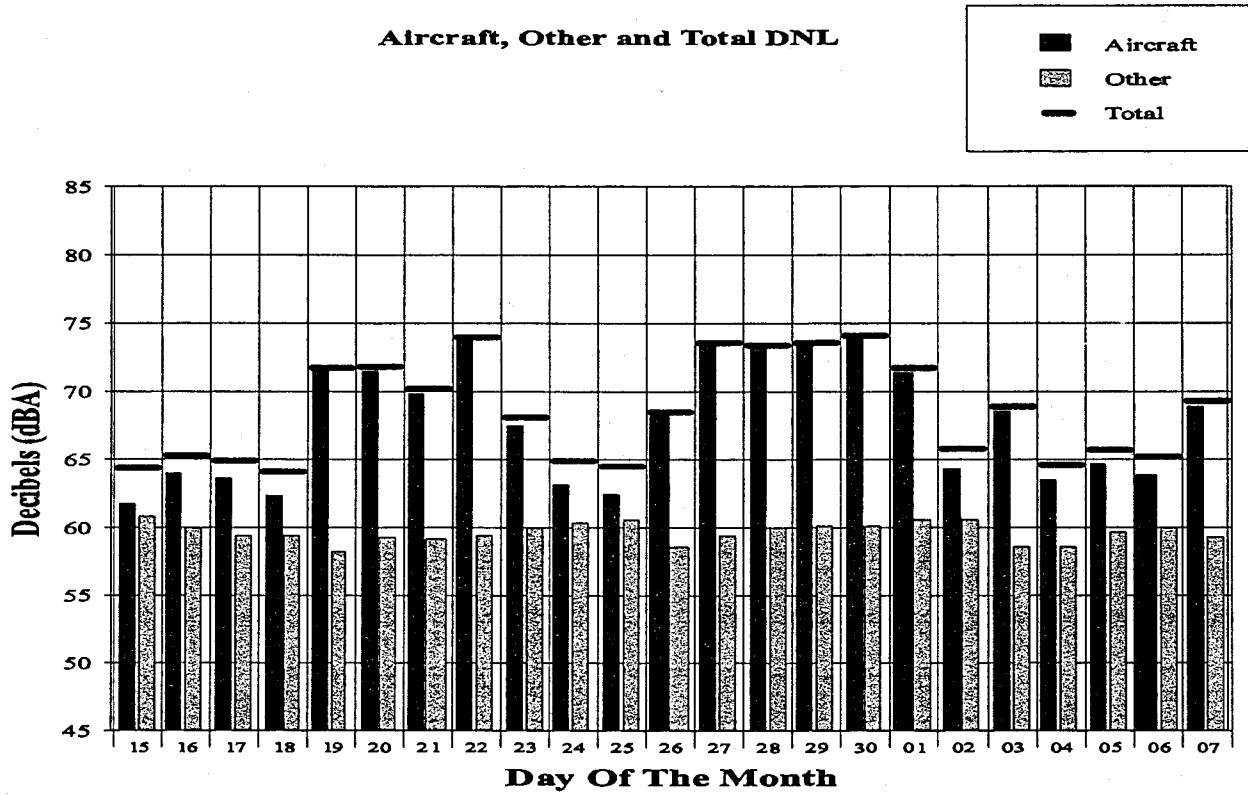
Aircraft, Other and Total DNL



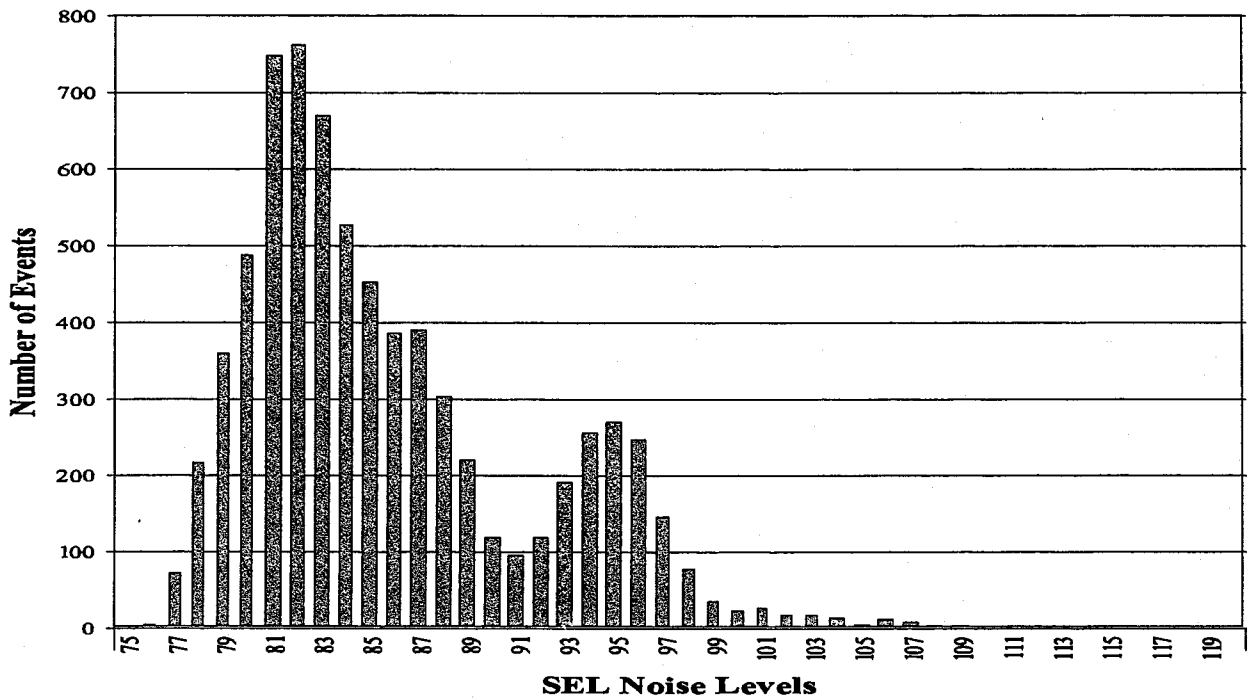
Total Number of Measured Aircraft Noise Events



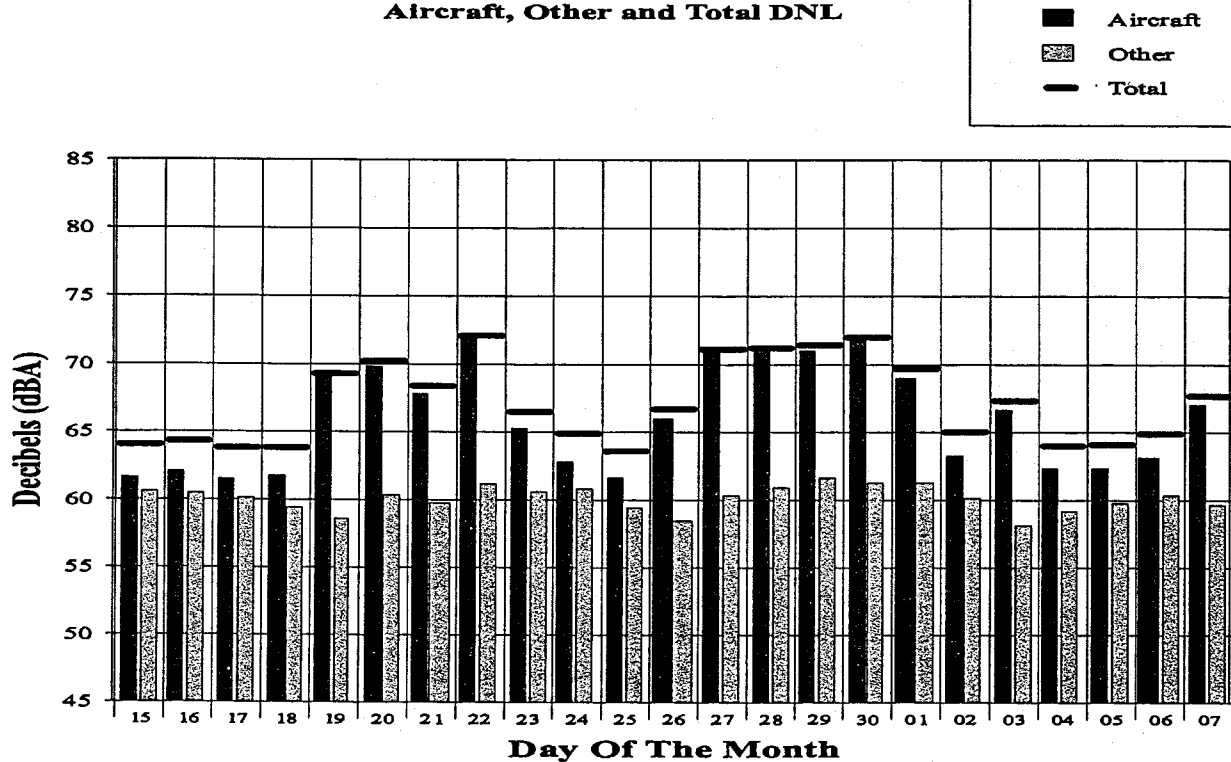
Aircraft, Other and Total DNL



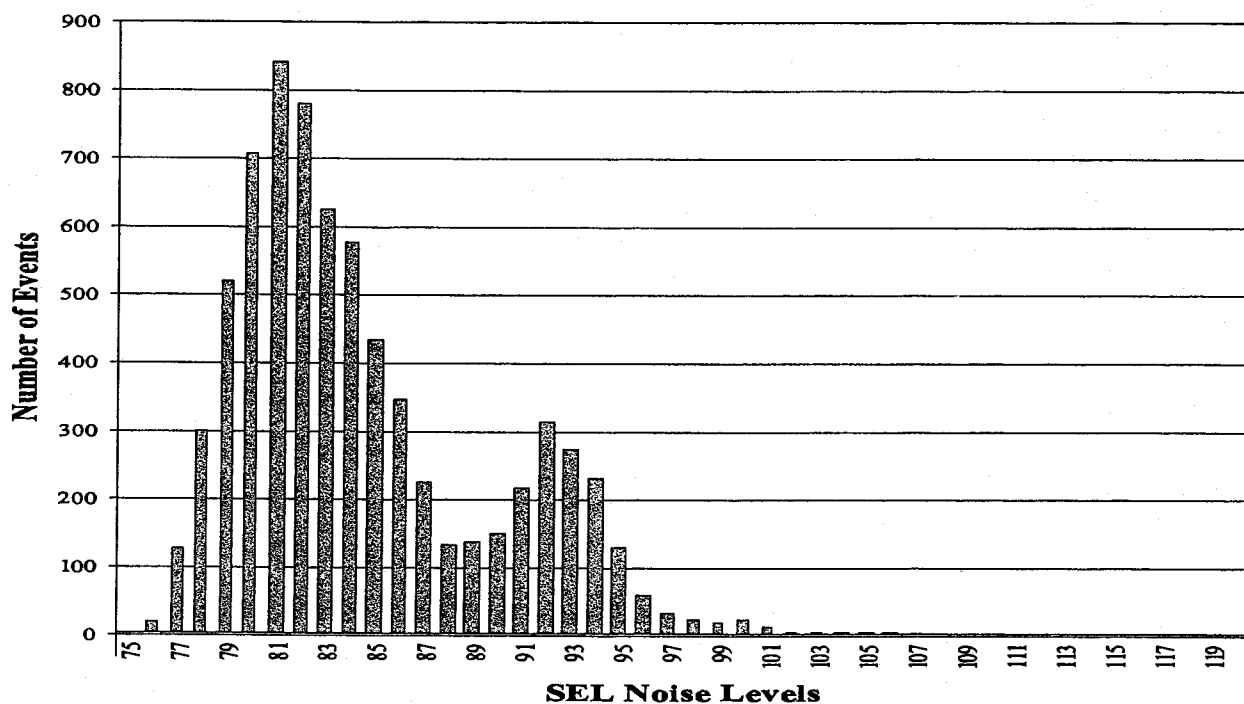
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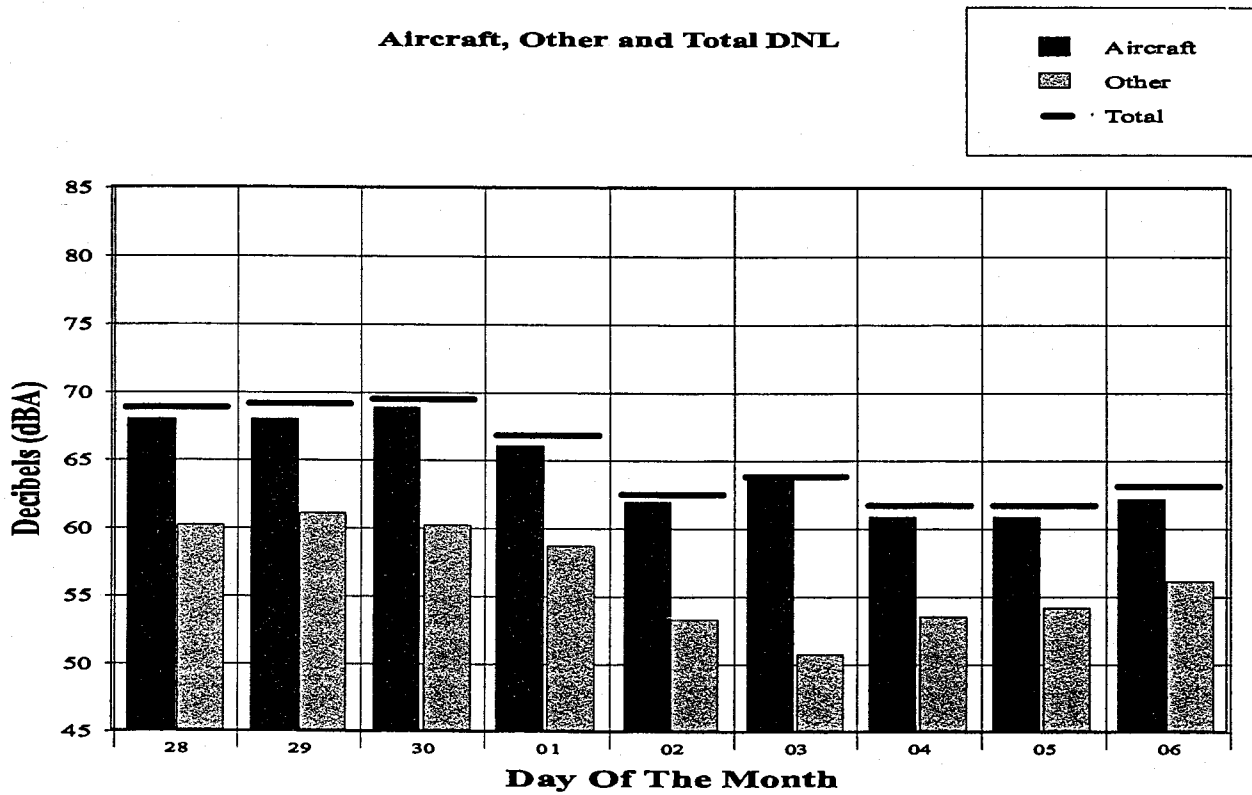
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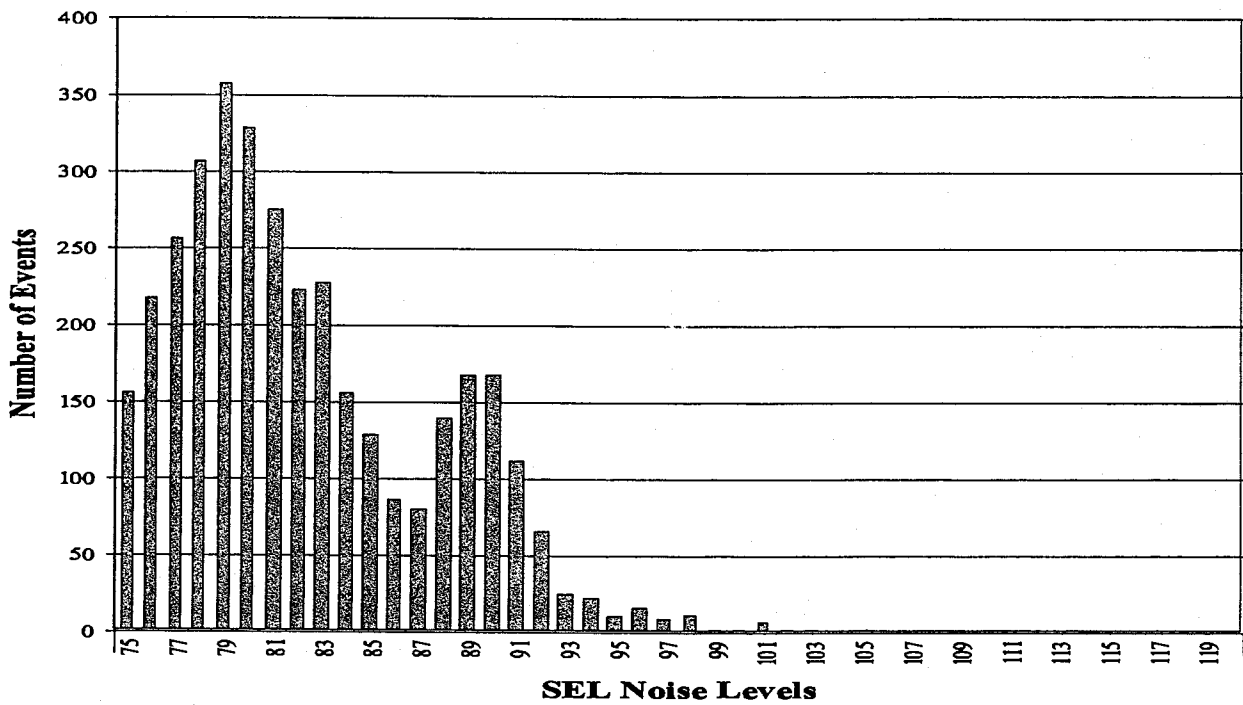
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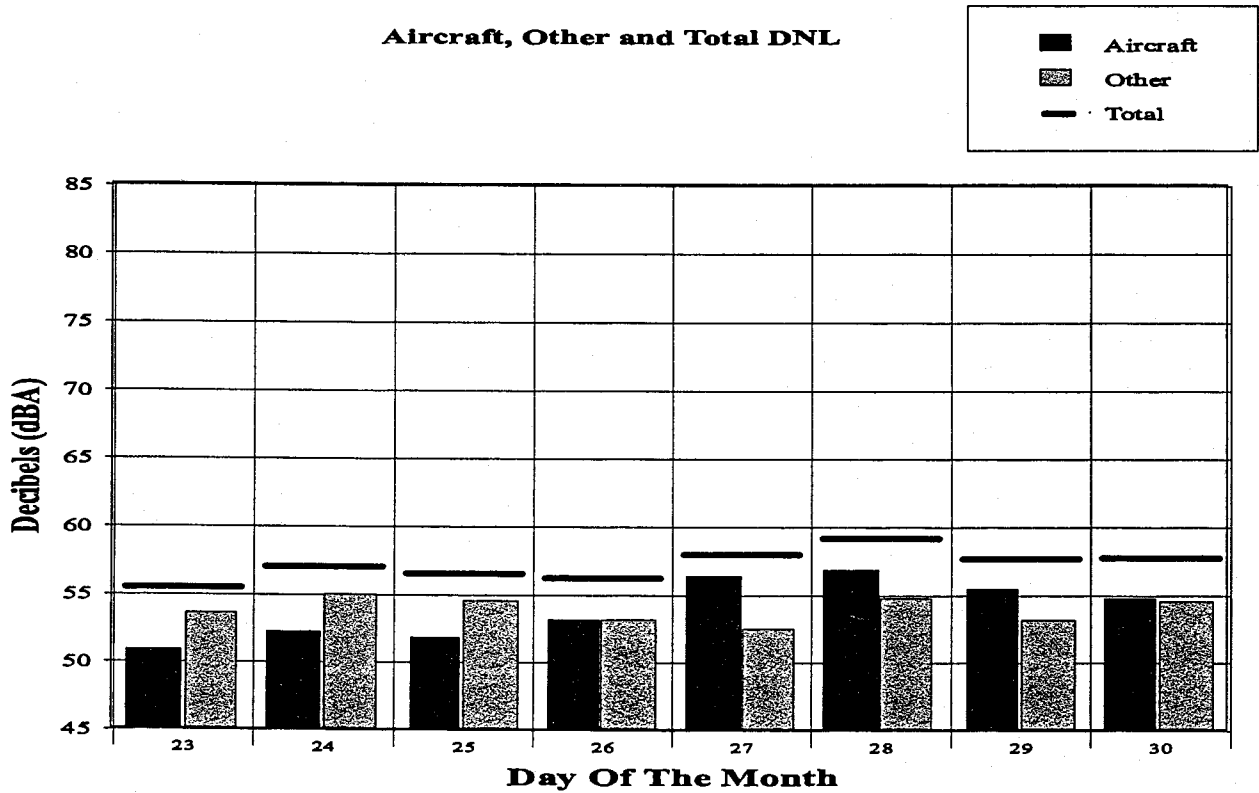
Aircraft, Other and Total DNL



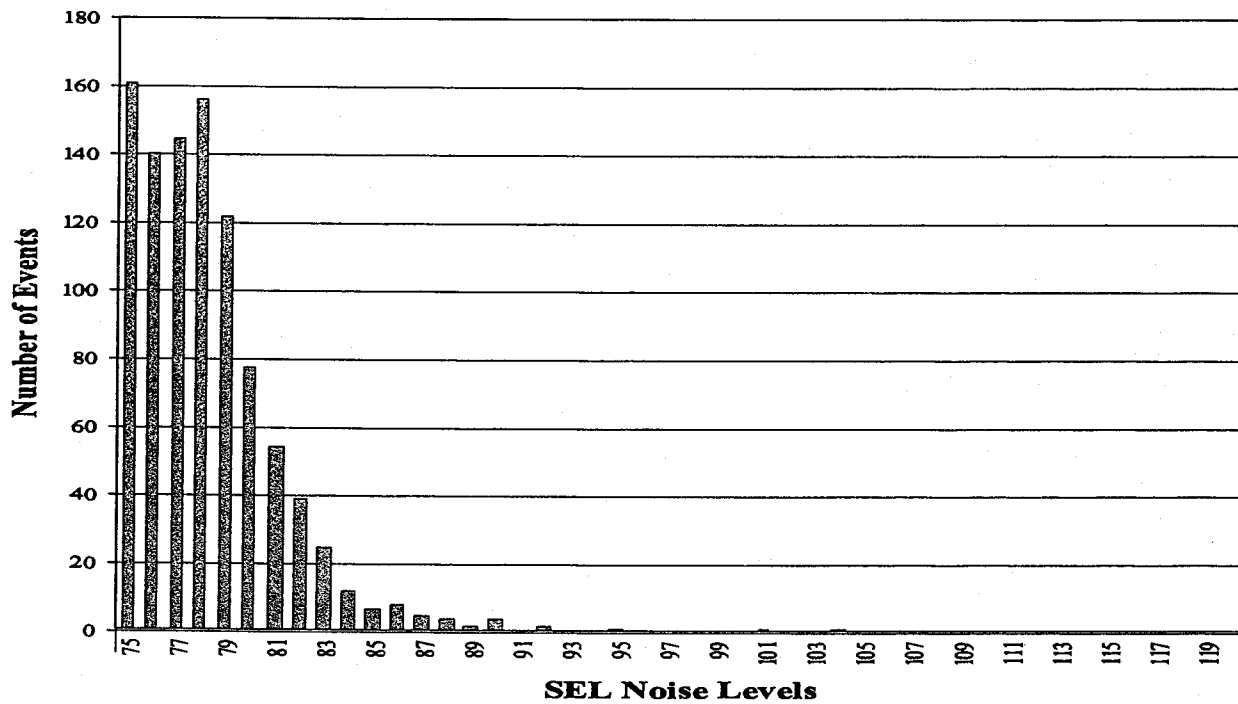
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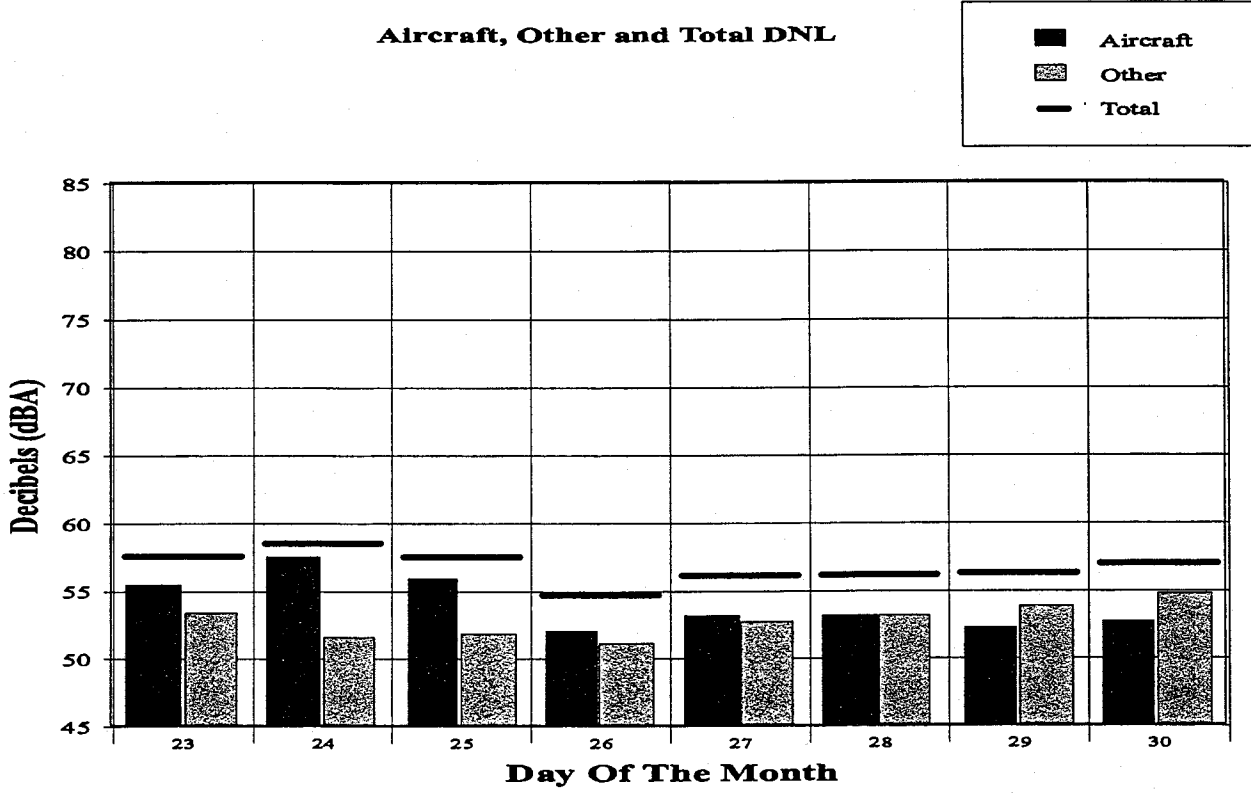
Aircraft, Other and Total DNL



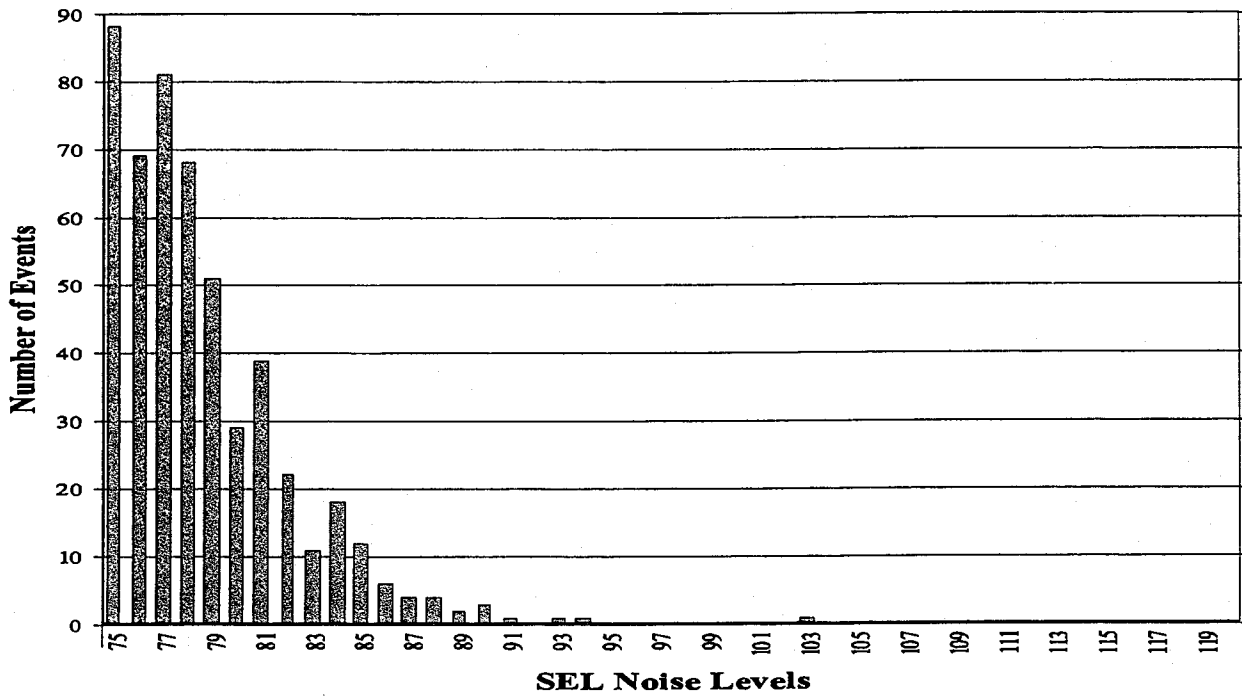
Total Number of Measured Aircraft Noise Events

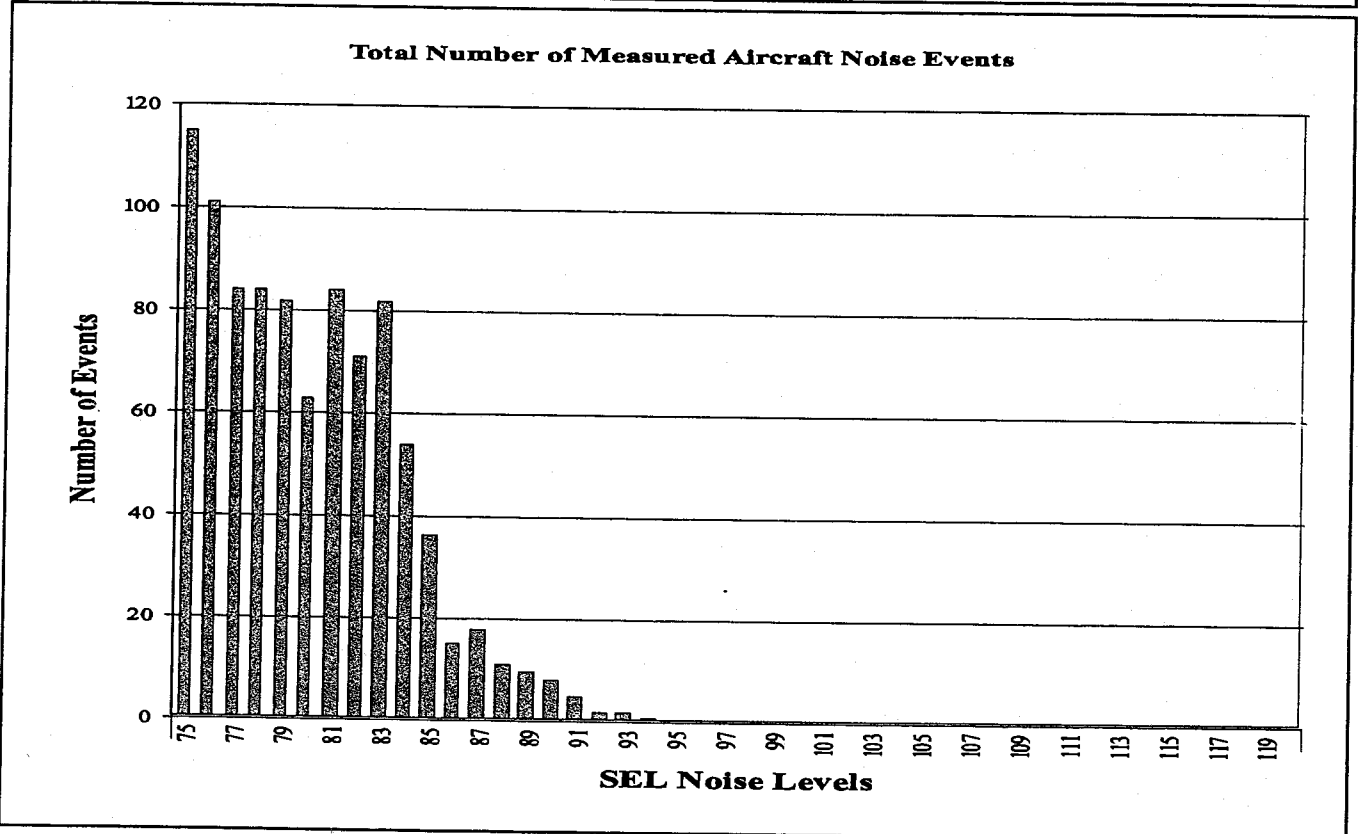
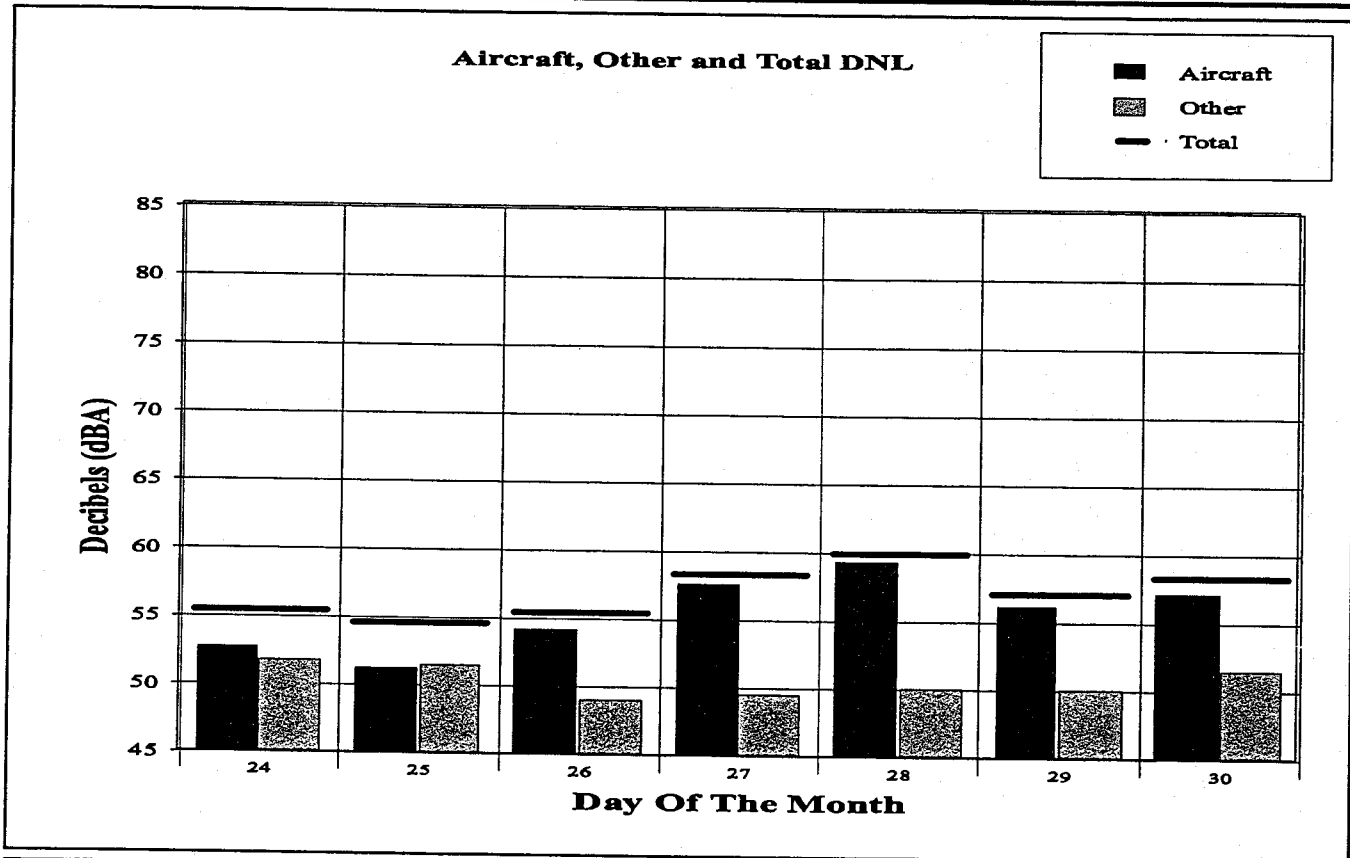


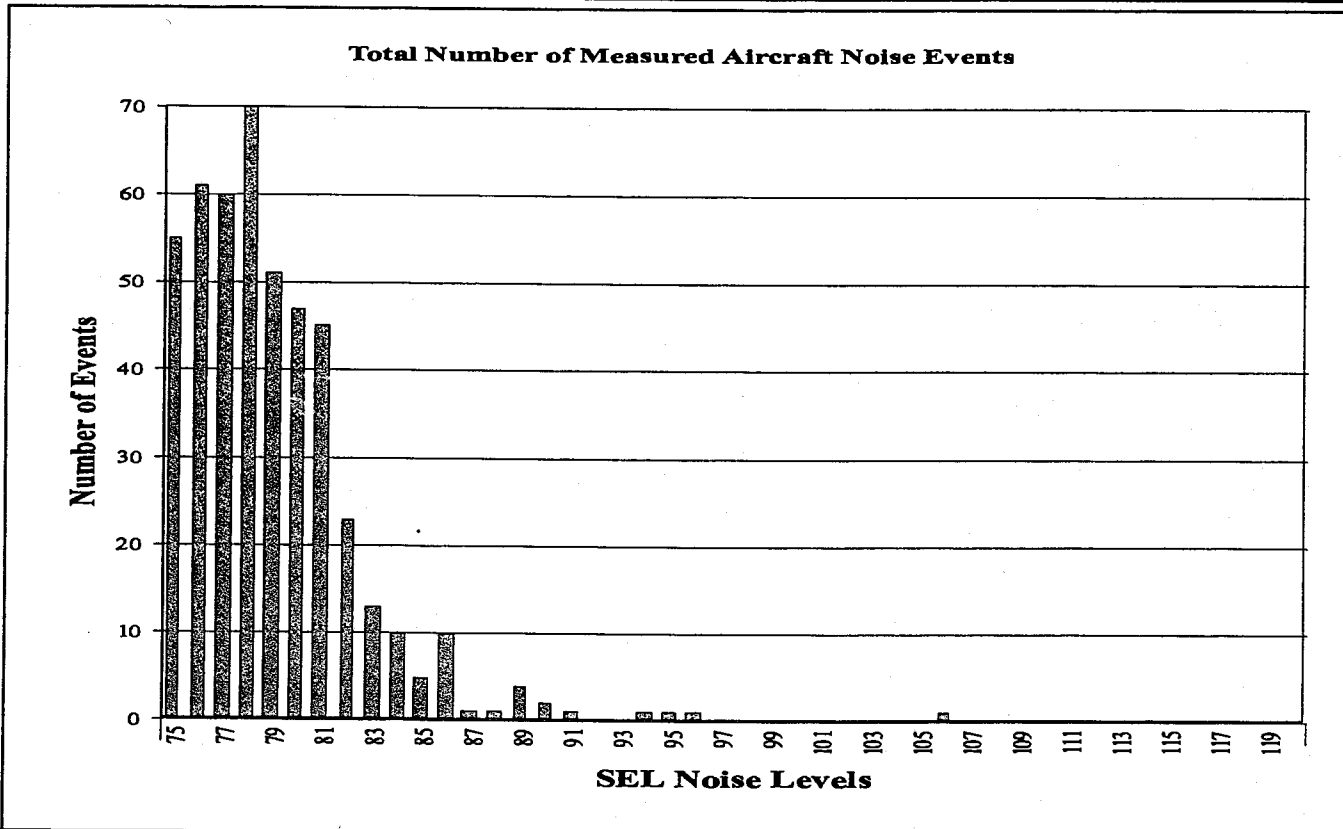
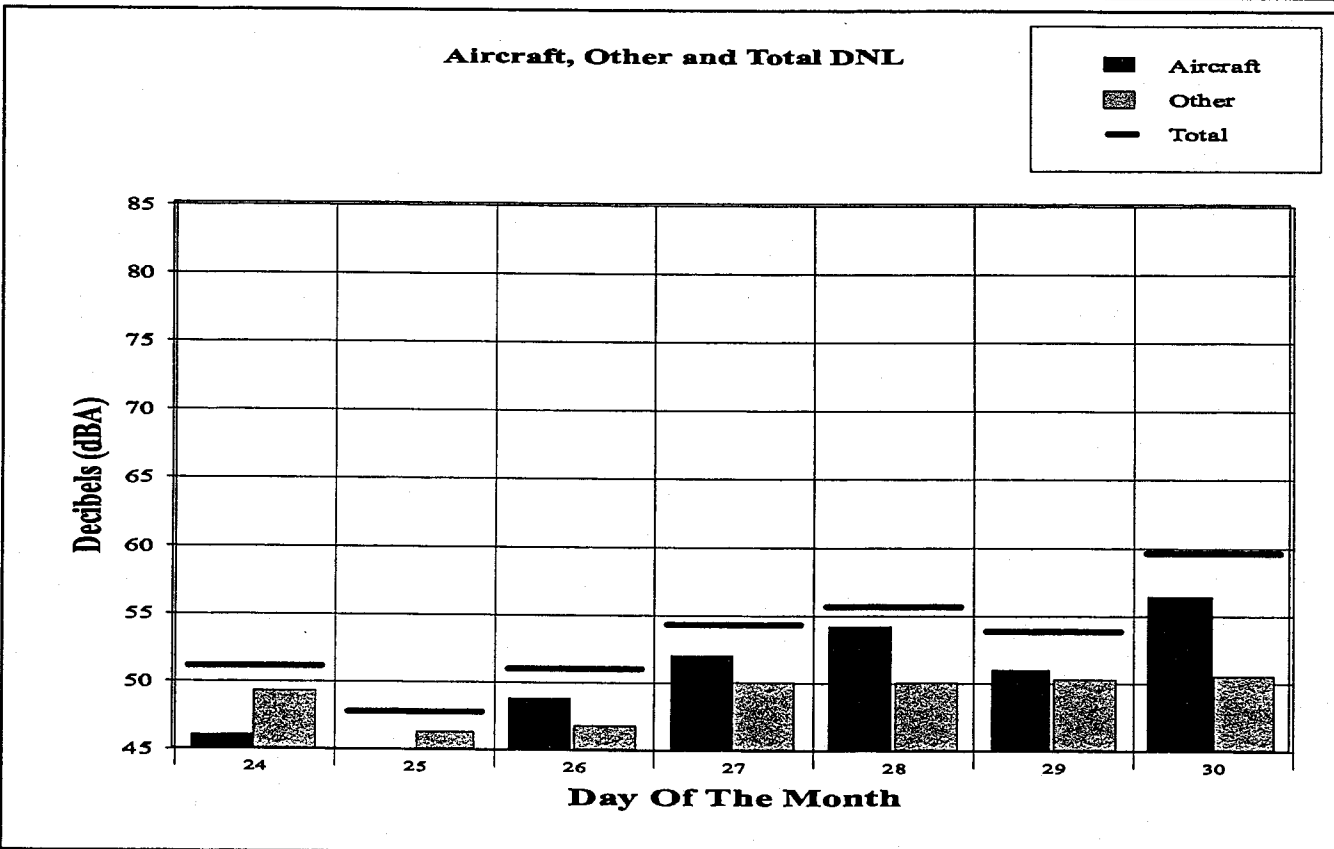
Aircraft, Other and Total DNL



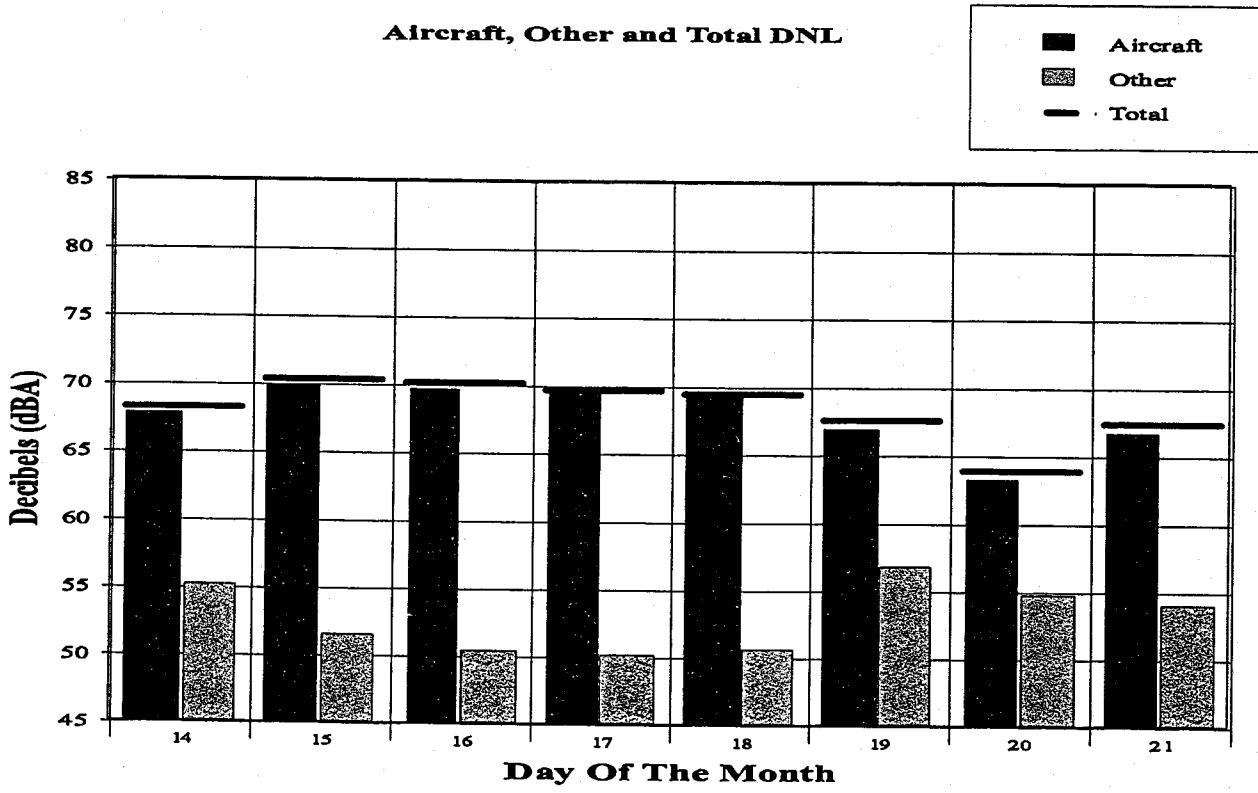
Total Number of Measured Aircraft Noise Events



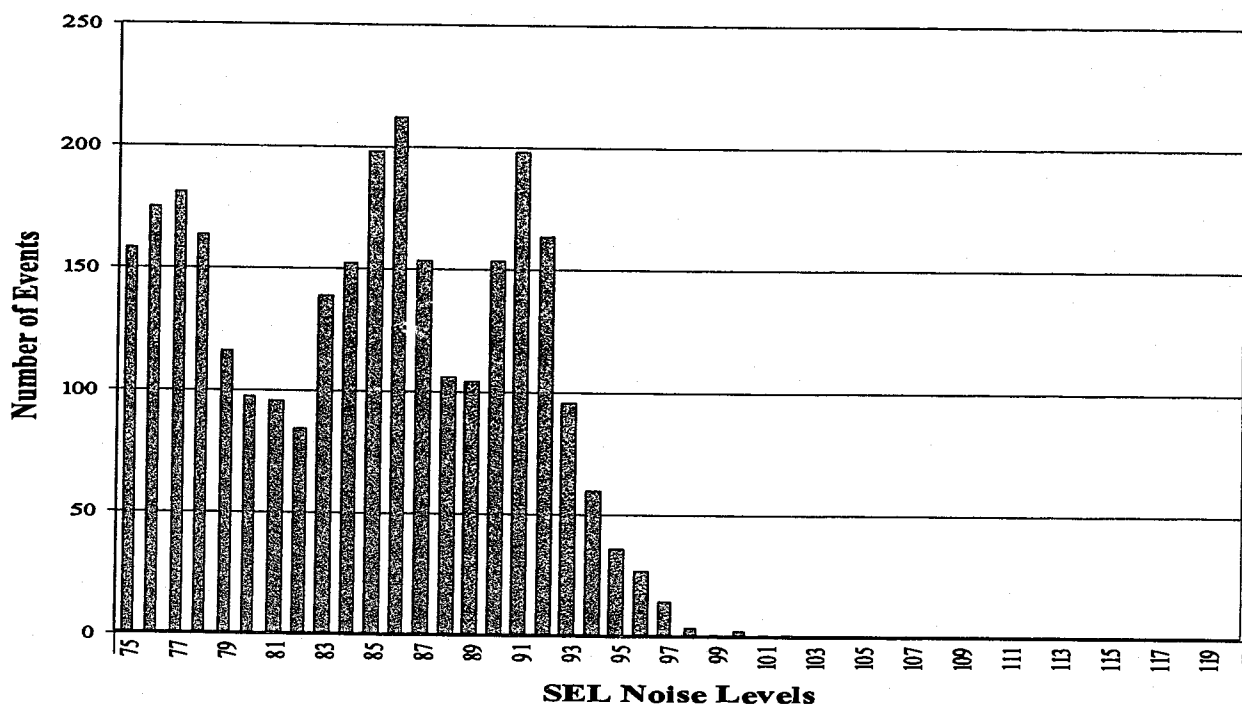




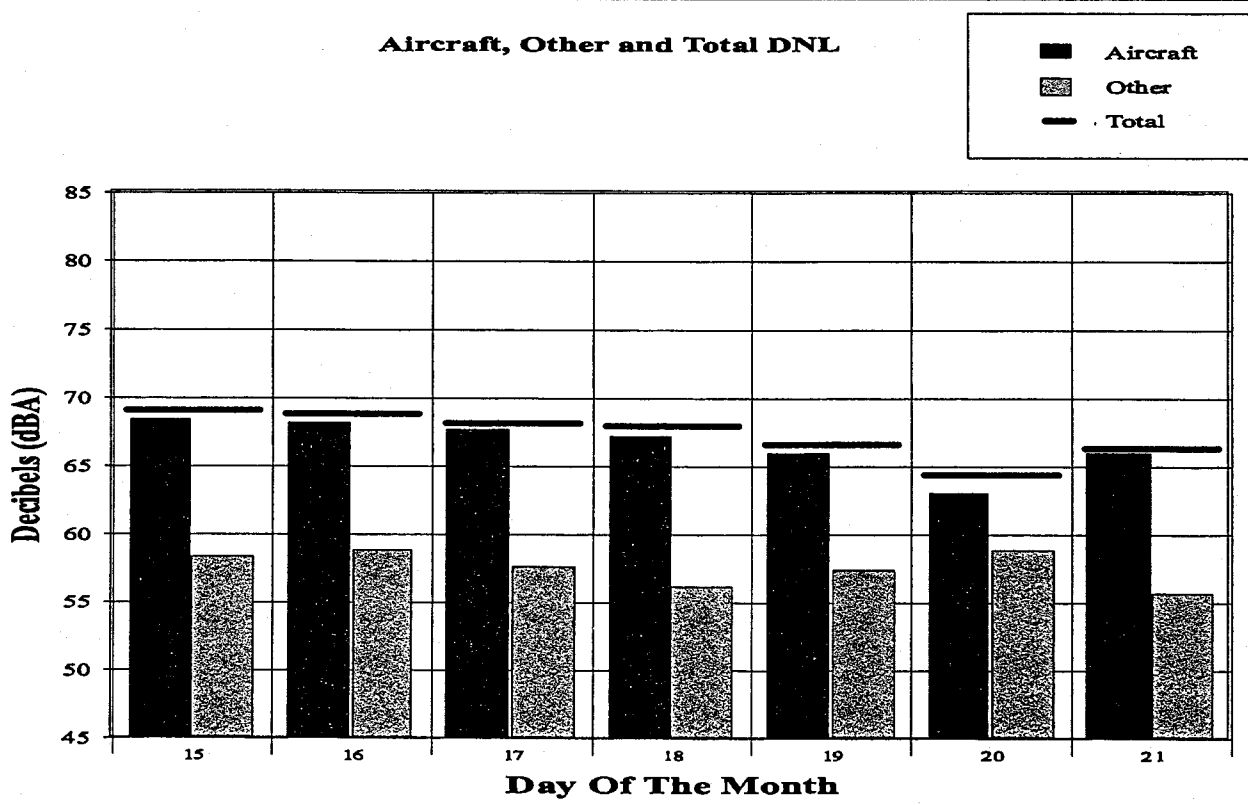
Aircraft, Other and Total DNL



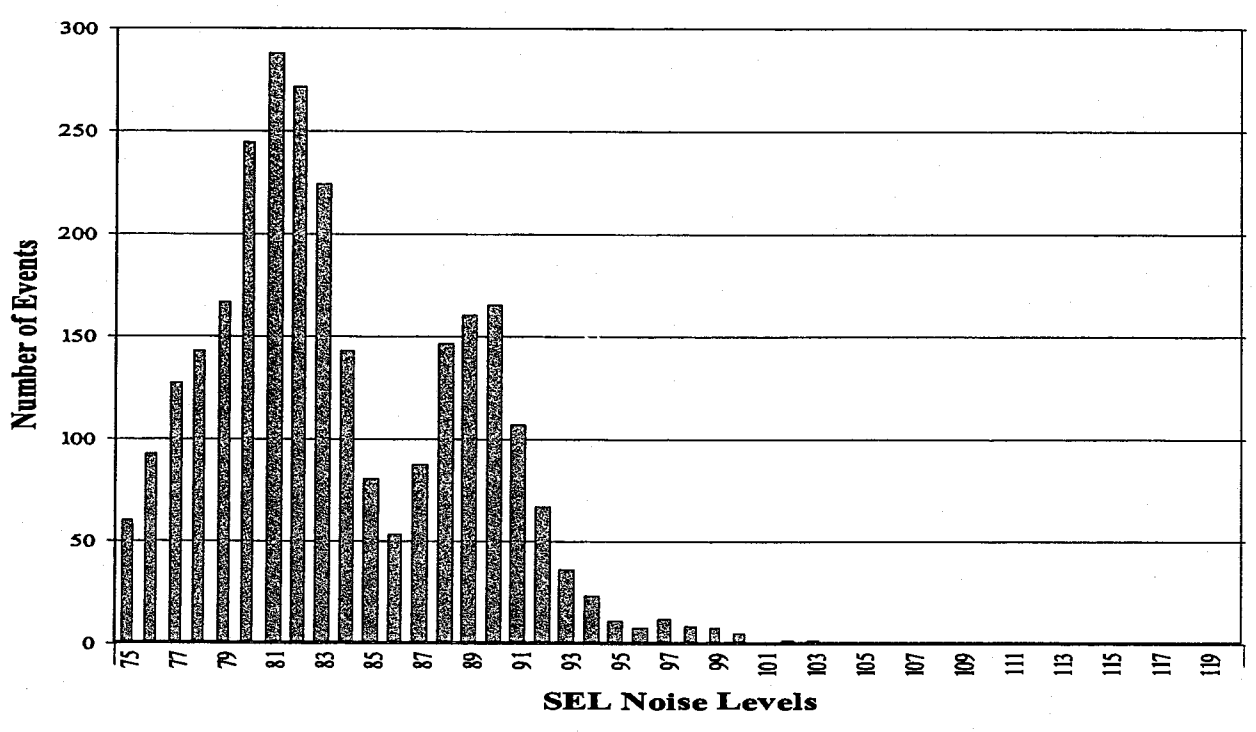
Total Number of Measured Aircraft Noise Events

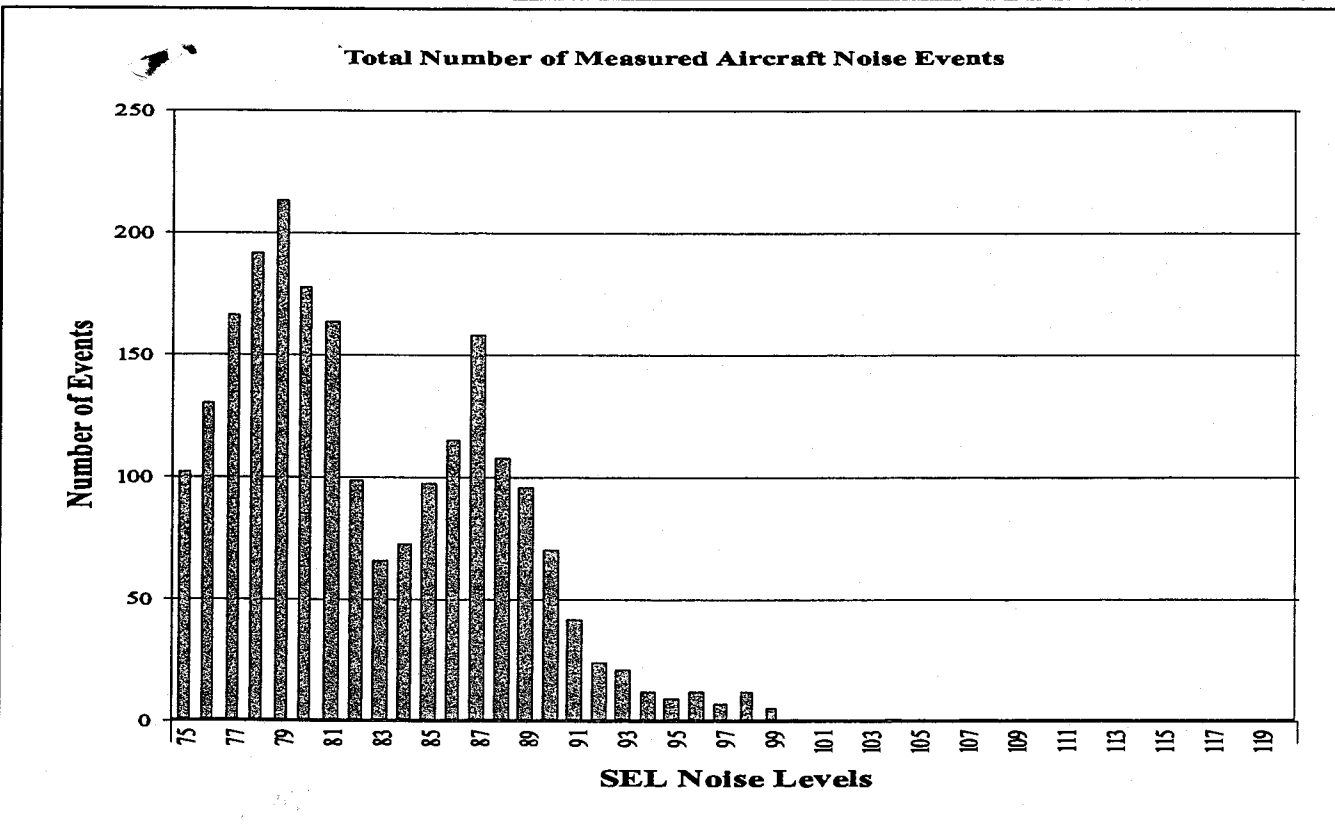
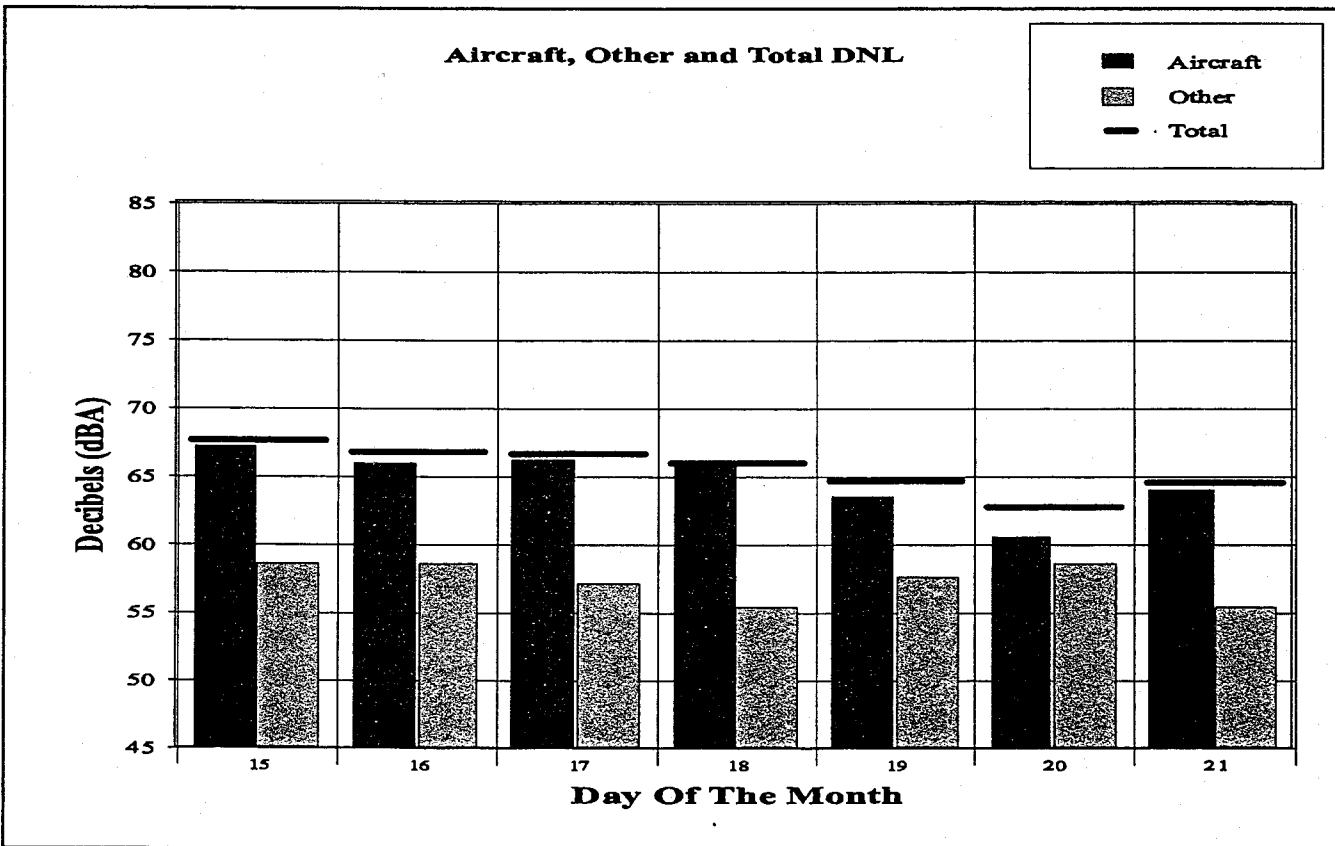


Aircraft, Other and Total DNL



Total Number of Measured Aircraft Noise Events





Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January to February)

Site: R9 - Riverton - 23rd Ave S and S 126th St

Operations: A Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	141	88.2
	B72Q	3	104	86.6
	B73A	2	102	85.2
	B73B		1830	83.1
	B73Q	3	30	85.5
	B747	3	69	88.4
	B757	3	396	83.8
	B767	3	63	83.8
	DC10	3	200	87.4
	DC8S	2	34	89.4
	EA32	3	154	81.5
	F28	2	620	83.7
	MD11	3	79	88.2
	MD80	3	984	83.6
Other Aircraft			514	83.5

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January to February)

Site: R11 - Riverton Heights - 26th Ave S and S 151st

Operations: A Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	93	93.5
	B72Q	3	53	93.5
	B73A	2	30	96.1
	B73B		578	95.1
	B73Q	3	10	93.2
	B747	3	33	94.0
	B757	3	161	95.2
	B767	3	12	94.0
	DC10	3	99	91.2
	DC8S	2	22	93.3
	EA32	3	104	95.3
	F28	2	297	95.5
	MD11	3	34	92.6
	MD80	3	540	94.9
Other Aircraft			569	94.6

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study














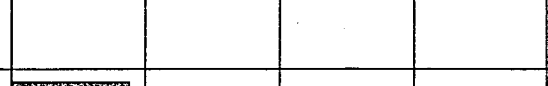

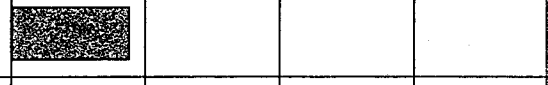





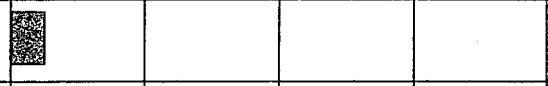

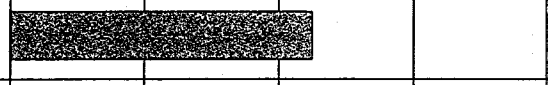

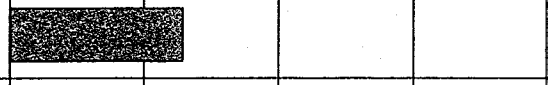

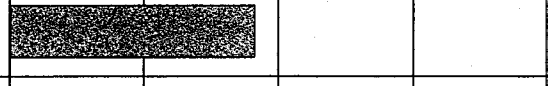

Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: PN1 - South Park - 12th Ave S and S Sullivan St

Operations: D Runways: 34L;34R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	97.1	
	B72Q	3	93.3	
	B73A	2	89.3	
	B73B	3	82.1	
	B73Q	3	90.7	
	B747	3	92.8	
	B757	3	79.2	
	B767	3	84.5	
	DC10	3	88.5	
	DC8S	2	97.4	
	EA32	3	81.3	
	F28	2	91.3	
	MD11	3	86.5	
	MD80	3	89.2	
Other Aircraft		50	87.9	

Note: Energy Average is average of all events on a noise energy basis.
 FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study


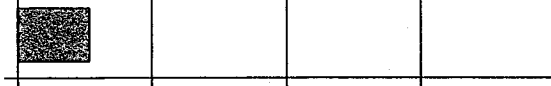


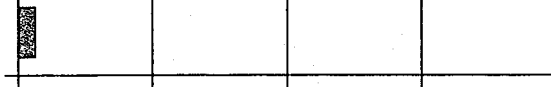

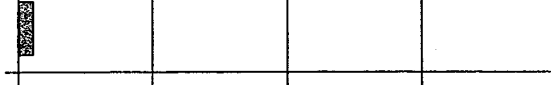



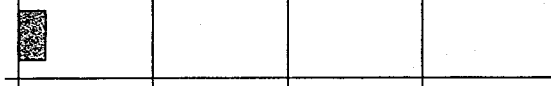




Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: PN2 - Rainier Valley - S Brandon St and 37th Ave S

Operations: D Runways: 34L;34R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL	
	B72Q	3	2	82.7	
	B73A	2	3	76.5	
	B73B	3	32	80.7	
	B747	3	2	80.6	
	B757	3	5	79.5	
	B767	3	1	72.7	
	DC10	3	1	81.1	
	DC8S	2	2	79.0	
	F28	2	3	78.8	
	MD11	3	1	77.6	
	MD80	3	12	79.3	
Other Aircraft			12	78.9	

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: PN5 - Medina - NE 6th St and 86th Ave NE

Operations: D Runways: 34L;34R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	9	89.3
	B72Q	3	6	85.2
	B73A	2	2	73.0
	B73B	3	66	73.8
	B73Q	3	1	81.9
	B747	3	3	78.7
	B757	3	20	70.1
	B767	3	2	71.9
	DC10	3	6	78.4
	DC8S	2	2	84.1
	EA32	3	10	73.1
	F28	2	53	81.9
	MD11	3	3	78.8
	MD80	3	69	80.1
Other Aircraft			10	79.7

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study




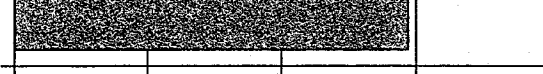



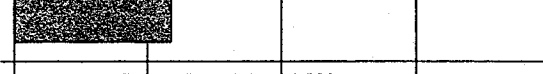



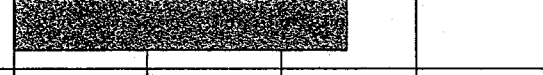

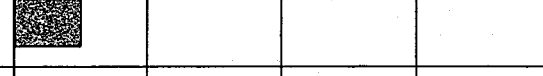

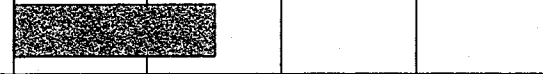

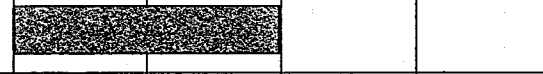



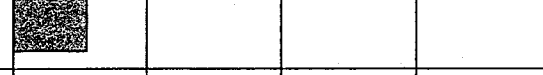

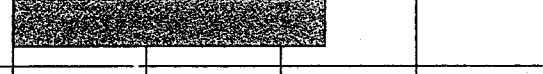

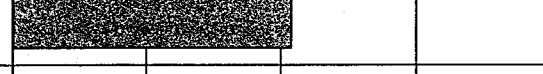

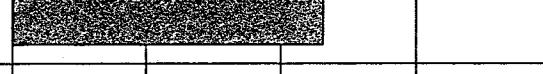

Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: PS1 - Des Moines - 9th Ave S and S 207th St

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL	
	B727	2	70	96.3	
	B72Q	3	43	94.8	
	B73A	2	61	93.0	
	B73B	3	896	85.9	
	B73Q	3	9	92.0	
	B747	3	58	92.5	
	B757	3	206	82.5	
	B767	3	32	87.6	
	DC10	3	98	90.0	
	DC8S	2	20	96.8	
	EA32	3	139	82.8	
	F28	2	344	91.7	
	MD11	3	36	90.4	
	MD80	3	615	91.6	
Other Aircraft			375	88.3	

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: PS2 - Woodmont - 268th St and 17th Ave S

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	83	95.2
	B72Q	3	52	92.4
	B73A	2	56	91.2
	B73B	3	325	81.3
	B73Q	3	9	87.5
	B747	3	72	92.1
	B757	3	24	78.1
	B767	3	20	84.1
	DC10	3	86	88.3
	DC8S	2	26	94.2
	EA32	3	47	80.1
	F28	2	380	89.2
	MD11	3	27	88.3
	MD80	3	689	88.1
Other Aircraft			140	89.1

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study






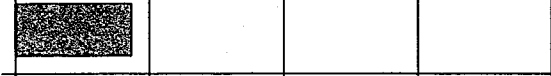

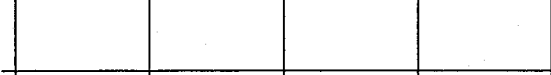

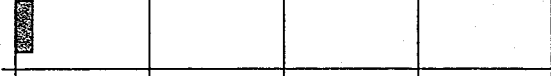



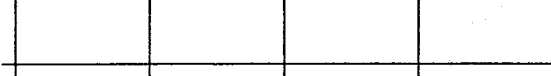

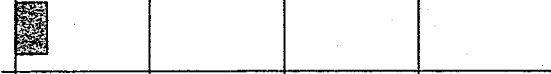

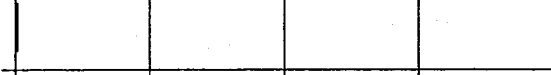

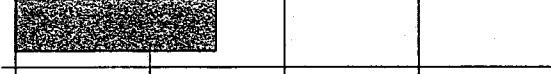

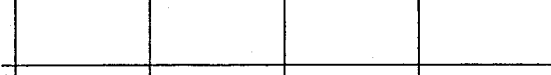

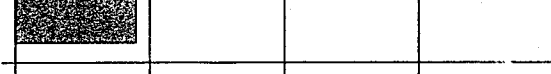

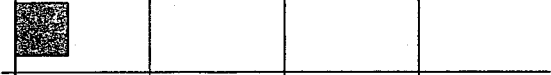

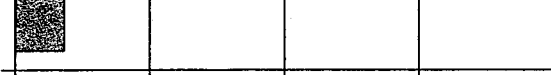
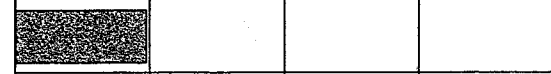
Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: PS4 - Auburn - 45th Pl S and S 290th St

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL	
	B727	2	62	88.1	
	B72Q	3	33	85.2	
	B73A	2	37	84.4	
	B73B	3	107	77.7	
	B73Q	3	5	80.6	
	B747	3	48	84.0	
	B757	3	12	72.5	
	B767	3	8	81.2	
	DC10	3	30	80.2	
	DC8S	2	22	87.5	
	EA32	3	14	73.6	
	F28	2	249	84.5	
	MD11	3	13	82.0	
	MD80	3	335	81.8	
Other Aircraft			65	85.0	

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study












Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: PS5 - Federal Way - SW 327th St and 17th Ave SW

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	11	88.3
	B72Q	3	6	84.7
	B73A	2	30	86.0
	B73B	3	215	77.4
	B73Q	3	2	81.4
	B747	3	31	85.8
	B757	3	4	74.3
	DC10	3	31	83.1
	DC8S	2	7	92.0
	MD11	3	20	84.1
	MD80	3	125	82.6
Other Aircraft			45	83.3

Note: Energy Average is average of all events on a noise energy basis.
 FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: C1 - Highline Hospital - 9th Ave SW and SW 160th St

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL	
	B727	2	22	81.5	
	B72Q	3	14	77.9	
	B73A	2	26	78.7	
	B73B	3	29	73.4	
	B73Q	3	2	83.8	
	B747	3	8	74.8	
	B757	3	12	71.5	
	B767	3	2	74.5	
	DC10	3	14	76.3	
	DC8S	2	7	79.8	
	EA32	3	3	77.8	
	F28	2	119	78.2	
	MD11	3	18	76.4	
	MD80	3	221	77.1	
Other Aircraft			116	78.1	

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: C2 - McMicken Heights - S 164th St and 34th Ave S

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	54	89.2
	B72Q	3	32	85.7
	B73A	2	33	87.0
	B73B	3	110	78.1
	B73Q	3	5	83.0
	B747	3	9	81.0
	B757	3	37	78.3
	B767	3	8	76.8
	DC10	3	32	81.7
	DC8S	2	15	89.7
	EA32	3	6	74.5
	F28	2	267	87.6
	MD11	3	28	82.8
	MD80	3	467	84.6
Other Aircraft			223	84.4

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: C3 - Normandy Park - S 185th and 3rd Ave S

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	55	85.7
	B72Q	3	37	83.8
	B73A	2	46	84.8
	B73B	3	738	76.7
	B73Q	3	4	86.0
	B747	3	46	79.7
	B757	3	151	75.0
	B767	3	26	77.6
	DC10	3	74	79.8
	DC8S	2	17	86.9
	EA32	3	86	74.6
	F28	2	271	82.7
	MD11	3	30	82.7
	MD80	3	504	82.9
Other Aircraft			418	79.0

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: C4 - E Seatac - 38th Ave S and S 183rd St

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	54	89.8
	B72Q	3	36	86.9
	B73A	2	44	87.8
	B73B	3	682	79.8
	B73Q	3	5	87.5
	B747	3	48	83.3
	B757	3	150	79.6
	B767	3	28	81.9
	DC10	3	70	82.9
	DC8S	2	17	90.4
	EA32	3	76	78.3
	F28	2	275	86.4
	MD11	3	31	85.5
	MD80	3	510	85.7
Other Aircraft			527	81.3

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January)

Site: T2 - East Angle Lake - Military Road and S 194th St

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	30	87.7
	B72Q	3	21	84.6
	B73A	2	29	85.6
	B73B		349	78.8
	B73Q	3	2	86.7
	B747	3	16	83.1
	B757	3	68	77.5
	B767	3	16	81.6
	DC10	3	49	82.8
	DC8S	2	8	89.7
	EA32	3	42	76.6
	F28	2	156	82.8
	MD11	3	16	85.5
	MD80	3	312	83.4
Other Aircraft			203	79.5

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

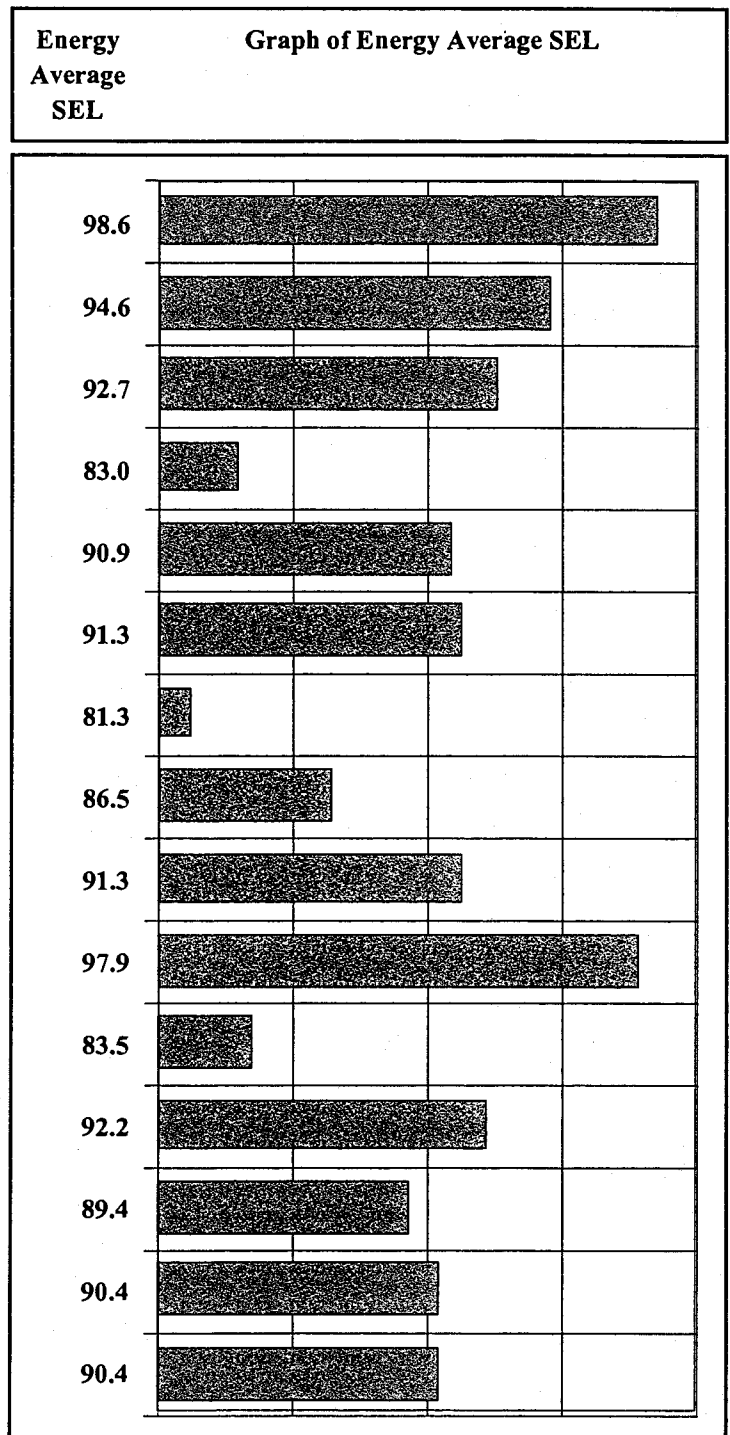
Period: Winter 1999 (January to February)

Site: R1 - Des Moines - Parkside Elem. (S 247th St)

Operations: D Runways: 16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count
	B727	2 140
	B72Q	3 106
	B73A	2 138
	B73B	1896
	B73Q	3 17
	B747	3 76
	B757	3 323
	B767	3 75
	DC10	3 236
	DC8S	2 34
	EA32	3 331
	F28	2 844
	MD11	3 82
	MD80	3 1482
Other Aircraft		353



Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study














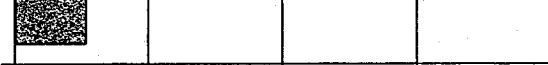

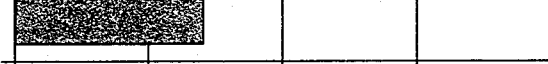



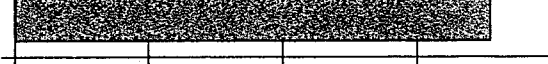

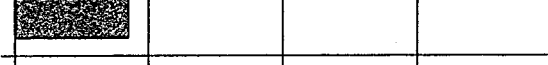

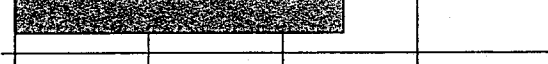





Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January to February)

Site: R2 - Des Moines - 12 Ave S and S 226th St.

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL	
	B727	2	126	98.6	
	B72Q	3	99	94.8	
	B73A	2	134	92.4	
	B73B		2064	85.3	
	B73Q	3	17	92.2	
	B747	3	72	113.9	
	B757	3	492	82.7	
	B767	3	72	87.1	
	DC10	3	221	90.5	
	DC8S	2	30	97.7	
	EA32	3	313	84.3	
	F28	2	693	92.3	
	MD11	3	79	89.4	
	MD80	3	1362	91.2	
Other Aircraft			395	91.0	

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January to February)

Site: R3 - Midway Elementary - 24th Ave S and S 223rd St

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	135	102.0
	B72Q	3	105	98.1
	B73A	2	153	94.5
	B73B		2127	96.8
	B73Q	3	16	92.9
	B747	3	76	94.0
	B757	3	515	84.0
	B767	3	79	89.2
	DC10	3	231	94.1
	DC8S	2	33	100.9
	EA32	3	346	85.8
	F28	2	829	94.9
	MD11	3	83	92.2
	MD80	3	1458	93.4
Other Aircraft			451	92.6

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

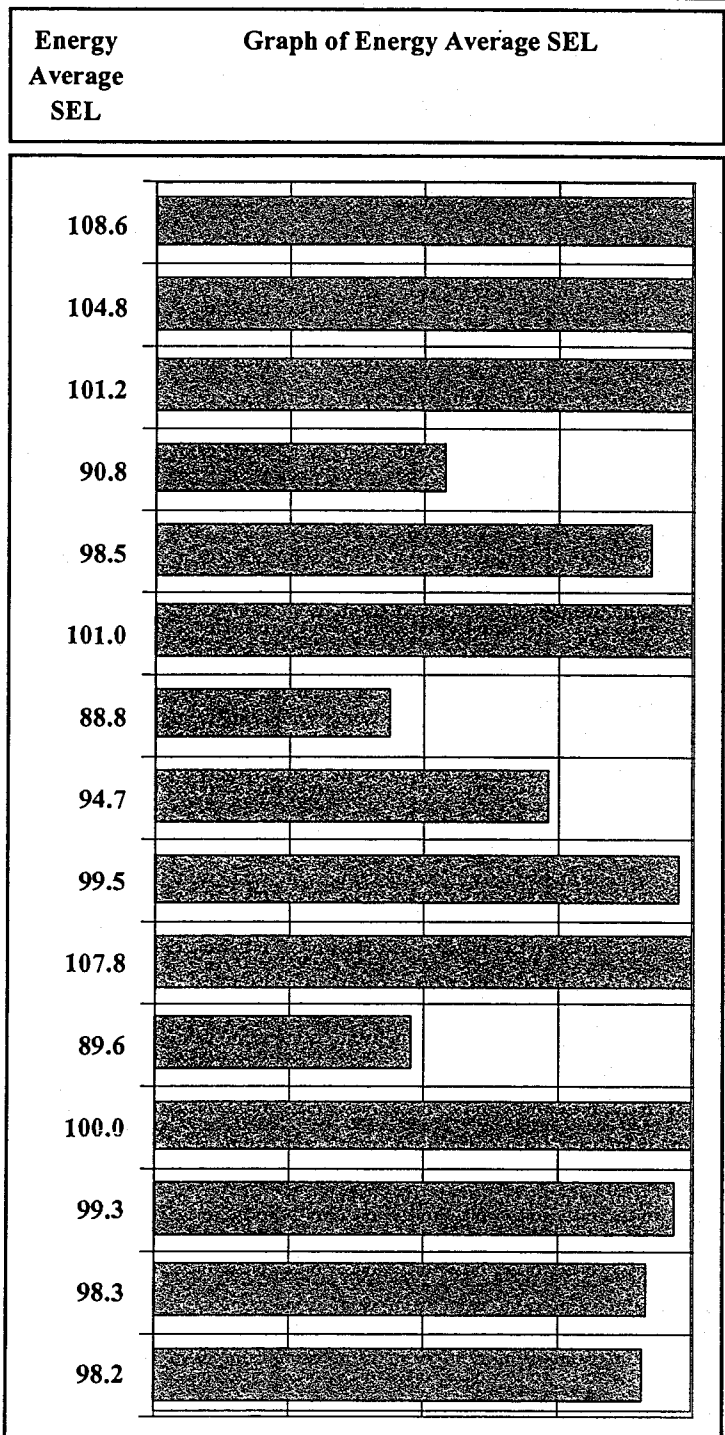
Period: Winter 1999 (January to February)

Site: R4 - Tyee Golf Course - 200th St and 20th Ave S

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count
	B727	2 135
	B72Q	3 106
	B73A	2 156
	B73B	2176
	B73Q	3 18
	B747	3 75
	B757	3 521
	B767	3 80
	DC10	3 236
	DC8S	2 32
	EA32	3 354
	F28	2 856
	MD11	3 85
	MD80	3 1479
Other Aircraft		554



Seattle-Tacoma International Airport Part 150 Study















Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January to February)

Site: R5 - Five Corners - S 171 and 12 Ave S

Operations: D Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	86	92.8
	B72Q	3	63	90.1
	B73A	2	104	90.2
	B73B		1054	82.2
	B73Q	3	13	89.3
	B747	3	35	83.8
	B757	3	213	83.1
	B767	3	40	83.1
	DC10	3	125	85.9
	DC8S	2	21	92.3
	EA32	3	86	81.6
	F28	2	554	90.2
	MD11	3	60	88.1
	MD80	3	997	87.8
Other Aircraft			396	87.6

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study








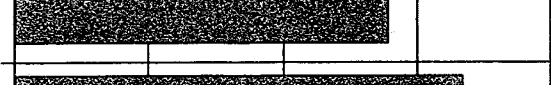





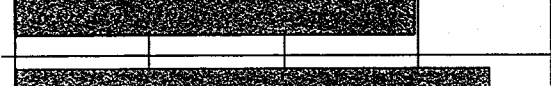



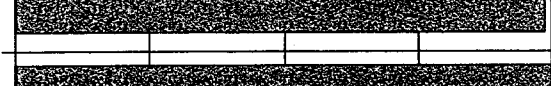







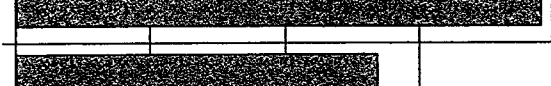


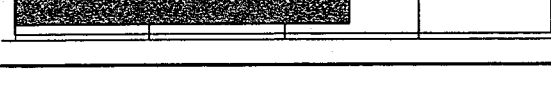
Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January to February)

Site: R6 - North Airport - S 146 St Between Runways

Operations: A Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL	
	B727	2	40	98.1	
	B72Q	3	34	97.6	
	B73A	2	31	94.2	
	B73B		380	94.0	
	B73Q	3	4	96.7	
	B747	3	19	99.2	
	B757	3	101	95.0	
	B767	3	11	97.7	
	DC10	3	54	99.7	
	DC8S	2	12	103.4	
	EA32	3	61	91.2	
	F28	2	152	94.0	
	MD11	3	18	99.6	
	MD80	3	314	93.5	
Other Aircraft			267	92.5	

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study












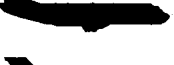


Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January to February)

Site: R7 - Boulevard Park - 13th Ave S and S 120th St

Operations: D Runways: 34L;34R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	8	102.7
	B72Q	3	9	98.3
	B73A	2	8	91.4
	B73B		171	86.6
	B73Q	3	3	95.9
	B747	3	6	92.8
	B757	3	46	83.2
	B767	3	8	88.0
	DC10	3	15	93.8
	DC8S	2	5	101.7
	EA32	3	23	84.1
	F28	2	70	95.7
	MD11	3	6	92.4
	MD80	3	129	95.0
Other Aircraft			53	96.2

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.

Seattle-Tacoma International Airport Part 150 Study














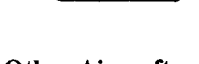
Single Event Noise Level by Aircraft Report

Period: Winter 1999 (January to February)

Site: R8 - Glendale School - S 104th St and 13th Ave S

Operations: A Runways: 16L;16R Tracks: ALL



Aircraft	FAR 36 Stage	Event Count	Energy Average SEL	Graph of Energy Average SEL
	B727	2	141	89.6
	B72Q	3	109	88.6
	B73A	2	100	85.1
	B73B		2000	84.7
	B73Q	3	34	85.7
	B747	3	71	89.6
	B757	3	466	84.3
	B767	3	70	86.6
	DC10	3	208	88.8
	DC8S	2	35	90.4
	EA32	3	298	82.5
	F28	2	797	85.5
	MD11	3	81	89.2
	MD80	3	1364	100.3
Other Aircraft			670	83.4

Note:

Energy Average is average of all events on a noise energy basis.

FAR36 Stage is for general categories and does not account for hushkitted aircraft.








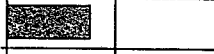

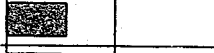
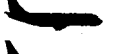
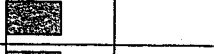

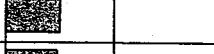

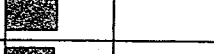

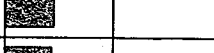

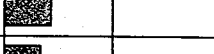



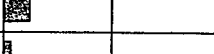


Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (February 2)

Site: T1 - Dash Point - 46th Place SW and W316th Pl



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	CKS	Feb 02, 21:27	DC8	2	CKS	O	U	79.8	90.8	
	FDX	Feb 02, 19:49	B722	2	FDX	D	16L	75.0	87.5	
	EIA	Feb 02, 22:44	DC9	2	EIA	D	16L	75.8	87.4	
	KHA	Feb 02, 20:53	DC9	2	KHA	D	16L	72.0	81.7	
	ASA	Feb 02, 22:46	MD80	3	ASA	D	16L	67.3	78.4	
	ASA	Feb 02, 23:03	B734	3	ASA	D	16L	66.3	77.8	
	ASA	Feb 02, 22:53	B734	3	ASA	D	16L	65.9	77.6	
	ASA	Feb 02, 19:25	B734	3	ASA	D	16L	66.6	77.3	
	ASA	Feb 02, 19:28	B734	3	ASA	D	16L	66.0	76.9	
	SWA	Feb 02, 18:58	B73Q	3	SWA	D	16L	68.6	76.6	
	FDX	Feb 02, 19:50	B722	2	FDX	D	16L	68.4	75.1	
	ASA	Feb 02, 21:52	MD80	3	ASA	D	16L	64.2	73.8	
	ASA	Feb 02, 21:57	B734	3	ASA	D	16L	63.2	71.2	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 8 to January 13)

Site: T2 - East Angle Lake - Military Road and S 194th St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	CKS	Jan 11, 17:43	DC8	2	CKS	D	16L	82.4	93.7	
	DAL	Jan 12, 11:07	B722	2	DAL	D	16L	79.4	92.4	
	CKS	Jan 12, 20:03	DC85	2	CKS	D	16L	80.5	91.8	
	WOA	Jan 11, 04:16	MD11	3	WOA	D	16L	79.5	90.9	
	UAL	Jan 13, 11:25	B722	2	UAL	D	16L	77.0	90.6	
	DAL	Jan 09, 14:53	B722	2	DAL	D	16L	77.4	90.4	
	DAL	Jan 11, 15:11	B722	2	DAL	D	16L	77.9	90.4	
	ASA	Jan 11, 07:26	MD80	3	ASA	D	16L	76.4	90.3	
	EVA	Jan 11, 04:00	B74B	3	EVA	D	16L	75.9	89.8	
	CKS	Jan 09, 11:34	DC8	2	CKS	D	16L	80.4	89.7	
	DAL	Jan 09, 13:19	B722	2	DAL	D	16L	77.8	89.6	
	CKS	Jan 11, 21:30	DC8	2	CKS	D	16L	76.9	89.6	
	DAL	Jan 09, 13:35	B722	2	DAL	D	16L	78.0	89.5	
	DAL	Jan 10, 13:13	B722	2	DAL	D	16L	78.7	89.4	
	CKS	Jan 09, 22:46	DC8	2	CKS	D	16L	77.3	89.2	
	DAL	Jan 11, 00:09	B722	2	DAL	D	16L	75.5	89.1	
	DAL	Jan 12, 13:28	B722	2	DAL	D	16L	76.9	88.9	
	CKS	Jan 08, 21:14	DC8	2	CKS	D	16L	75.4	88.7	
	ASA	Jan 11, 07:31	MD80	3	ASA	D	16L	77.0	88.6	
	SWA	Jan 09, 12:33	B73Q	3	SWA	D	16L	75.0	88.6	
	SCX	Jan 08, 19:07	B722	2	SCX	D	16L	76.9	88.5	
	ASA	Jan 09, 09:25	B734	3	ASA	D	16L	77.2	88.2	
	QXE	Jan 12, 19:13	F28	2	QXE	D	16L	72.3	87.8	
	DAL	Jan 11, 11:04	B72Q	3	DAL	D	16L	75.9	87.7	
	CKS	Jan 09, 06:27	B741	3	CKS	D	16L	73.8	87.6	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January to January 13)








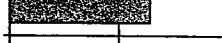



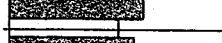











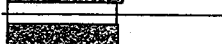



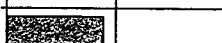



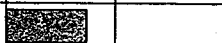

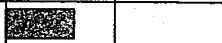


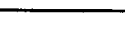

Site: T3 - Burien - Des Moines Mem. Dr. and S 170th PI



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 11, 00:09	B722	2	DAL	D	16L	76.7	91.0	
	UAL	Jan 09, 17:40	B722	2	UAL	D	16L	79.7	89.8	
	CXP	Jan 13, 07:53	B73A	2	CXP	D	16L	78.8	88.0	
	EIA	Jan 13, 07:35	DC9	2	EIA	D	16L	77.5	87.7	
	CKS	Jan 09, 22:46	DC8	2	CKS	D	16L	74.2	87.5	
	UAL	Jan 11, 11:28	B722	2	UAL	D	16R	74.7	87.5	
	SWA	Jan 13, 06:23	B733	3	SWA	D	16L	78.1	87.2	
	ASA	Jan 09, 09:58	MD80	3	ASA	D	16R	76.1	86.8	
	RYN	Jan 09, 10:10	B72Q	3	RYN	A	16R	78.7	86.8	
	QXE	Jan 11, 09:45	F28	2	QXE	D	16L	75.9	86.7	
	QXE	Jan 12, 15:27	F28	2	QXE	D	16R	77.5	86.4	
	CKS	Jan 09, 06:27	B741	3	CKS	D	16L	76.2	86.4	
	ASA	Jan 11, 21:40	MD80	3	ASA	D	16L	76.7	86.3	
	ASA	Jan 10, 11:23	MD80	3	ASA	D	16R	74.8	86.3	
	QXE	Jan 09, 11:55	F28	2	QXE	D	16L	77.3	86.3	
	KHA	Jan 13, 07:03	DC9	2	KHA	D	16L	76.2	86.3	
	TWA	Jan 12, 19:57	MD80	3	TWA	A	16R	75.5	86.1	
	FDX	Jan 10, 08:32	DC10	3	FDX	A	16R	76.0	86.0	
	NWA	Jan 09, 11:30	B752	3	NWA	A	16R	75.5	85.9	
	QXE	Jan 13, 08:00	F28	2	QXE	D	16R	74.5	85.8	
	QXE	Jan 12, 13:07	F28	2	QXE	D	16L	74.7	85.7	
	QXE	Jan 12, 14:23	F28	2	QXE	D	16L	74.5	85.6	
	TWA	Jan 09, 01:15	MD80	3	TWA	D	16L	70.9	85.6	
	U	Jan 08, 14:18	B73Q	3	U	D	16L	75.4	85.5	
	ASA	Jan 10, 06:34	B734	3	ASA	D	16L	75.6	85.5	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 19)
 Site: T4 - Lakeland School - S 360th St and 32nd Ave S



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 19, 10:44	B72Q	3	DAL	D	16L	80.9	92.6	
	DAL	Jan 19, 13:35	B72Q	3	DAL	D	16L	76.1	88.8	
	UAL	Jan 19, 11:27	B72Q	3	UAL	D	16L	75.7	87.6	
	ASA	Jan 19, 12:16	MD80	3	ASA	D	16R	73.7	85.8	
	DAL	Jan 19, 12:02	B722	2	DAL	D	16R	74.8	84.8	
	QXE	Jan 19, 11:38	F28	2	QXE	D	16L	71.2	84.7	
	QXE	Jan 19, 12:47	F28	2	QXE	D	16L	69.8	82.9	
	AAL	Jan 19, 12:21	MD80	3	AAL	D	16L	72.4	81.9	
	ASA	Jan 19, 11:32	MD80	3	ASA	D	16L	70.3	81.7	
	SWA	Jan 19, 12:33	B73Q	3	SWA	D	16L	69.1	81.5	
	ASA	Jan 19, 13:31	MD80	3	ASA	D	16L	71.9	81.2	
	ASA	Jan 19, 12:07	MD80	3	ASA	D	16R	69.2	81.2	
	DAL	Jan 19, 13:19	B72Q	3	DAL	D	16L	69.8	80.4	
	ASA	Jan 19, 13:03	MD80	3	ASA	D	16L	69.7	79.6	
	ASA	Jan 19, 12:46	B734	3	ASA	D	16L	67.4	77.9	
	SWA	Jan 19, 11:06	B733	3	SWA	D	16L	66.2	76.6	
	ASA	Jan 19, 12:26	B734	3	ASA	D	16L	65.6	74.9	
	AAL	Jan 19, 11:02	MD80	3	AAL	D	16L	65.2	72.7	
	QXE	Jan 19, 10:45	DH8B		QXE	D	16L	60.0	69.9	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 19)

Site: T5 - Angle Lake Park - 33rd Ave and S 194th St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 19, 15:01	B722	2	DAL	D	16L	81.1	92.5	
	ASA	Jan 19, 17:24	MD80	3	ASA	D	16L	81.3	92.5	
	QXE	Jan 19, 16:28	F28	2	QXE	D	16L	81.3	92.2	
	ASA	Jan 19, 16:45	MD80	3	ASA	D	16L	82.7	91.9	
	ASA	Jan 19, 16:26	MD80	3	ASA	D	16L	81.7	91.8	
	ASA	Jan 19, 15:27	MD80	3	ASA	D	16L	80.9	91.8	
	ASA	Jan 19, 15:06	MD80	3	ASA	D	16L	83.5	91.5	
	QXE	Jan 19, 16:38	F28	2	QXE	D	16L	79.6	90.7	
	ASA	Jan 19, 17:26	MD80	3	ASA	D	16L	80.2	90.7	
	QXE	Jan 19, 14:59	F28	2	QXE	D	16L	78.5	90.4	
	QXE	Jan 19, 14:57	F28	2	QXE	D	16L	79.3	89.8	
	ASA	Jan 19, 15:39	MD80	3	ASA	D	16L	79.4	89.8	
	ROA	Jan 19, 16:07	MD83	3	ROA	D	16R	80.6	89.7	
	QXE	Jan 19, 15:03	F28	2	QXE	D	16L	79.9	89.5	
	MPH	Jan 19, 14:47	B742	3	MPH	D	16L	80.6	89.3	
	AAL	Jan 19, 15:56	MD80	3	AAL	D	16L	79.5	89.1	
	QXE	Jan 19, 14:37	F28	2	QXE	D	16L	77.7	89.0	
	NWA	Jan 19, 15:50	DC10	3	NWA	D	16L	77.9	88.9	
	EIA	Jan 19, 14:49	DC9	2	EIA	D	16L	78.4	88.8	
	QXE	Jan 19, 15:11	F28	2	QXE	D	16R	77.8	88.0	
	ASA	Jan 19, 16:31	B734	3	ASA	D	16L	77.3	87.6	
	ASA	Jan 19, 15:40	B734	3	ASA	D	16L	76.8	87.2	
	NWA	Jan 19, 14:53	DC10	3	NWA	D	16L	78.3	87.1	
	SWA	Jan 19, 15:12	B733	3	SWA	D	16L	76.7	86.7	
	SWA	Jan 19, 15:25	B733	3	SWA	D	16L	77.1	86.5	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 11 to January 29)

Site: T9 - University District - NE 70th St and 15 Ave NE



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 28, 12:36	B722	2	DAL	A	16R	72.4	83.2	
	NWA	Jan 28, 13:06	DC10	3	NWA	A	16R	73.8	83.1	
	DAL	Jan 28, 13:47	B72Q	3	DAL	A	16R	74.2	82.3	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 29 to February 3)

Site: T19 - Capital Hill - 730 E. 16th St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	COA	Feb 03, 12:11	B738	3	COA	A	16R	85.0	94.3	
	KHA	Feb 02, 03:45	B727	2	KHA	A	16L	81.0	91.6	
	TWA	Jan 29, 13:44	B752	3	TWA	A	16R	82.3	91.0	
	COA	Feb 01, 12:18	B738	3	COA	A	16R	75.9	90.8	
	CKS	Jan 29, 16:17	B741	3	CKS	A	16R	77.8	90.2	
	AWE	Feb 01, 15:57	A320	3	AWE	A	16R	76.2	89.1	
	DHL	Feb 02, 05:28	B721	2	DHL	A	16R	78.0	89.1	
	CKS	Jan 30, 16:09	B741	3	CKS	A	16R	77.5	89.0	
	ASA	Feb 01, 12:12	B734	3	ASA	A	16R	75.7	88.7	
	NWA	Jan 31, 12:44	DC10	3	NWA	A	16R	77.5	88.7	
	NWA	Feb 03, 08:47	B742	3	NWA	A	16R	77.9	88.5	
	ASA	Feb 01, 12:20	B734	3	ASA	A	16R	76.4	88.5	
	CES	Jan 29, 14:53	MD11	3	CES	A	16R	76.5	88.4	
	NWA	Jan 29, 11:54	DC10	3	NWA	A	16R	76.3	88.4	
	RYN	Feb 02, 11:52	B72Q	3	RYN	A	16R	77.1	88.0	
	ASA	Feb 01, 12:21	B734	3	ASA	A	16R	74.4	87.6	
	CLX	Feb 01, 15:20	B74B	3	CLX	A	16R	75.2	87.6	
	KHA	Jan 29, 17:40	B722	2	KHA	A	16R	77.4	87.6	
	COA	Jan 29, 19:36	MD80	3	COA	A	16R	79.3	87.5	
	AWE	Feb 01, 15:57	A320	3	AWE	A	16R	76.9	87.5	
	NWA	Feb 02, 05:21	DC10	3	NWA	A	16R	76.1	87.4	
	BAW	Jan 31, 16:00	B742	3	BAW	A	16R	75.5	87.4	
	QXE	Feb 01, 14:09	F28	2	QXE	A	16R	77.2	87.4	
	EWW	Feb 03, 10:42	DC87	2	EWW	A	16R	76.4	87.3	
	UAL	Feb 01, 08:04	B74B	3	UAL	A	16R	74.6	87.2	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 21 to February 1)

Site: PN1 - South Park - 12th Ave S and S Sullivan St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 24, 11:01	B722	2	DAL	D	34R	90.0	101.8	
	NWA	Jan 22, 13:34	B742	3	NWA	D	34R	88.4	99.2	
	DAL	Jan 23, 15:21	B722	2	DAL	D	34R	86.5	99.1	
	CKS	Jan 22, 21:28	DC8	2	CKS	D	34R	86.8	98.9	
	CKS	Jan 23, 22:27	DC8	2	CKS	D	34R	86.1	98.7	
	SCX	Jan 22, 17:55	B722	2	SCX	D	34R	86.9	98.2	
	DAL	Jan 23, 13:43	B72Q	3	DAL	D	34R	87.0	97.1	
	NWA	Jan 26, 07:19	B742	3	NWA	D	34R	87.3	96.7	
	EWV	Jan 22, 19:14	DC8	2	EWV	D	34R	84.7	96.6	
	CKS	Jan 25, 21:53	DC8	2	CKS	D	34R	84.3	96.5	
	DHL	Jan 25, 20:17	B722	2	DHL	D	34R	84.3	96.0	
	KHA	Jan 26, 04:55	B722	2	KHA	D	34R	85.6	95.8	
	UAL	Jan 23, 17:41	B722	2	UAL	D	34R	83.2	95.6	
	EWV	Jan 25, 19:35	DC8	2	EWV	D	34R	83.3	95.1	
	DAL	Jan 24, 11:28	B72Q	3	DAL	D	34L	81.9	94.7	
	NWA	Jan 22, 13:14	DC10	3	NWA	D	34R	85.6	94.7	
	EIA	Jan 22, 14:51	U		EIA	D	34L	83.8	94.7	
	QXE	Jan 22, 20:44	F28	2	QXE	D	34R	82.6	94.4	
	BAW	Jan 23, 18:02	B742	3	BAW	D	34R	81.7	94.1	
	UAL	Jan 24, 11:27	B72Q	3	UAL	D	34R	83.3	94.0	
	AAL	Jan 24, 07:56	MD80	3	AAL	D	34R	80.0	94.0	
	QXE	Jan 22, 21:35	F28	2	QXE	D	34R	81.5	93.9	
	QXE	Jan 22, 14:46	F28	2	QXE	D	34R	83.9	93.7	
	QXE	Jan 22, 16:46	F28	2	QXE	D	34R	82.5	93.5	
	QXE	Jan 22, 15:49	F28	2	QXE	D	34R	82.6	93.3	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 22 to February 1)

Site: PN2 - Rainier Valley - S Brandon St and 37th Ave S



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 22, 10:26	B722	2	DAL	A	16R	81.2	90.5	
	ASA	Jan 27, 18:11	B734	3	ASA	A	16R	78.8	88.2	
	UAL	Jan 24, 11:28	B72Q	3	UAL	D	34R	75.2	87.6	
	QXE	Jan 27, 19:57	F28	2	QXE	A	16R	74.7	87.4	
	DAL	Jan 22, 15:00	B722	2	DAL	D	34R	75.6	86.8	
	QXE	Jan 24, 09:52	F28	2	QXE	D	34R	72.8	86.4	
	DAL	Jan 24, 11:29	B72Q	3	DAL	D	34L	74.4	85.7	
	NWA	Jan 27, 11:31	B752	3	NWA	A	16R	77.0	85.6	
	QXE	Jan 28, 14:00	F28	2	QXE	A	16R	75.2	85.4	
	DAL	Jan 23, 13:44	B72Q	3	DAL	D	34R	73.8	85.1	
	QXE	Jan 24, 11:30	F28	2	QXE	D	34R	70.6	84.8	
	TWA	Jan 24, 09:22	MD80	3	TWA	D	34R	72.5	84.8	
	ASA	Jan 24, 10:20	MD80	3	ASA	D	34L	73.5	84.7	
	ASA	Jan 22, 20:42	MD80	3	ASA	D	34R	72.3	84.6	
	QXE	Jan 24, 10:08	F28	2	QXE	D	34R	72.1	84.6	
	ASA	Jan 24, 10:07	MD80	3	ASA	D	34R	74.4	84.5	
	SCX	Jan 25, 19:04	B72Q	3	SCX	D	34R	74.0	84.5	
	NWA	Jan 31, 12:45	DC10	3	NWA	A	16R	79.0	84.4	
	QXE	Jan 27, 19:36	F28	2	QXE	A	16R	73.7	84.3	
	KHA	Jan 22, 20:19	B727	2	KHA	D	34L	73.9	84.3	
	ASA	Jan 26, 00:59	U		ASA	D	34R	72.2	84.1	
	ASA	Jan 24, 08:53	MD80	3	ASA	D	34R	72.4	83.9	
	QXE	Jan 29, 20:06	F28	2	QXE	A	16R	74.1	83.8	
	ASA	Jan 22, 16:35	MD80	3	ASA	D	34R	73.6	83.7	
	QXE	Feb 01, 11:35	F28	2	QXE	A	16R	74.0	83.7	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 21 to February 1)

Site: PN3 - Magnolia - 37th Ave W and W Smith St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	FDX	Jan 25, 19:59	DC10	3	FDX	D	34R	79.8	91.9	
	UPS	Jan 29, 17:15	B742	3	UPS	O	U	80.3	90.7	
	NWA	Jan 22, 13:36	B742	3	NWA	D	34R	79.0	89.9	
	JUD	Jan 23, 17:17	B722	2	JUD	O	U	78.5	89.6	
	UPS	Jan 26, 17:24	B741	3	UPS	O	U	79.6	89.2	
	ATN	Jan 30, 07:30	DC87	2	ATN	O	U	78.6	88.5	
AN12	HLA	Jan 29, 07:45	AN12		HLA	O	U	77.1	88.2	
	RAX	Jan 21, 18:18	LJ25	2	RAX	O	U	78.7	88.2	
	UPS	Jan 21, 16:56	B741	3	UPS	O	U	77.2	88.1	
	U	Jan 22, 13:44	CL65	3	U	O	U	73.3	87.9	
	JUD	Jan 22, 12:25	B722	2	JUD	O	U	76.7	87.6	
	U	Jan 27, 15:13	LJ25	2	U	O	U	75.3	87.6	
	UPS	Jan 28, 17:11	B741	3	UPS	O	U	76.6	87.6	
	ABX	Jan 30, 05:37	DC8Q	3	ABX	O	U	76.9	87.5	
	JUD	Jan 27, 10:32	B721	2	JUD	O	U	77.2	86.7	
	UPS	Jan 27, 17:24	B741	3	UPS	O	U	74.6	86.4	
	ATN	Jan 28, 07:08	DC87	2	ATN	O	U	75.5	86.1	
	ABX	Jan 29, 05:40	DC8Q	3	ABX	O	U	75.3	86.1	
	U	Jan 29, 15:17	WW24	2	U	O	U	79.8	86.0	
	ASA	Jan 26, 01:01	U		ASA	D	34R	71.6	86.0	
	ATN	Jan 29, 07:05	DC87	2	ATN	O	U	75.2	85.7	
	ABX	Jan 26, 17:16	DC8Q	3	ABX	O	U	75.2	85.7	
	ATN	Jan 27, 06:45	DC87	2	ATN	O	U	75.1	85.5	
	RYN	Jan 22, 13:29	B72Q	3	RYN	D	34R	73.4	85.4	
	U	Jan 27, 18:29	B722	2	U	O	U	75.1	85.3	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 22 to February 1)


















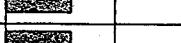

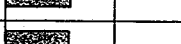

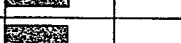

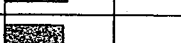



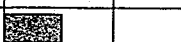











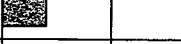



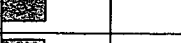

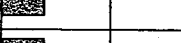

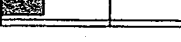


Site: PN4 - Leschi - 31st Ave and E Alder St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	ASA	Jan 22, 20:18	MD80	3	ASA	D	34R	76.6	87.4	
	ASA	Jan 22, 20:59	MD80	3	ASA	D	34R	75.3	85.9	
	DAL	Jan 28, 12:39	B722	2	DAL	A	16R	74.9	85.6	
	ASA	Jan 22, 13:37	MD80	3	ASA	D	34R	73.9	85.6	
	NWA	Jan 29, 05:01	DC10	3	NWA	A	16L	78.4	85.3	
	CKS	Jan 29, 16:17	B741	3	CKS	A	16R	71.8	85.2	
	EIA	Jan 28, 22:25	DC9	2	EIA	A	16R	74.0	84.8	
	QXE	Jan 24, 11:31	F28	2	QXE	D	34R	71.5	84.6	
	EIA	Jan 30, 14:04	DC9	2	EIA	A	16R	73.9	83.0	
	AAL	Jan 22, 10:03	MD11	3	AAL	A	16R	69.8	82.5	
	NWA	Jan 24, 08:46	DC10	3	NWA	D	34R	69.2	82.1	
	CKS	Jan 30, 16:09	B741	3	CKS	A	16R	69.4	82.1	
	DAL	Jan 28, 12:38	B722	2	DAL	A	16R	72.6	82.1	
	ASA	Jan 22, 21:05	B734	3	ASA	D	34R	70.7	82.0	
	ASA	Jan 22, 15:04	U		ASA	D	34R	71.2	82.0	
	ASA	Jan 22, 13:29	B734	3	ASA	D	34R	69.7	81.9	
	ASA	Jan 24, 09:21	MD80	3	ASA	D	34R	70.2	81.7	
	ASA	Jan 25, 21:48	MD80	3	ASA	D	34L	68.3	81.6	
	DAL	Jan 28, 11:02	B738	3	DAL	A	16R	67.8	81.5	
	TWA	Jan 29, 13:45	B752	3	TWA	A	16R	70.5	81.4	
	NWA	Jan 22, 13:24	A320		NWA	D	34R	69.8	81.3	
	ASA	Jan 25, 19:42	MD80	3	ASA	D	34R	69.7	81.3	
	ROA	Jan 22, 21:42	MD80	3	ROA	D	34R	71.1	81.3	
	SAS	Jan 22, 13:54	B763	3	SAS	D	34R	68.8	81.3	
	EVA	Jan 22, 14:08	B74B	3	EVA	D	34R	67.8	81.2	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 21 to February 1)
 Site: PN5 - Medina - NE 6th St and 86th Ave NE



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 22, 15:01	B722	2	DAL	D	34R	84.0	96.0	
	DAL	Jan 23, 15:23	B722	2	DAL	D	34R	80.6	91.5	
	DAL	Jan 23, 13:45	B72Q	3	DAL	D	34R	74.1	87.7	
	UAL	Jan 24, 11:29	B72Q	3	UAL	D	34R	73.9	87.2	
	EWW	Jan 22, 19:16	DC8	2	EWW	D	34R	75.8	87.1	
	SCX	Jan 22, 17:57	B722	2	SCX	D	34R	77.2	87.0	
	DAL	Jan 24, 11:03	B722	2	DAL	D	34R	72.8	86.8	
	QXE	Jan 22, 14:39	F28	2	QXE	D	34R	73.6	86.6	
	QXE	Jan 22, 15:07	F28	2	QXE	D	34R	72.5	86.0	
	DAL	Jan 24, 10:45	B72Q	3	DAL	D	34R	72.4	86.0	
	QXE	Jan 22, 14:48	F28	2	QXE	D	34R	73.3	85.9	
	UAL	Jan 23, 17:43	B722	2	UAL	D	34R	72.4	85.8	
	TWA	Jan 22, 12:38	MD80	3	TWA	D	34R	74.1	85.4	
	EIA	Jan 22, 14:53	U		EIA	D	34L	71.4	85.4	
	KHA	Jan 22, 20:21	B727	2	KHA	D	34L	72.7	85.3	
	QXE	Jan 22, 21:38	F28	2	QXE	D	34R	71.4	85.0	
	QXE	Jan 22, 18:52	F28	2	QXE	D	34L	71.2	84.9	
	QXE	Jan 22, 14:07	F28	2	QXE	D	34R	72.4	84.6	
	ASA	Jan 22, 15:54	MD80	3	ASA	D	34R	72.9	84.4	
	ASA	Jan 22, 13:03	MD80	3	ASA	D	34R	72.5	84.4	
	QXE	Jan 22, 15:23	F28	2	QXE	D	34R	70.2	84.1	
	QXE	Jan 22, 20:46	F28	2	QXE	D	34R	70.6	84.1	
	QXE	Jan 22, 13:34	F28	2	QXE	D	34R	69.9	84.1	
	QXE	Jan 22, 16:48	F28	2	QXE	D	34R	70.9	84.0	
	ASA	Jan 22, 13:38	MD80	3	ASA	D	34R	72.0	84.0	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 21 to February 2)

Site: C1 - Highline Hospital - 9th Ave SW and SW 160th St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	ASA	Jan 28, 10:58	B734	3	ASA	A	16R	74.6	88.1	
	AAL	Jan 25, 11:31	MD80	3	AAL	A	16R	71.1	88.0	
	SWA	Jan 22, 10:49	B733	3	SWA	A	16R	74.2	87.8	
	AAL	Jan 25, 06:14	MD80	3	AAL	D	16L	75.2	87.8	
	NWA	Jan 28, 13:12	DC10	3	NWA	A	16R	72.5	87.7	
	QXE	Jan 30, 08:17	F28	2	QXE	A	16R	77.6	87.3	
	SWA	Jan 26, 11:22	B73A	2	SWA	A	16R	77.6	87.3	
	DAL	Jan 25, 11:29	B722	2	DAL	D	16L	73.2	86.9	
	TWA	Jan 30, 10:43	MD80	3	TWA	A	16R	74.7	86.7	
	ASA	Jan 25, 07:38	MD80	3	ASA	D	16L	75.1	86.7	
	DAL	Jan 28, 11:24	B752	3	DAL	A	16R	69.6	86.7	
	ASA	Jan 27, 11:01	B734	3	ASA	A	16R	72.1	86.5	
	ASA	Jan 30, 08:16	MD80	3	ASA	D	16L	77.0	86.4	
	SWA	Jan 26, 12:23	B73Q	3	SWA	D	16L	69.6	86.4	
	DAL	Jan 29, 14:59	B722	2	DAL	D	16L	71.0	86.2	
	EIA	Jan 30, 07:53	DC9	2	EIA	D	16L	78.1	86.2	
	ASA	Jan 25, 14:52	B734	3	ASA	A	16R	72.4	86.2	
	UAL	Jan 30, 08:34	B74B	3	UAL	A	16R	77.7	86.2	
	DAL	Jan 25, 10:58	B722	2	DAL	D	16L	76.7	86.1	
	NWA	Jan 22, 10:52	DC10	3	NWA	A	16R	74.9	86.0	
	USA	Jan 29, 11:38	A319	3	USA	A	16R	70.9	85.9	
	ASA	Jan 30, 08:26	MD80	3	ASA	A	16R	73.2	85.7	
	ASA	Jan 26, 12:15	MD80	3	ASA	D	16L	73.1	85.4	
	ASA	Jan 25, 07:37	MD80	3	ASA	D	16L	73.6	85.3	
	CKS	Jan 25, 22:15	DC85	2	CKS	D	34R	73.1	85.3	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 21 to February 2)

Site: C2 - McMicken Heights - S 164th St and 34th Ave S



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 28, 10:58	B722	2	DAL	D	16L	85.1	96.6	
	DAL	Jan 29, 11:37	B722	2	DAL	D	16L	83.3	95.4	
	DAL	Jan 27, 14:53	B722	2	DAL	D	16L	81.5	94.6	
	SCX	Jan 22, 17:54	B722	2	SCX	D	34R	81.4	94.1	
	DAL	Feb 02, 10:44	B722	2	DAL	D	16L	81.4	94.0	
	QXE	Jan 28, 20:27	F28	2	QXE	D	16L	81.6	93.8	
	FDX	Jan 22, 10:49	B722	2	FDX	D	16L	84.5	93.8	
	QXE	Jan 27, 19:56	F28	2	QXE	D	16L	81.5	93.5	
	DAL	Feb 01, 14:51	B722	2	DAL	D	16L	81.3	93.4	
	QXE	Jan 27, 20:10	F28	2	QXE	D	16L	82.3	93.2	
	DAL	Jan 29, 13:03	B722	2	DAL	D	16L	84.3	93.2	
	CKS	Jan 28, 21:39	DC8	2	CKS	D	16L	82.0	93.2	
	FDX	Jan 27, 19:49	B722	2	FDX	D	16L	82.5	93.1	
	DAL	Jan 29, 11:01	B722	2	DAL	D	16L	79.2	92.9	
	QXE	Feb 02, 09:55	F28	2	QXE	D	16L	83.3	92.9	
	QXE	Jan 28, 15:27	F28	2	QXE	D	16L	82.2	92.9	
	QXE	Jan 27, 17:46	F28	2	QXE	D	16L	81.0	92.8	
	QXE	Jan 27, 15:18	F28	2	QXE	D	16L	83.5	92.7	
	QXE	Jan 28, 21:48	F28	2	QXE	D	16L	81.0	92.6	
	QXE	Jan 28, 18:37	F28	2	QXE	D	16L	81.5	92.5	
	QXE	Jan 27, 19:47	F28	2	QXE	D	16L	81.0	92.5	
	FDX	Jan 28, 16:23	B721	2	FDX	D	16L	81.2	92.5	
	DAL	Jan 24, 11:00	B722	2	DAL	D	34R	80.1	92.5	
	QXE	Feb 02, 08:40	F28	2	QXE	D	16L	83.0	92.5	
	QXE	Jan 28, 22:30	F28	2	QXE	D	16L	81.5	92.5	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 13 to January 21)
 Site: C3 - Normandy Park - S 185th and 3rd Ave S



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 17, 15:03	B722	2	DAL	D	16L	82.3	92.7	
	COA	Jan 19, 08:42	MD80	3	COA	D	16L	76.5	91.8	
	CKS	Jan 19, 19:50	DC8	2	CKS	D	16L	83.0	91.8	
	DAL	Jan 17, 11:23	B722	2	DAL	D	16L	79.7	91.0	
	CKS	Jan 14, 19:55	DC8	2	CKS	D	16L	78.9	90.0	
	ASA	Jan 16, 01:33	B734	3	ASA	D	16R	74.5	89.9	
	TWA	Jan 19, 09:06	MD80	3	TWA	D	16R	76.2	89.7	
	DAL	Jan 18, 11:05	B722	2	DAL	D	16L	76.9	89.5	
	DAL	Jan 16, 10:59	B722	2	DAL	D	16L	77.9	89.1	
	CKS	Jan 13, 19:12	DC8	2	CKS	D	16L	76.2	89.0	
	ASA	Jan 20, 07:33	MD80	3	ASA	D	16L	73.8	89.0	
	DAL	Jan 16, 11:22	B72Q	3	DAL	D	16L	79.3	88.9	
	DAL	Jan 17, 10:45	B722	2	DAL	D	16L	79.5	88.9	
	U	Jan 17, 01:34	LJ25	2	U	D	16L	78.8	88.6	
	NWA	Jan 19, 08:50	DC10	3	NWA	D	16L	76.7	88.5	
	DHL	Jan 13, 20:25	B722	2	DHL	D	16L	73.4	88.3	
	CKS	Jan 20, 18:55	DC8	2	CKS	D	16R	76.0	88.3	
	CKS	Jan 19, 12:29	DC8	2	CKS	D	16L	77.6	88.2	
	DAL	Jan 18, 14:59	B722	2	DAL	D	16L	75.5	88.2	
	ROA	Jan 16, 07:08	MD83	3	ROA	D	16L	75.8	88.2	
	ASA	Jan 17, 20:10	MD80	3	ASA	D	16L	71.8	88.0	
	DAL	Jan 17, 13:24	B72Q	3	DAL	D	16L	74.0	88.0	
	SWA	Jan 18, 19:30	B732	2	SWA	D	16L	73.9	88.0	
	DAL	Jan 17, 13:34	B72Q	3	DAL	D	16L	76.5	88.0	
	EWV	Jan 18, 18:56	DC8	2	EWV	D	16L	76.0	87.9	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 13 to January 21)
 Site: C4 - E Seatac - 38th Ave S and S 183rd St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	QXE	Jan 13, 18:16	F28	2	QXE	D	16L	82.3	96.5	
	DAL	Jan 18, 11:05	B722	2	DAL	D	16L	84.3	95.3	
	DAL	Jan 18, 14:59	B722	2	DAL	D	16L	82.3	94.8	
	DAL	Jan 15, 16:17	B722	2	DAL	D	16L	85.7	94.6	
	DAL	Jan 14, 15:02	B722	2	DAL	D	16L	81.3	93.8	
	SCX	Jan 20, 17:34	U		SCX	D	16L	81.4	93.6	
	DAL	Jan 14, 13:44	B722	2	DAL	D	16L	81.4	93.4	
	DAL	Jan 16, 10:59	B722	2	DAL	D	16L	81.4	93.4	
	DAL	Jan 14, 11:43	B722	2	DAL	D	16L	80.8	93.2	
	QXE	Jan 16, 10:15	F28	2	QXE	D	16L	87.3	93.0	
	CKS	Jan 13, 19:12	DC8	2	CKS	D	16L	81.0	92.9	
	CKS	Jan 14, 18:35	DC8	2	CKS	D	16L	83.6	92.5	
	SWA	Jan 18, 19:29	B732	2	SWA	D	16L	77.5	92.4	
	CKS	Jan 14, 19:55	DC8	2	CKS	D	16L	80.6	92.4	
	DAL	Jan 17, 15:03	B722	2	DAL	D	16L	80.2	91.9	
	CKS	Jan 19, 12:29	DC8	2	CKS	D	16L	80.6	91.8	
	CKS	Jan 19, 19:50	DC8	2	CKS	D	16L	79.5	91.8	
	UAL	Jan 14, 11:26	B722	2	UAL	D	16L	78.0	91.7	
	CKS	Jan 17, 21:41	DC8	2	CKS	D	16L	78.0	91.5	
	SWA	Jan 18, 16:30	B732	2	SWA	D	16L	81.7	91.5	
	DAL	Jan 14, 10:42	B722	2	DAL	D	16L	79.7	91.5	
	SWA	Jan 14, 08:21	B732	2	SWA	D	16L	80.8	91.5	
	CKS	Jan 16, 21:31	DC8	2	CKS	D	16L	81.2	91.4	
	UAL	Jan 17, 11:28	B722	2	UAL	D	16L	79.7	91.3	
	UAL	Jan 16, 17:36	B722	2	UAL	D	16L	80.0	91.3	

Seattle-Tacoma International Airport Part 150 Study

Loudest Aircraft Noise Events Site Report

Period: Winter 1999 (January 13 to February 4)


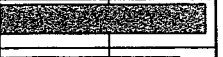



































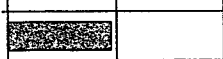

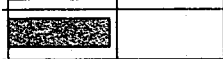



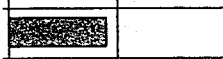



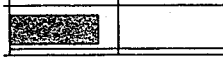


Site: R2 - Des Moines - 12 Ave S and S 226th St.



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 29, 15:00	B722	2	DAL	D	16L	100.1	105.5	
	UAL	Jan 17, 11:29	B722	2	UAL	D	16L	96.3	105.4	
	DAL	Jan 22, 10:58	B722	2	DAL	D	16L	94.8	105.4	
	DAL	Jan 18, 11:05	B722	2	DAL	D	16L	95.8	104.7	
	SCX	Jan 20, 17:34	U		SCX	D	16L	93.4	104.3	
	UAL	Jan 25, 11:32	B722	2	UAL	D	16L	94.8	103.8	
	DAL	Jan 30, 11:05	B722	2	DAL	D	16L	92.2	103.0	
	UAL	Feb 03, 11:30	B722	2	UAL	D	16L	93.6	102.8	
	DAL	Jan 15, 16:18	B722	2	DAL	D	16L	92.2	102.6	
	UAL	Jan 30, 18:23	B722	2	UAL	D	16L	91.5	102.6	
	NWA	Feb 03, 10:34	B742	3	NWA	D	16L	94.1	102.4	
	DAL	Jan 17, 15:04	B722	2	DAL	D	16L	91.5	102.1	
	DAL	Feb 02, 11:04	B722	2	DAL	D	16L	92.3	101.8	
	CKS	Jan 19, 12:30	DC86	2	CKS	D	16L	90.5	101.8	
	DAL	Jan 19, 11:05	B722	2	DAL	D	16L	93.1	101.8	
	DAL	Feb 03, 10:44	B722	2	DAL	D	16L	93.0	101.7	
	NWA	Jan 19, 08:59	B742	3	NWA	D	16L	92.7	101.7	
	DAL	Jan 25, 14:52	B722	2	DAL	D	16L	92.3	101.7	
	DAL	Jan 20, 13:30	B722	2	DAL	D	16L	92.2	101.6	
	DAL	Feb 02, 14:54	B722	2	DAL	D	16L	93.3	101.5	
	DAL	Jan 17, 10:45	B722	2	DAL	D	16L	93.9	101.5	
	DAL	Jan 24, 13:08	B722	2	DAL	D	16L	90.4	101.5	
	DAL	Feb 02, 10:45	B722	2	DAL	D	16L	91.6	101.5	
	DAL	Feb 01, 14:52	B722	2	DAL	D	16L	89.1	101.5	
	DAL	Jan 25, 11:30	B722	2	DAL	D	16L	91.4	101.3	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 13 to February 4)
 Site: R3 - Midway Elementary - 24th Ave S and S 223rd St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Feb 02, 11:04	B722	2	DAL	D	16L	98.7	109.5	
	DAL	Jan 30, 14:53	B722	2	DAL	D	16L	98.4	108.3	
	DAL	Jan 31, 11:01	B722	2	DAL	D	16L	97.4	107.8	
	DAL	Jan 18, 11:05	B722	2	DAL	D	16L	98.2	106.8	
	DAL	Jan 30, 11:05	B722	2	DAL	D	16L	96.7	106.5	
	DAL	Feb 04, 14:54	B722	2	DAL	D	16L	96.0	106.5	
	DAL	Jan 14, 15:03	B722	2	DAL	D	16L	99.7	106.3	
	UAL	Jan 26, 11:23	B722	2	UAL	D	16L	97.7	106.2	
	DAL	Jan 31, 15:02	B722	2	DAL	D	16L	95.8	106.1	
	DAL	Jan 24, 13:08	B722	2	DAL	D	16L	96.5	106.0	
	UAL	Feb 02, 11:31	B72Q	3	UAL	D	16L	95.0	106.0	
	DAL	Jan 15, 16:18	B722	2	DAL	D	16L	96.2	105.9	
	DAL	Jan 21, 15:15	B722	2	DAL	D	16L	97.7	105.6	
	DAL	Feb 01, 10:59	B722	2	DAL	D	16L	94.5	105.6	
	SCX	Jan 20, 17:34	U		SCX	D	16L	95.1	105.4	
	DAL	Jan 22, 10:58	B722	2	DAL	D	16L	95.1	105.3	
	DAL	Feb 04, 11:00	B722	2	DAL	D	16L	98.1	105.2	
	DAL	Jan 17, 15:04	B722	2	DAL	D	16L	95.9	105.1	
	DAL	Jan 16, 10:59	B722	2	DAL	D	16L	96.6	104.9	
	UAL	Jan 15, 11:26	B722	2	UAL	D	16L	95.5	104.8	
	UAL	Jan 13, 11:25	B722	2	UAL	D	16L	95.8	104.7	
	DAL	Feb 02, 14:54	B722	2	DAL	D	16L	97.7	104.6	
	UAL	Jan 14, 11:27	B722	2	UAL	D	16L	95.9	104.5	
	DAL	Jan 24, 15:01	B72Q	3	DAL	D	16L	93.9	104.1	
	UAL	Feb 04, 11:37	B722	2	UAL	D	16L	94.6	104.1	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 13 to February 4)
 Site: R5 - Five Corners - S 171 and 12 Ave S



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 18, 09:40	B722	2	DAL	A	16R	91.5	100.2	
	EWV	Jan 19, 09:06	DC8	2	EWV	A	16L	87.6	98.8	
	FDX	Feb 03, 19:47	U		FDX	D	16L	88.0	97.8	
	FDX	Jan 22, 10:49	B722	2	FDX	D	16L	87.5	97.6	
	ASA	Jan 19, 08:50	B734	3	ASA	A	16R	86.9	97.6	
	SCX	Jan 20, 17:34	U		SCX	D	16L	89.5	97.5	
	AAL	Jan 21, 00:10	MD80	3	AAL	A	16R	88.5	97.4	
IL62	AFL	Jan 20, 13:28	IL62	2	AFL	A	16R	90.5	97.2	
	ASA	Jan 27, 11:01	B734	3	ASA	A	16R	89.0	97.2	
	ASA	Jan 22, 14:58	B734	3	ASA	A	34L	87.6	97.1	
	CKS	Jan 20, 09:11	DC86	2	CKS	A	16R	89.1	97.0	
	UAL	Jan 19, 09:48	B72Q	3	UAL	A	16R	90.5	97.0	
	ASA	Jan 18, 14:59	MD80	3	ASA	A	16R	86.2	96.8	
	AAL	Jan 30, 18:10	MD80	3	AAL	A	16R	92.3	96.7	
	ASA	Jan 19, 11:04	B734	3	ASA	A	16R	84.3	96.4	
	NWA	Jan 19, 07:07	B742	3	NWA	A	16R	85.5	96.4	
	AAL	Jan 22, 11:10	MD80	3	AAL	A	16R	89.1	96.4	
	FDX	Jan 26, 19:52	B722	2	FDX	D	16L	85.5	96.3	
	NWA	Feb 03, 08:51	B742	3	NWA	A	16R	86.0	96.2	
	SWA	Jan 17, 12:32	B732	2	SWA	D	16L	88.1	96.1	
	AAL	Feb 03, 11:45	MD80	3	AAL	A	16R	88.7	96.1	
	UAL	Jan 17, 09:00	B744	3	UAL	A	16R	87.9	96.0	
	ASA	Jan 29, 17:43	MD80	3	ASA	A	16R	85.3	95.9	
	CKS	Jan 17, 06:23	DC86	2	CKS	A	16R	84.2	95.7	
	AAL	Jan 17, 17:27	MD80	3	AAL	A	16R	87.7	95.7	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 13 January 17)
 Site: R6 - North Airport - S 146 St Between Runways



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	CKS	Jan 16, 16:45	B741	3	CKS	A	16R	103.1	107.5	
	DAL	Jan 14, 12:39	B722	2	DAL	A	16R	102.1	105.9	
	CKS	Jan 15, 13:17	DC86	2	CKS	A	16R	100.8	105.7	
	CKS	Jan 16, 07:13	DC86	2	CKS	A	16R	101.4	105.6	
	EWW	Jan 16, 09:29	DC86	2	EWW	A	16R	99.0	105.5	
	NWA	Jan 16, 05:44	B742	3	NWA	A	16R	101.2	105.4	
	CKS	Jan 14, 06:48	DC86	2	CKS	A	16R	98.1	104.9	
	WOA	Jan 16, 06:27	MD11	3	WOA	A	16R	99.7	104.5	
	NWA	Jan 14, 05:41	B742	3	NWA	A	16R	99.6	104.4	
	CKS	Jan 15, 10:04	DC85	2	CKS	A	16R	98.9	104.2	
	EWW	Jan 13, 08:31	DC86	2	EWW	A	16R	97.9	104.0	
	EWW	Jan 15, 08:58	DC86	2	EWW	A	16R	97.9	104.0	
	EVA	Jan 16, 12:31	B744	3	EVA	A	16R	97.3	103.9	
	CKS	Jan 17, 06:23	DC86	2	CKS	A	16R	98.2	103.5	
	FDX	Jan 16, 05:54	DC10	3	FDX	A	16R	99.1	103.5	
	CKS	Jan 14, 11:19	DC86	2	CKS	A	16R	96.5	103.5	
	CKS	Jan 13, 06:22	DC86	2	CKS	A	16R	97.0	103.5	
	FDX	Jan 14, 06:17	MD11	3	FDX	A	16R	97.0	103.4	
	NWA	Jan 13, 21:23	DC10	3	NWA	A	16R	98.3	103.1	
	FDX	Jan 14, 04:06	MD11	3	FDX	A	16R	95.6	102.8	
	NWA	Jan 14, 12:12	DC10	3	NWA	A	16R	97.3	102.7	
	EVA	Jan 14, 12:35	B744	3	EVA	A	16R	95.8	102.7	
	DAL	Jan 16, 12:36	B72Q	3	DAL	A	16R	98.2	102.2	
	NWA	Jan 14, 05:04	DC10	3	NWA	A	16R	98.2	102.2	
	NWA	Jan 16, 04:59	DC10	3	NWA	A	16R	97.7	102.2	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 13 to February 4)
 Site: R9 - Riverton - 23rd Ave S and S 126th St



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
	DAL	Jan 24, 11:00	B722	2	DAL	D	34R	98.6	107.9	
	DAL	Jan 23, 15:20	B722	2	DAL	D	34R	98.9	107.1	
	DAL	Jan 22, 14:58	B722	2	DAL	D	34R	94.4	104.2	
	CKS	Jan 25, 22:16	DC85	2	CKS	D	34R	89.2	101.8	
	UAL	Jan 24, 11:26	B72Q	3	UAL	D	34R	93.2	101.7	
	UAL	Jan 23, 17:40	B722	2	UAL	D	34R	90.4	100.8	
	NWA	Jan 22, 13:34	B742	3	NWA	D	34R	91.1	100.5	
	NWA	Jan 26, 07:18	B742	3	NWA	D	34R	91.4	100.5	
	QXE	Jan 23, 15:30	F28	2	QXE	D	34L	87.8	100.3	
	CKS	Jan 22, 21:28	DC86	2	CKS	D	34R	88.2	100.2	
	KHA	Jan 26, 04:55	B722	2	KHA	D	34R	91.3	100.2	
	QXE	Jan 22, 21:35	F28	2	QXE	D	34R	90.0	99.9	
	CKS	Jan 25, 21:52	DC86	2	CKS	D	34R	88.8	99.7	
	CKS	Jan 23, 22:26	DC86	2	CKS	D	34R	87.5	99.3	
	QXE	Jan 23, 14:05	F28	2	QXE	D	34R	90.8	99.0	
	DAL	Jan 23, 13:42	B72Q	3	DAL	D	34R	88.5	98.9	
	QXE	Jan 22, 19:46	F28	2	QXE	D	34R	89.7	98.9	
	UAL	Jan 22, 12:59	B744	3	UAL	D	34R	88.6	98.9	
	QXE	Jan 22, 22:39	F28	2	QXE	D	34R	88.0	98.8	
	FFT	Jan 24, 11:07	B73A	2	FFT	D	34R	88.5	98.7	
	QXE	Jan 22, 21:47	F28	2	QXE	D	34R	88.9	98.7	
	QXE	Jan 24, 09:51	F28	2	QXE	D	34R	88.3	98.6	
	QXE	Jan 24, 11:29	F28	2	QXE	D	34R	88.0	98.6	
	EWV	Jan 25, 19:35	DC86	2	EWV	D	34R	86.7	98.5	
	SCX	Jan 22, 17:54	B722	2	SCX	D	34R	88.4	98.3	

Seattle-Tacoma International Airport Part 150 Study
 Loudest Aircraft Noise Events Site Report
 Period: Winter 1999 (January 13 to February 4)
 Site: R11 - Riverton Heights - 26th Ave S and S 151st



Aircraft	Airline	Event Time	Aircraft	Stage	Airline	Ops	Rwy	Lmax	SEL	Graph Of SEL
ASA	ASA	Jan 20, 21:40	MD80	3	ASA	A	16R	99.8	109.0	
CKS	CKS	Feb 03, 21:13	DC86	2	CKS	D	16L	100.5	107.5	
ASA	ASA	Jan 18, 11:03	B734	3	ASA	A	16R	101.9	107.3	
ROA	ROA	Jan 13, 20:23	MD80	3	ROA	A	16R	96.8	107.1	
TWA	TWA	Jan 20, 10:45	MD80	3	TWA	A	16R	96.6	106.9	
CKS	CKS	Jan 19, 21:29	DC86	2	CKS	D	16L	97.3	106.7	
QXE	QXE	Jan 17, 11:22	F28	2	QXE	A	16R	98.3	106.2	
CKS	CKS	Jan 30, 21:30	DC86	2	CKS	D	16L	96.3	106.2	
DAL	DAL	Jan 30, 11:03	B752	3	DAL	A	16R	96.8	105.9	
EIA	EIA	Feb 01, 23:02	DC9	2	EIA	D	16L	97.2	105.9	
FDX	FDX	Feb 02, 19:45	B722	2	FDX	D	16L	96.4	105.8	
EIA	EIA	Jan 31, 15:28	DC9	2	EIA	D	16L	97.3	105.7	
CKS	CKS	Jan 13, 21:19	DC86	2	CKS	D	16L	97.4	105.6	
QXE	QXE	Jan 18, 11:23	F28	2	QXE	A	16R	96.5	105.6	
EWV	EWV	Jan 13, 19:21	DC86	2	EWV	D	16L	96.8	105.6	
ASA	ASA	Jan 18, 14:58	MD80	3	ASA	A	16R	95.3	105.5	
CKS	CKS	Feb 02, 21:23	DC86	2	CKS	D	16L	95.8	105.4	
FDX	FDX	Jan 26, 19:51	B722	2	FDX	D	16L	97.7	105.1	
EIA	EIA	Jan 20, 22:37	DC9	2	EIA	D	16L	95.4	105.0	
COA	COA	Jan 18, 11:41	B738	3	COA	A	16R	95.4	104.7	
CKS	CKS	Jan 16, 21:30	DC86	2	CKS	D	16L	95.9	104.6	
ASA	ASA	Feb 04, 14:53	B734	3	ASA	--	16L	97.2	104.6	
ASA	ASA	Jan 14, 13:43	B734	3	ASA	A	16R	94.1	104.6	
UAL	UAL	Jan 16, 09:47	B735	3	UAL	A	16R	93.2	104.6	
QXE	QXE	Feb 02, 09:55	F28	2	QXE	D	16L	96.5	104.5	

Seattle-Tacoma International Airport Part 150 Study

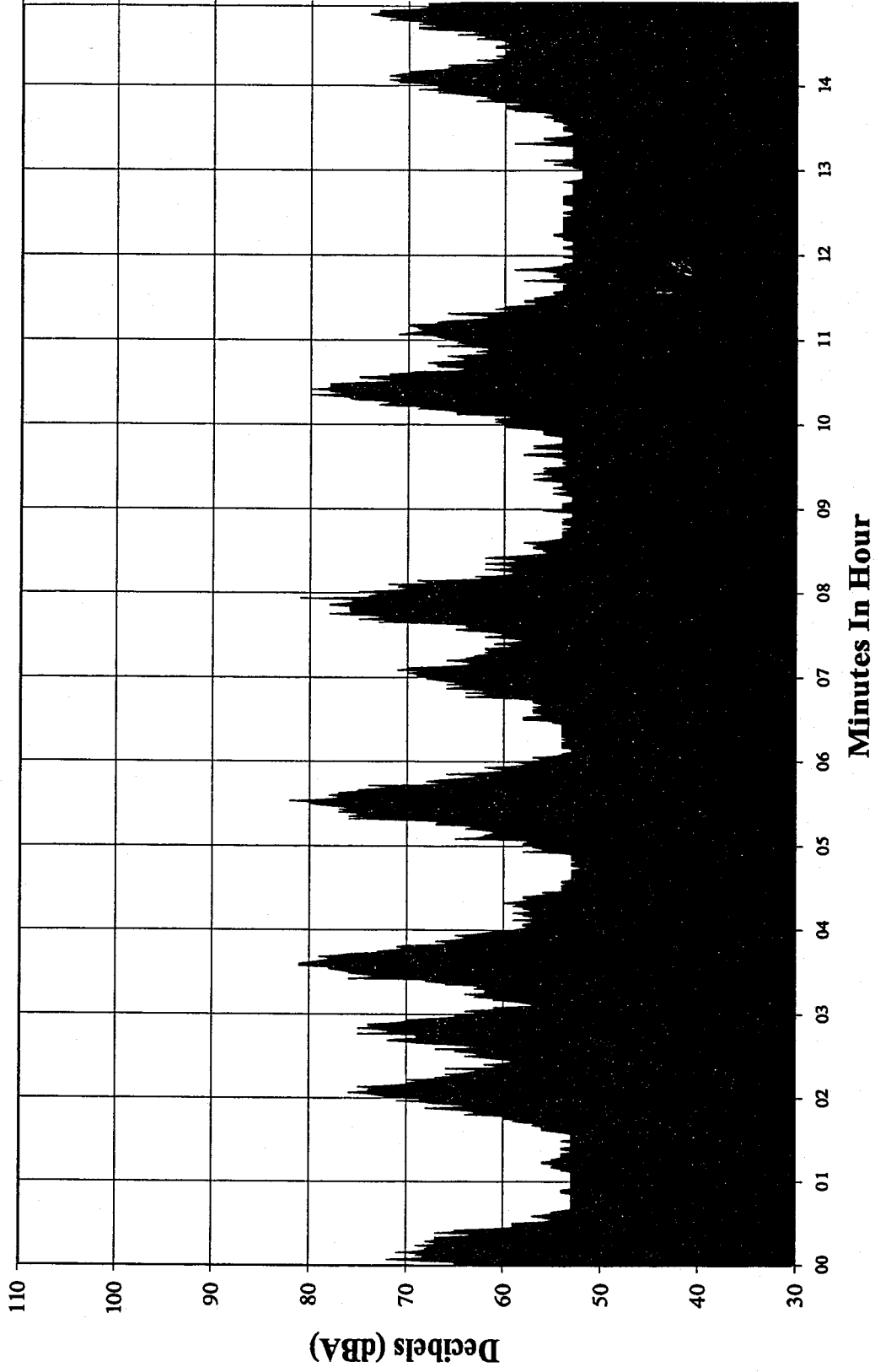
Hourly Noise Graph

Period: Spring 1998 (April 24 from 7:00:00 AM to 7:14:59 AM)

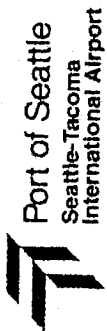
Site: R1 - Des Moines - Parkside Elem. (S 247th St)



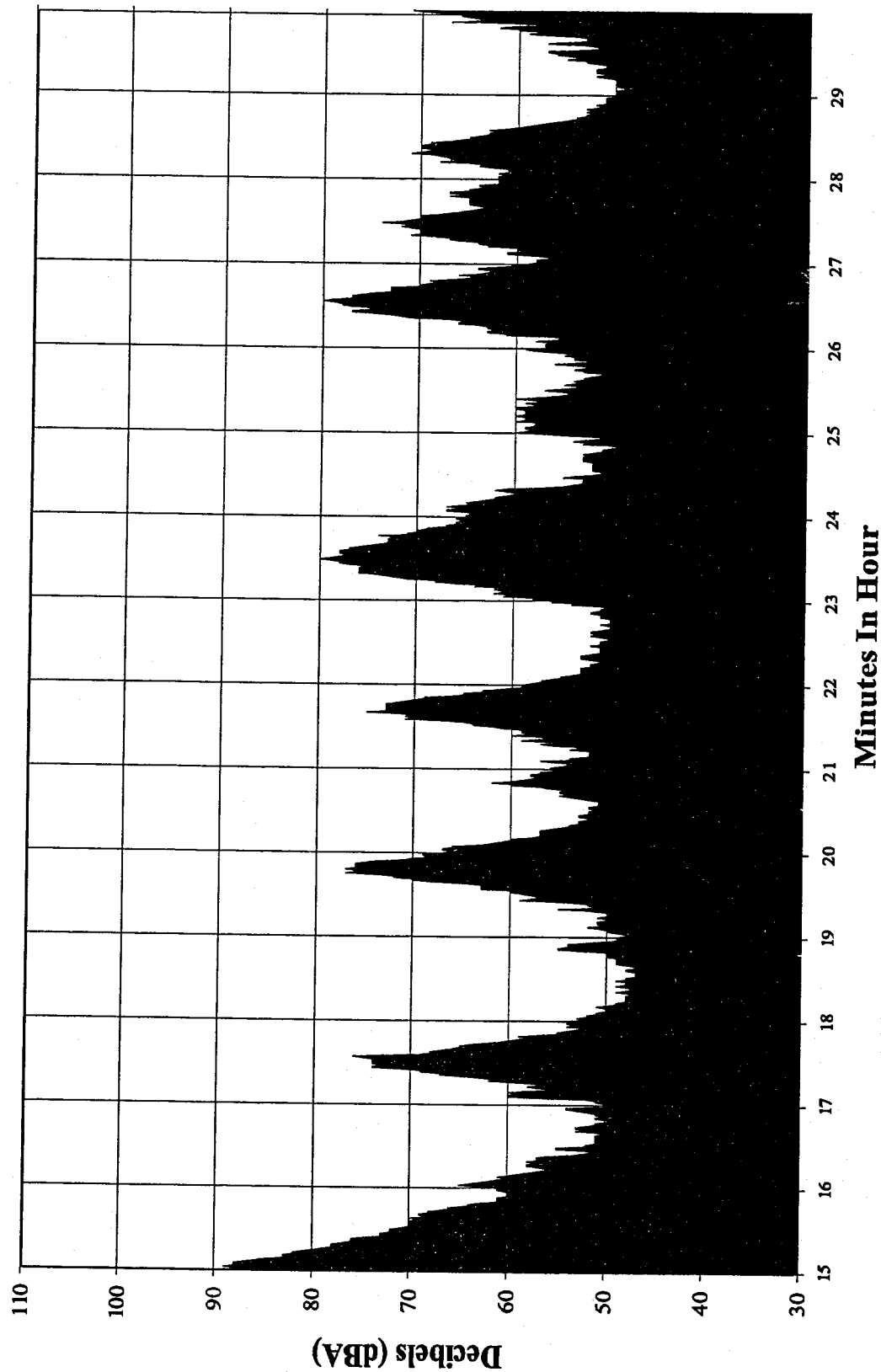
One Second Values



Seattle-Tacoma International Airport Part 150 Study
Hourly Noise Graph
Period: April 15, 1998 from 6:15:00 AM to 6:29:59 AM
Site: R2 - Des Moines - 12 Ave S and S 226th St.



One Second Values

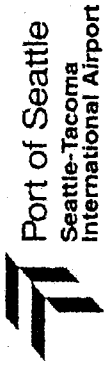


Seattle-Tacoma International Airport Part 150 Study

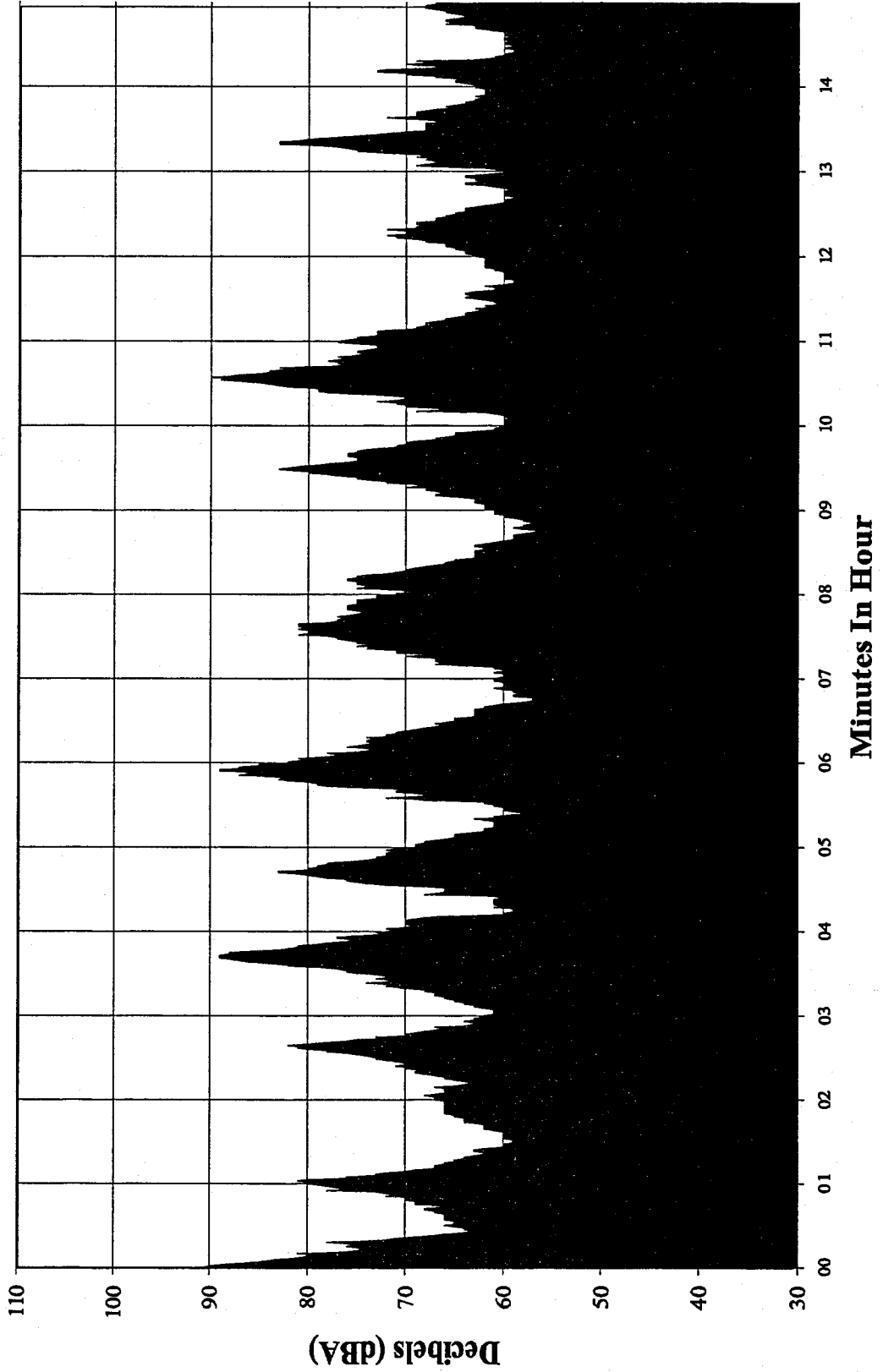
Hourly Noise Graph

Period: April 16, 1998 from 7:00:00 AM to 7:14:59 AM

Site: R4 - Tye Golf Course - 200th St and 20th Ave S



One Second Values

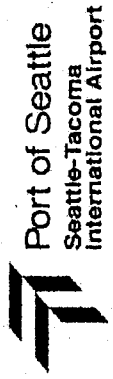


Seattle-Tacoma International Airport Part 150 Study

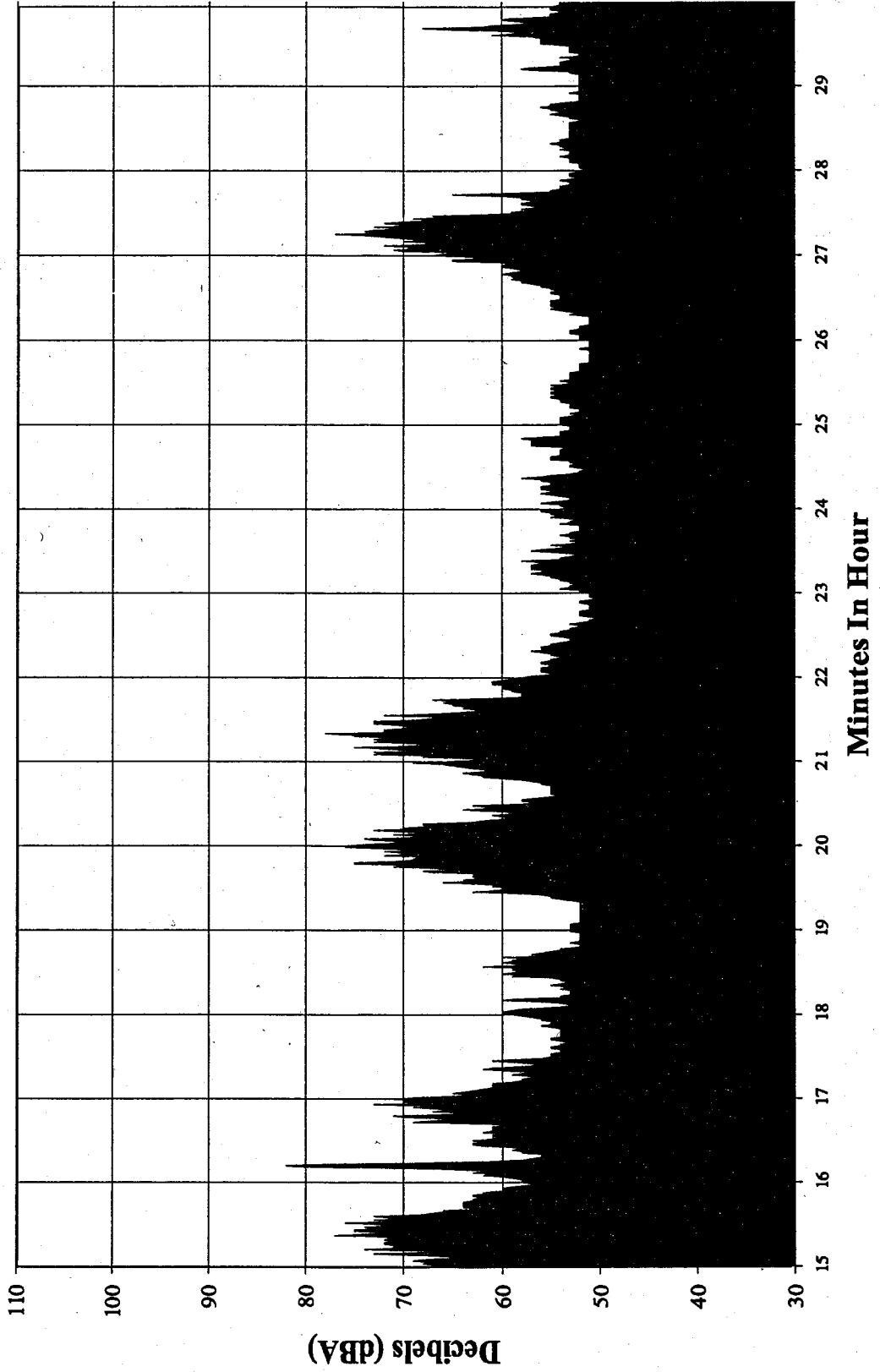
Hourly Noise Graph

Period: Spring 1998 (April 19 from 7:15:00 AM to 7:29:59 AM)

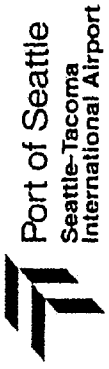
Site: R5 - Five Corners - S 171 and 12 Ave S



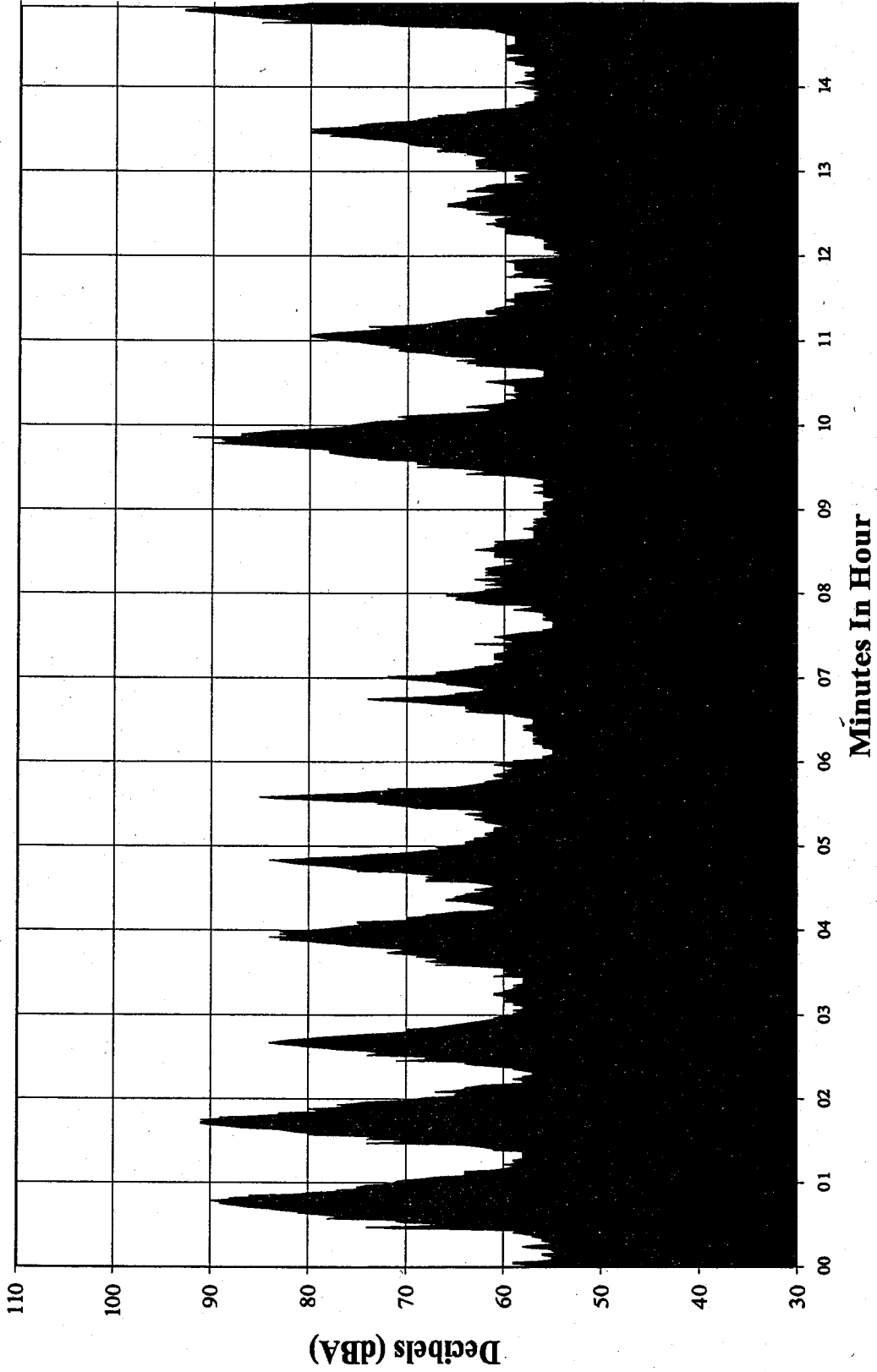
One Second Values



Seattle-Tacoma International Airport Part 150 Study
Hourly Noise Graph
Period: Spring 1998 (April 22 from 7:00:00 AM to 7:14:59 AM)
Site: R6 - North Airport - S 146 St Between Runways



One Second Values

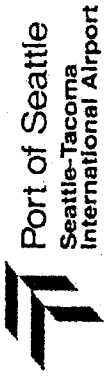


Seattle-Tacoma International Airport Part 150 Study

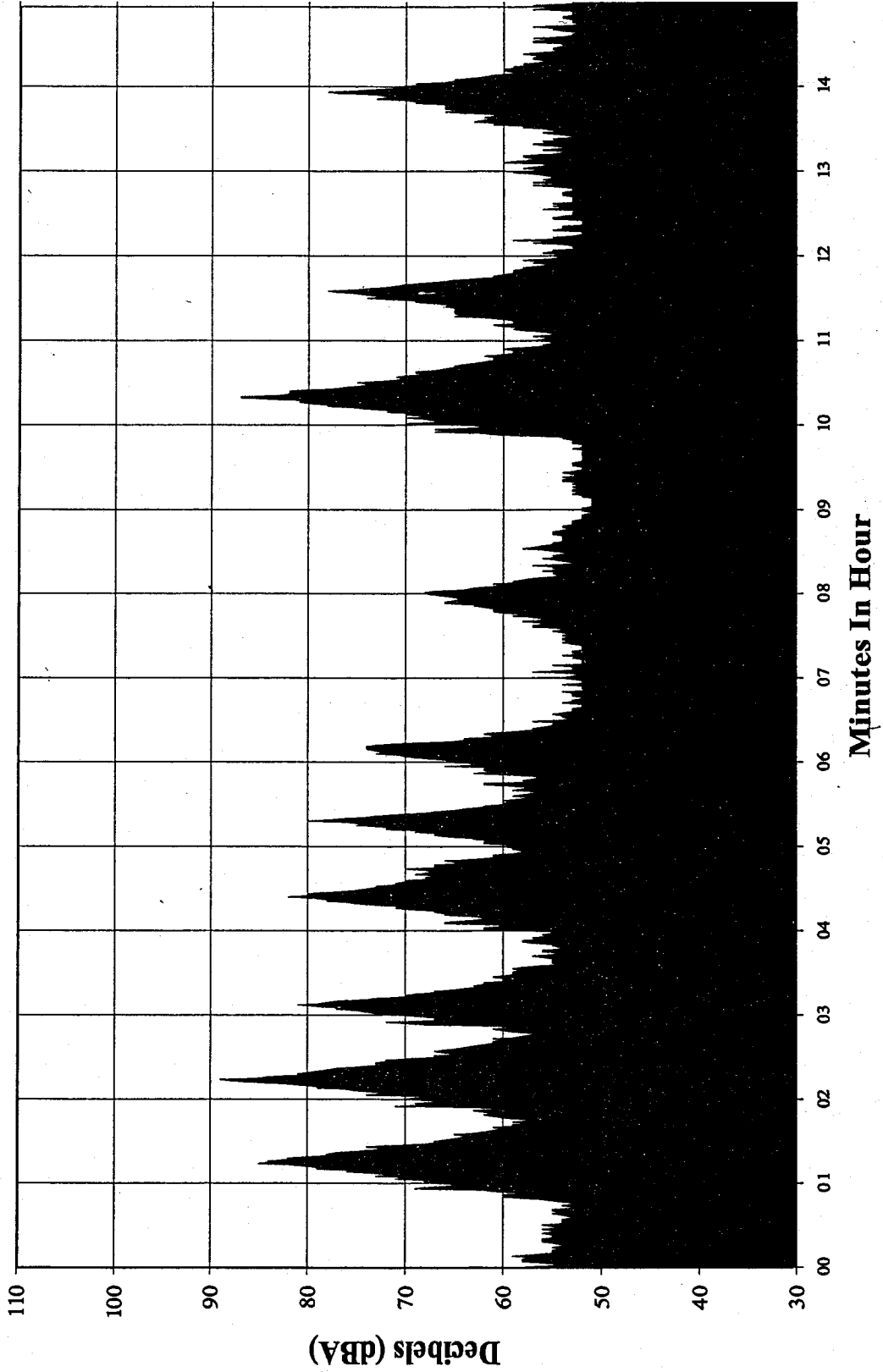
Hourly Noise Graph

Period: Spring 1998 (April 22 from 7:00:00 AM to 7:14:59 AM)

Site: R7 - Boulevard Park - 13th Ave S and S 120th St



One Second Values

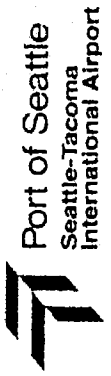


Seattle-Tacoma International Airport Part 150 Study

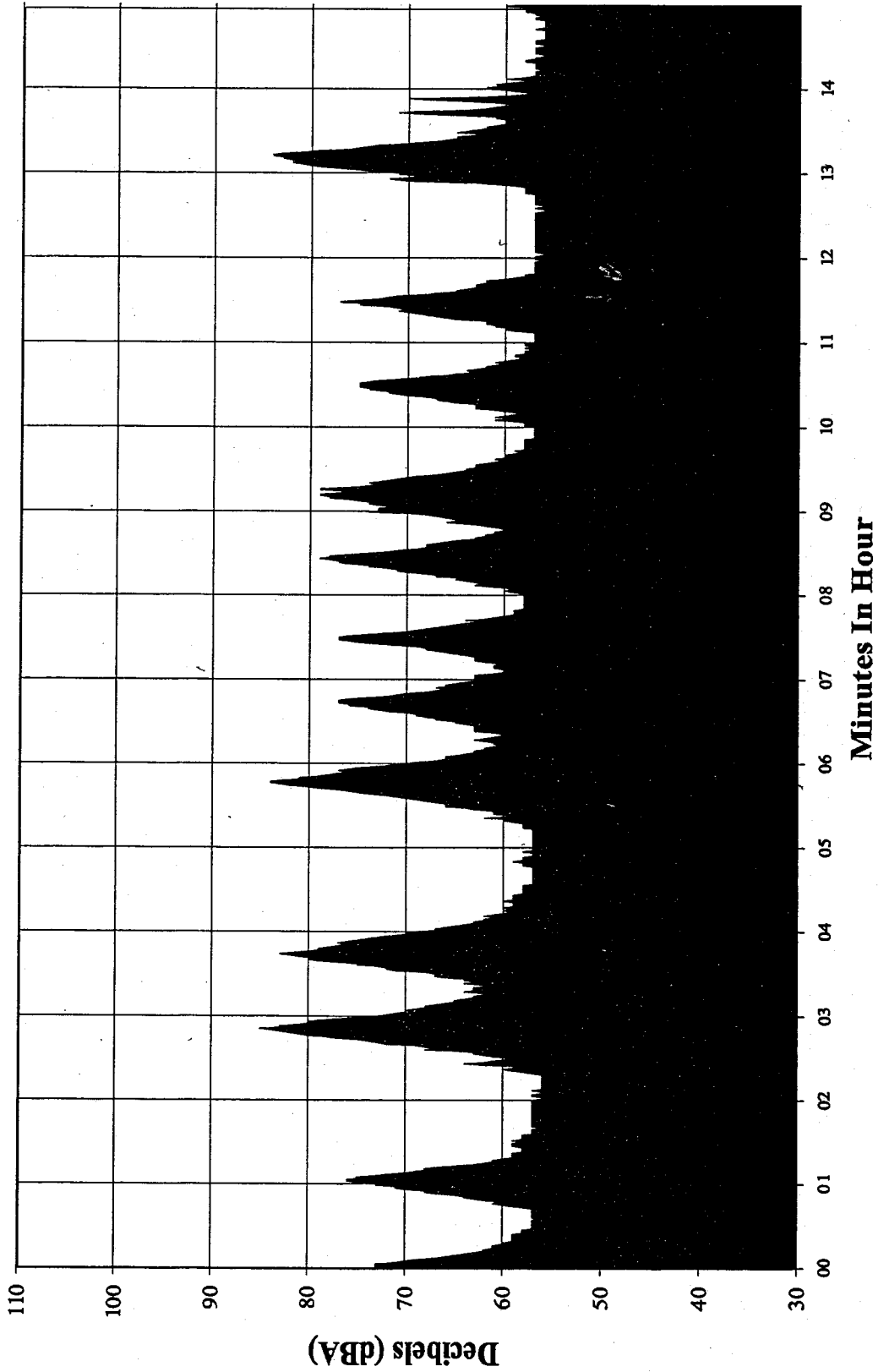
Hourly Noise Graph

Period: Spring 1998 (April 20 from 7:00:00 AM to 7:14:59 AM)

Site: R8 - Glendale School - S 104th St and 13th Ave S



One Second Values

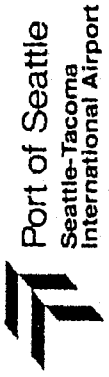


Seattle-Tacoma International Airport Part 150 Study

Hourly Noise Graph

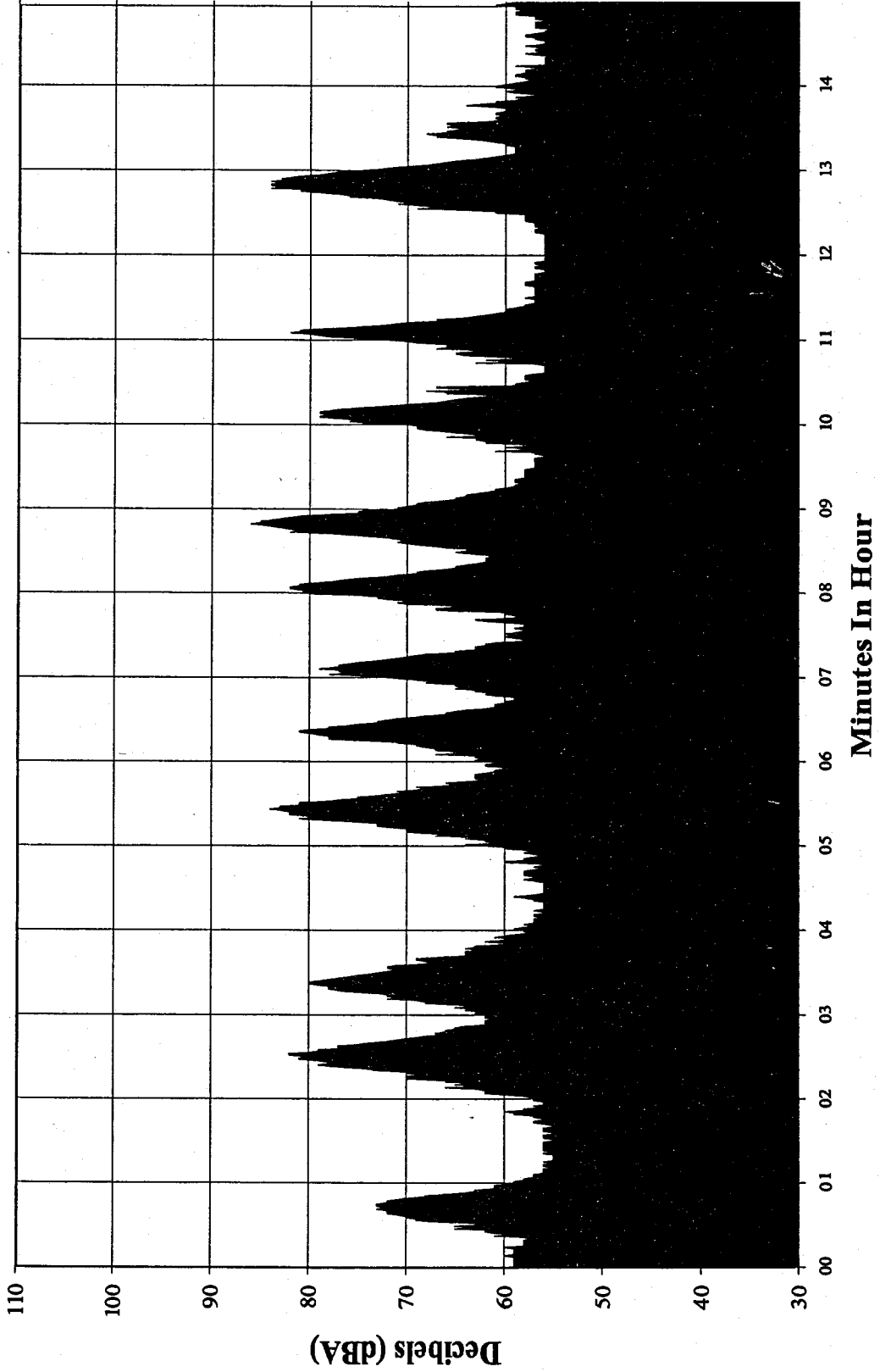
Period: Spring 1998 (April 20 from 7:00:00 AM to 7:14:59 AM)

Site: R9 - Riverton - 23rd Ave S and S 126th St



Port of Seattle
Seattle-Tacoma
International Airport

One Second Values

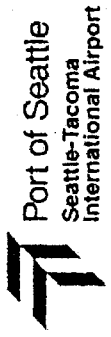


Seattle-Tacoma International Airport Part 150 Study

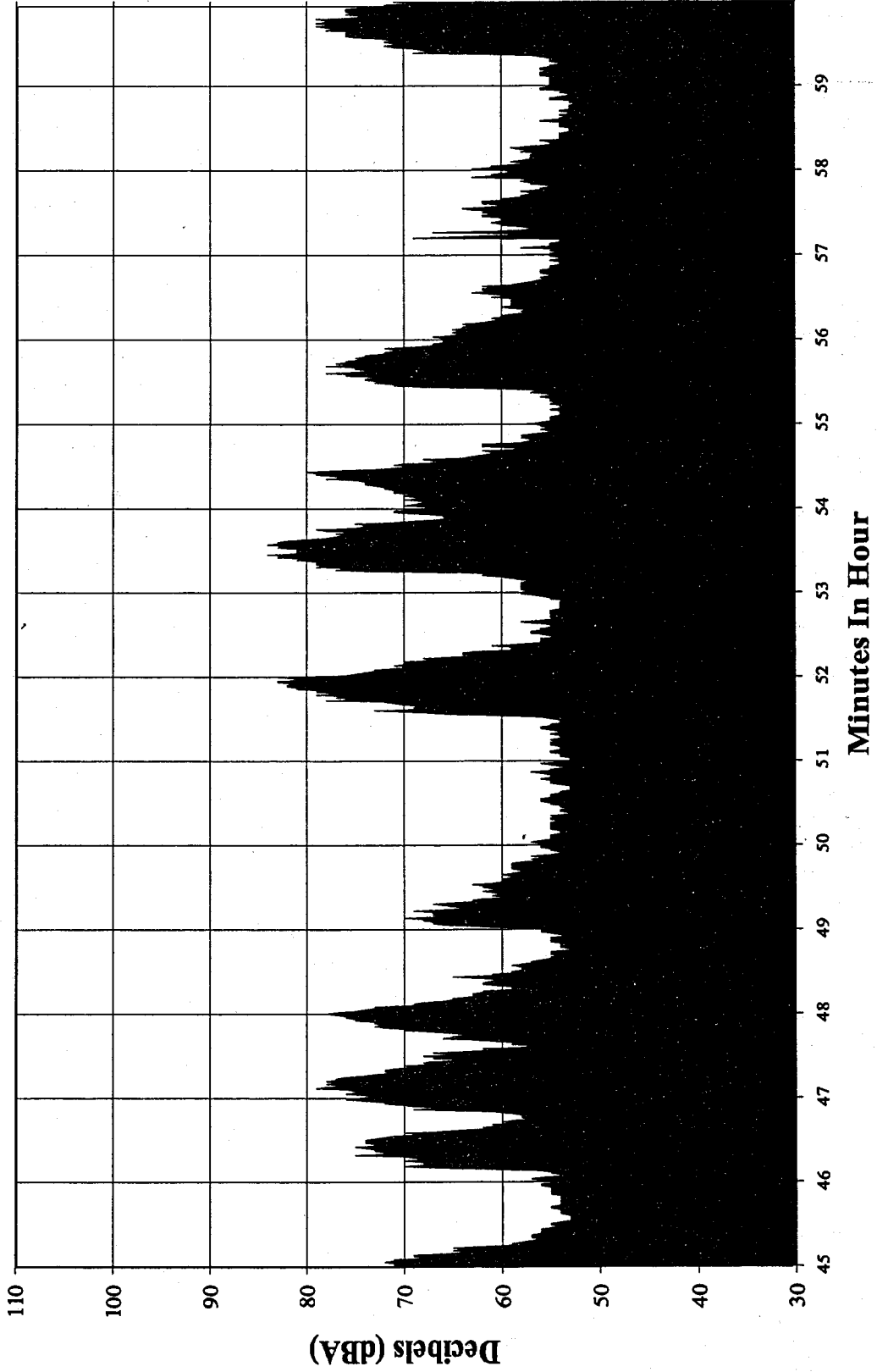
Hourly Noise Graph

Period: Spring 1998 (April 17 from 7:45:00 AM to 7:59:59 AM)

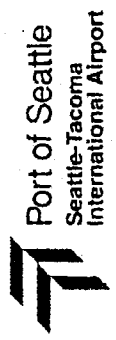
Site: R10 - Normady Park - Highway 509 at S 192nd



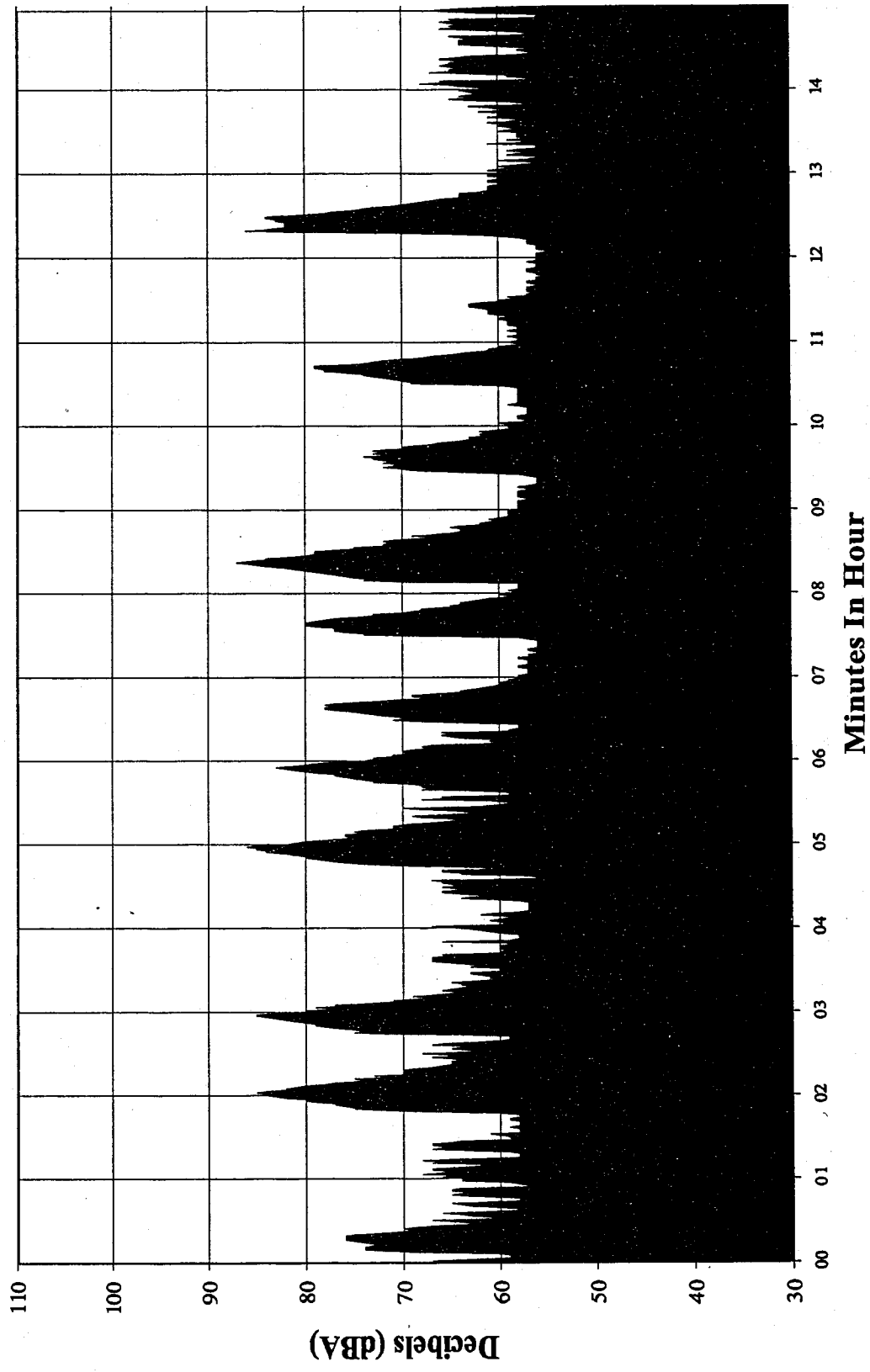
One Second Values



Seattle-Tacoma International Airport Part 150 Study
Hourly Noise Graph
Period: Spring 1998 (April 20 from 7:00:00 AM to 7:14:59 AM)
Site: R11 - Riverton Heights - 26th Ave S and S 151st



One Second Values



Seattle-Tacoma International Airport Part 150 Study

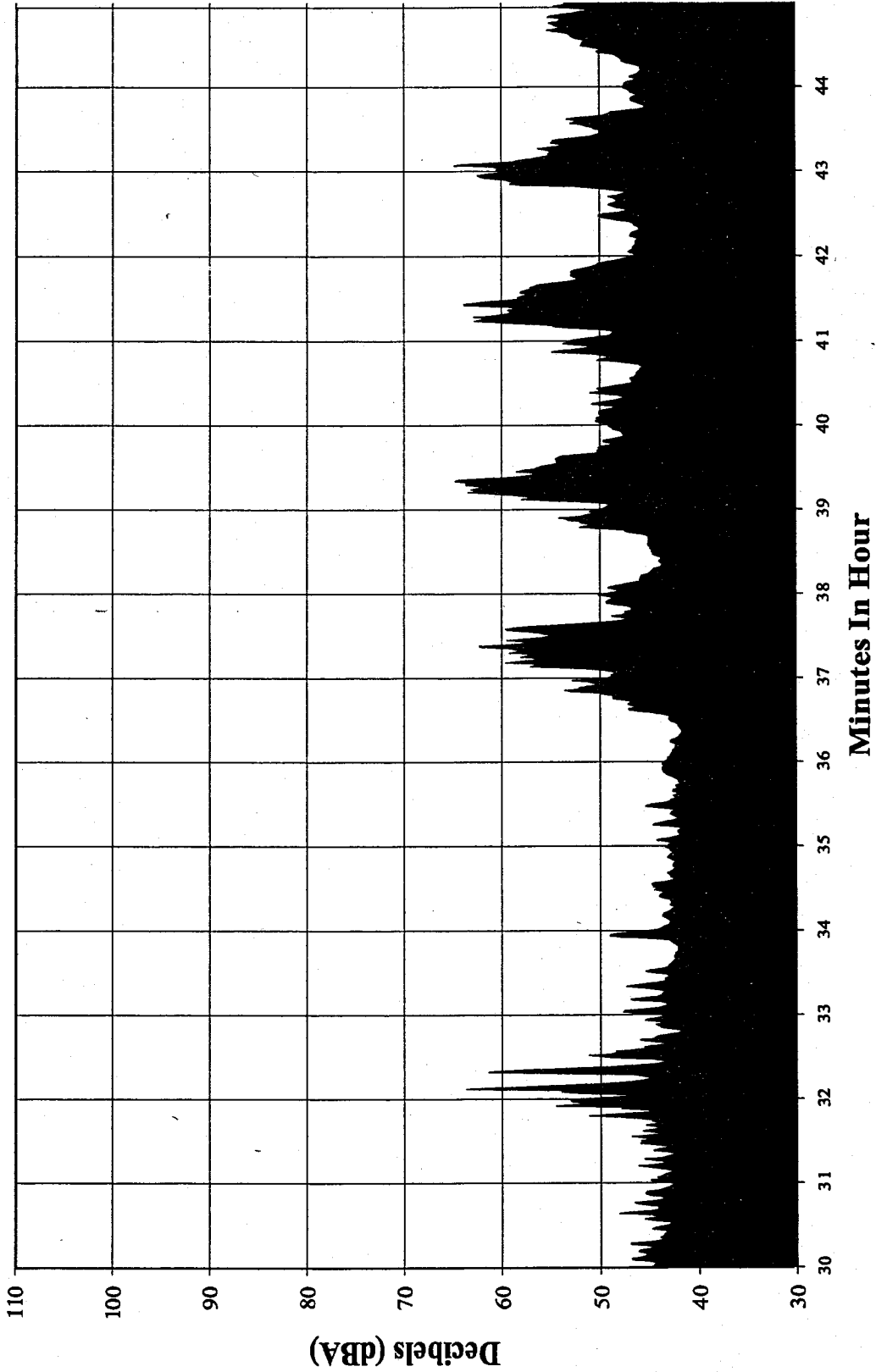
Hourly Noise Graph

Period: Spring 1998 (May 3 from 7:30:00 AM to 7:44:59 AM)

Site: C1 - Highline Hospital - 9th Ave SW and SW 160th St



One Second Values

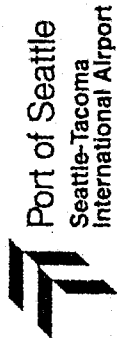


Seattle-Tacoma International Airport Part 150 Study

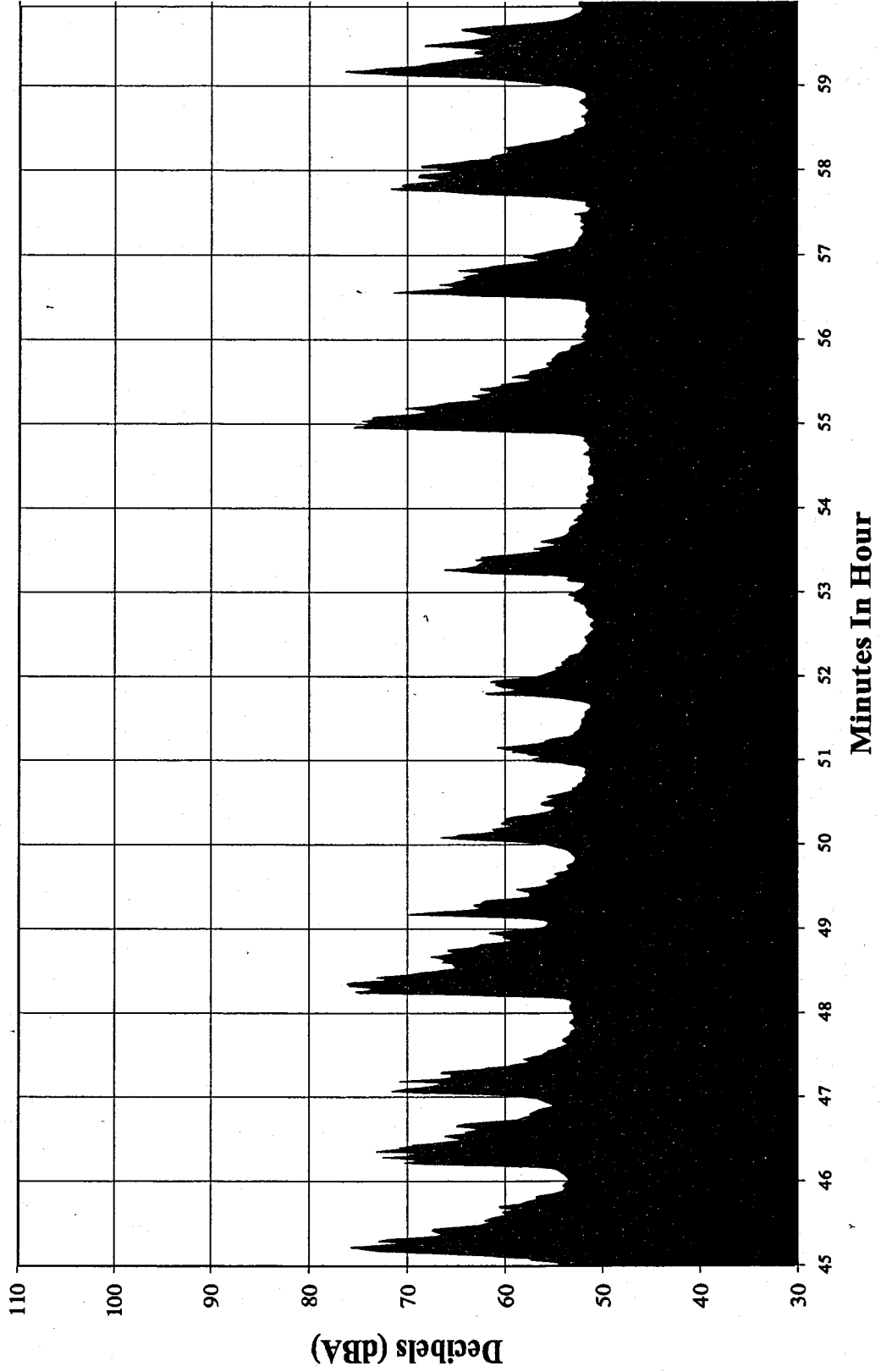
Hourly Noise Graph

Period: Spring 1998 (April 27 from 6:45:00 AM to 6:59:59 AM)

Site: C2 - McMicken Heights - S 164th St and 34th Ave S



One Second Values



Seattle-Tacoma International Airport Part 150 Study

Hourly Noise Graph

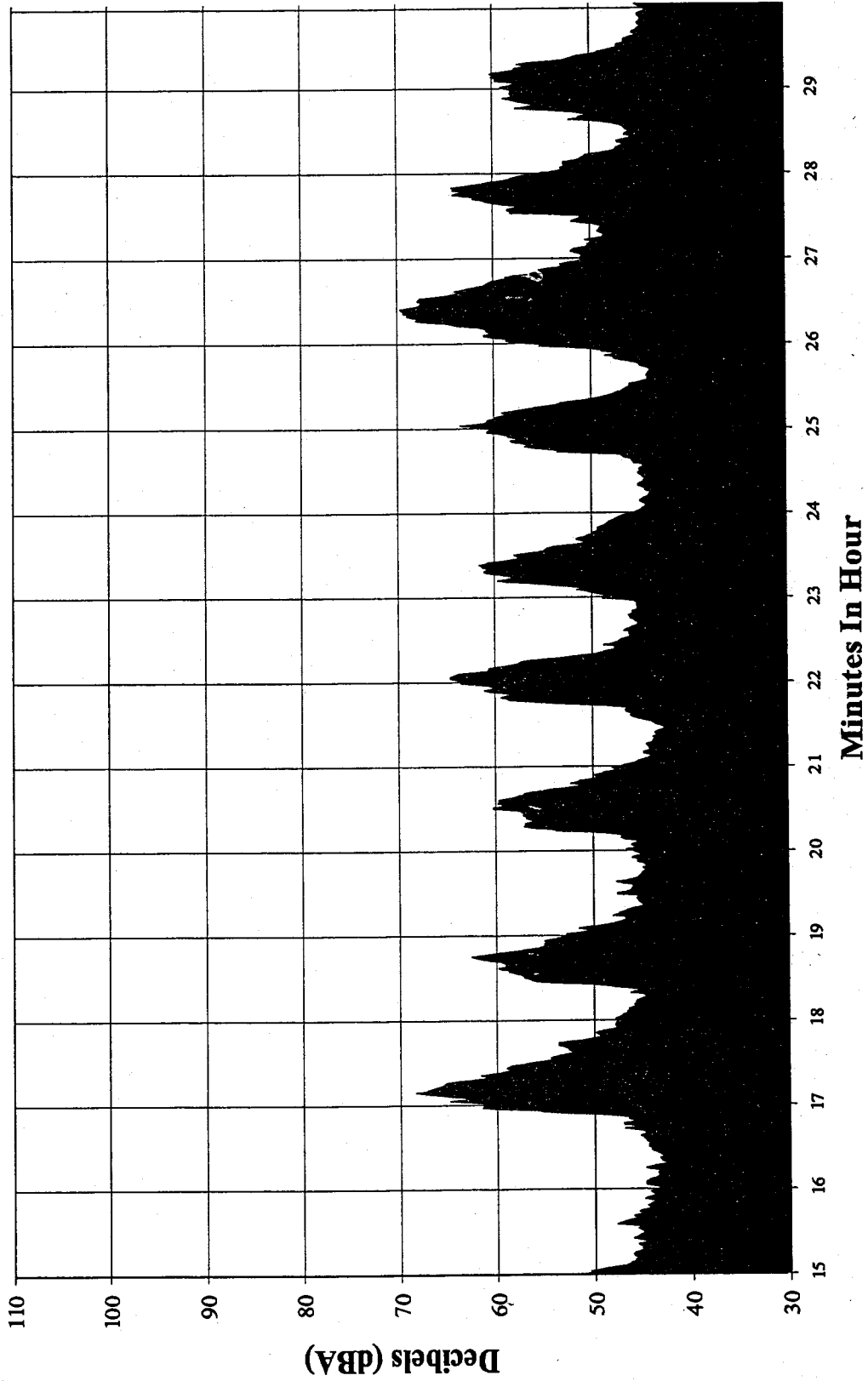
Period: Spring 1998 (April 17 from 6:15:00 AM to 6:29:59 AM)

Site: C3 - Normandy Park/Burien - S 185th and 3rd Ave S

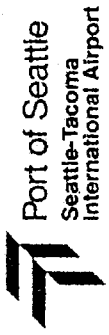


Port of Seattle
Seattle-Tacoma
International Airport

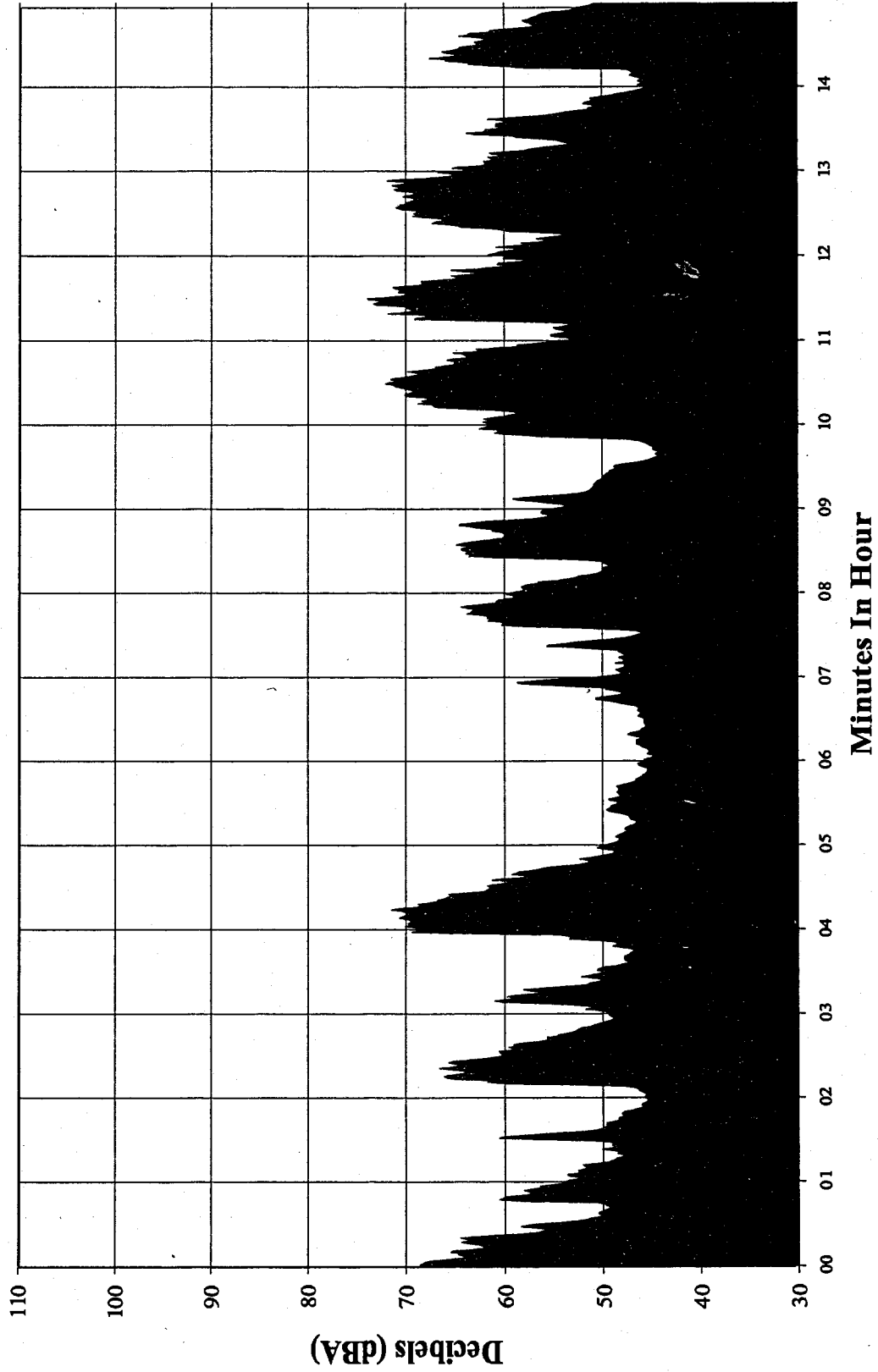
One Second Values



Seattle-Tacoma International Airport Part 150 Study
Hourly Noise Graph
Period: Spring 1998 (April 17 from 7:00:00 AM to 7:14:59 AM)
Site: C4 - E Seatac - 38th Ave S and S 183rd St



One Second Values

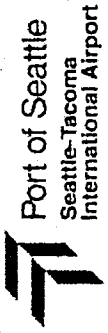


Seattle-Tacoma International Airport Part 150 Study

Hourly Noise Graph

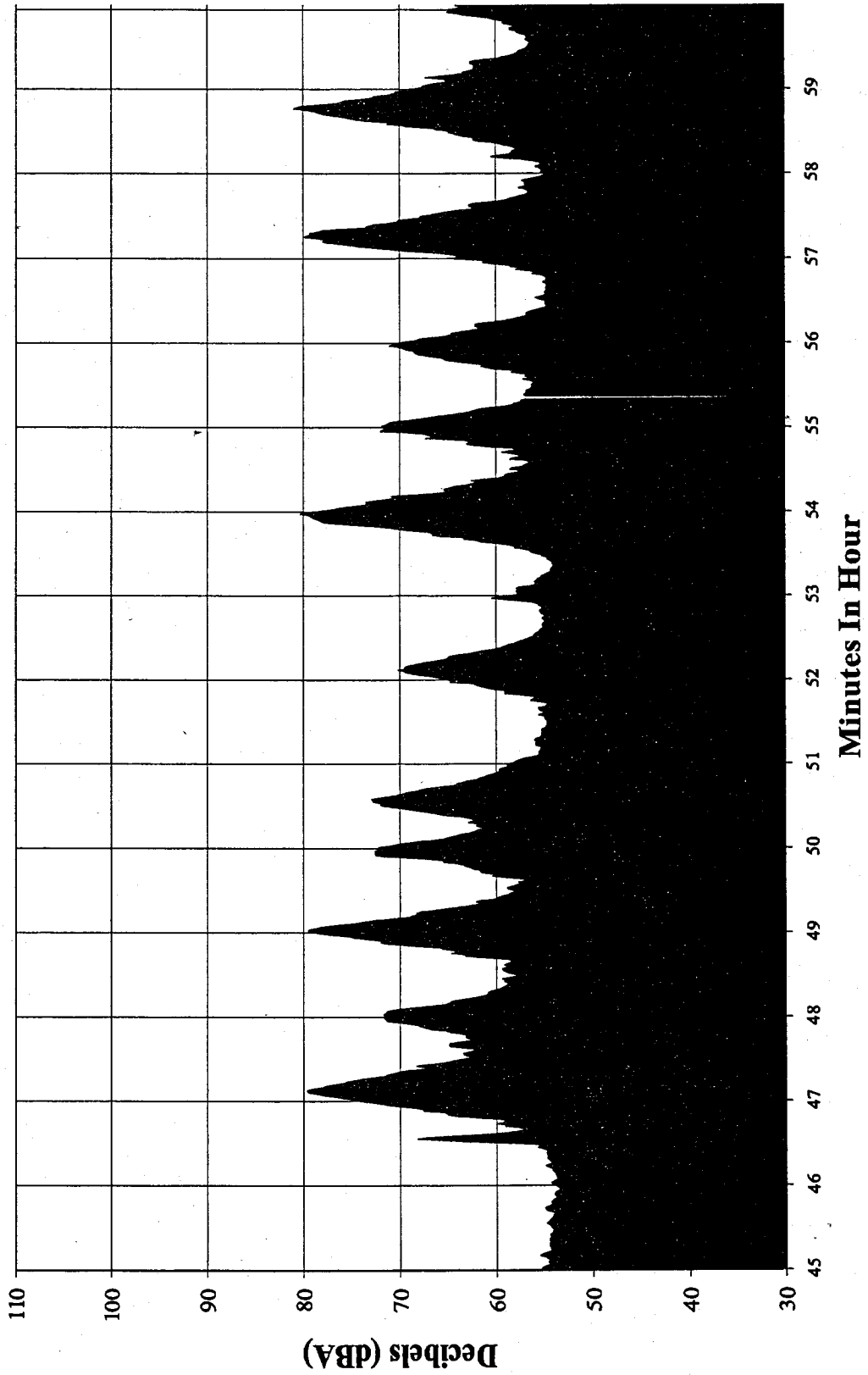
Period: Spring 1998 (April 28 from 6:45:00 AM to 6:59:59 AM)

Site: PN1 - South Park - 12th Ave S and S Sullivan St



Port of Seattle
Seattle-Tacoma
International Airport

One Second Values

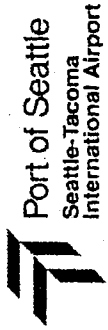


Seattle-Tacoma International Airport Part 150 Study

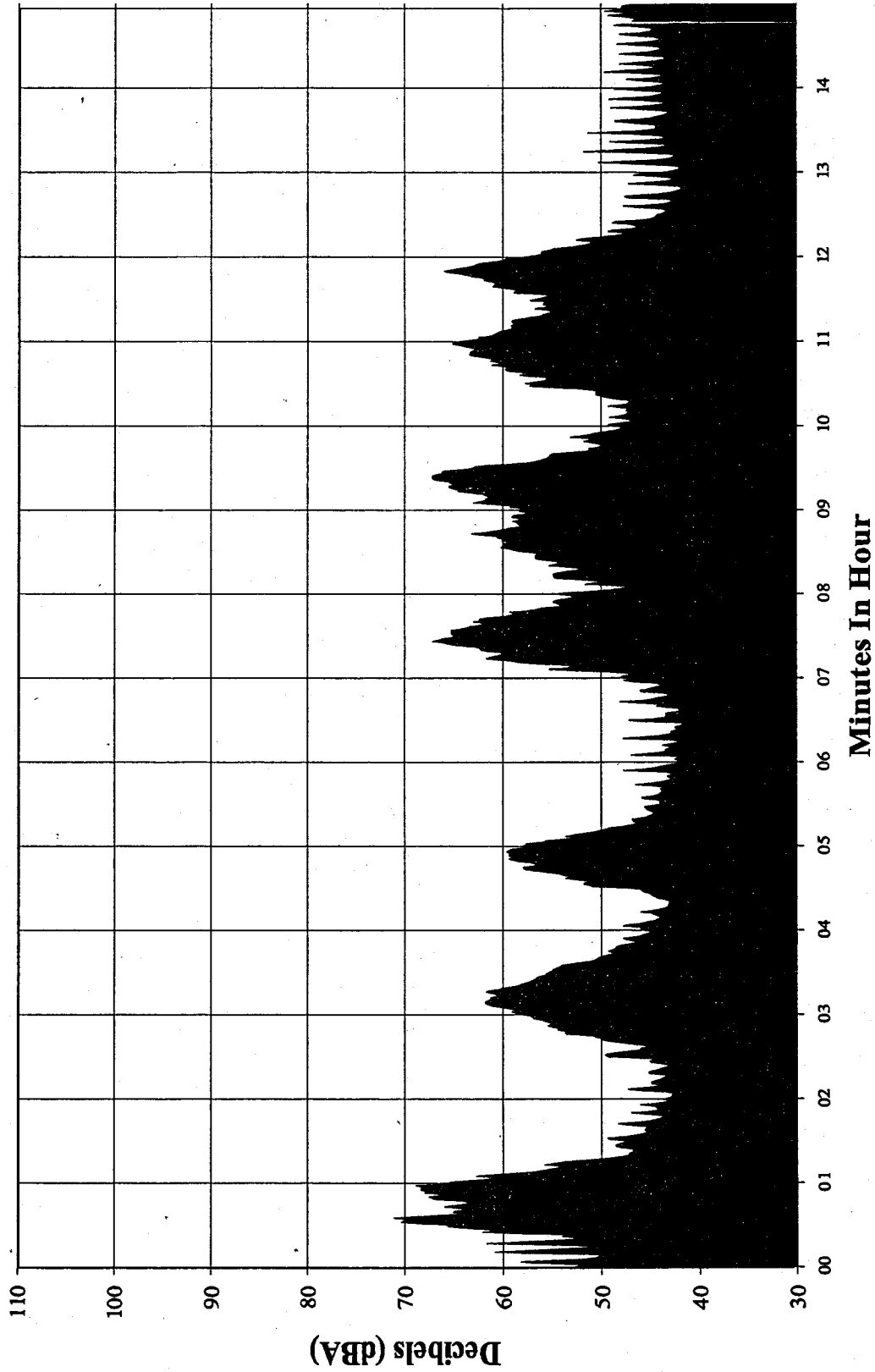
Hourly Noise Graph

Period: Spring 1998 (April 27 from 7:00:00 AM to 7:14:59 AM)

Site: PN2 - Rainier Valley - S Brandon St and 37th Ave S



One Second Values

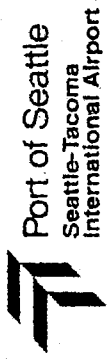


Seattle-Tacoma International Airport Part 150 Study

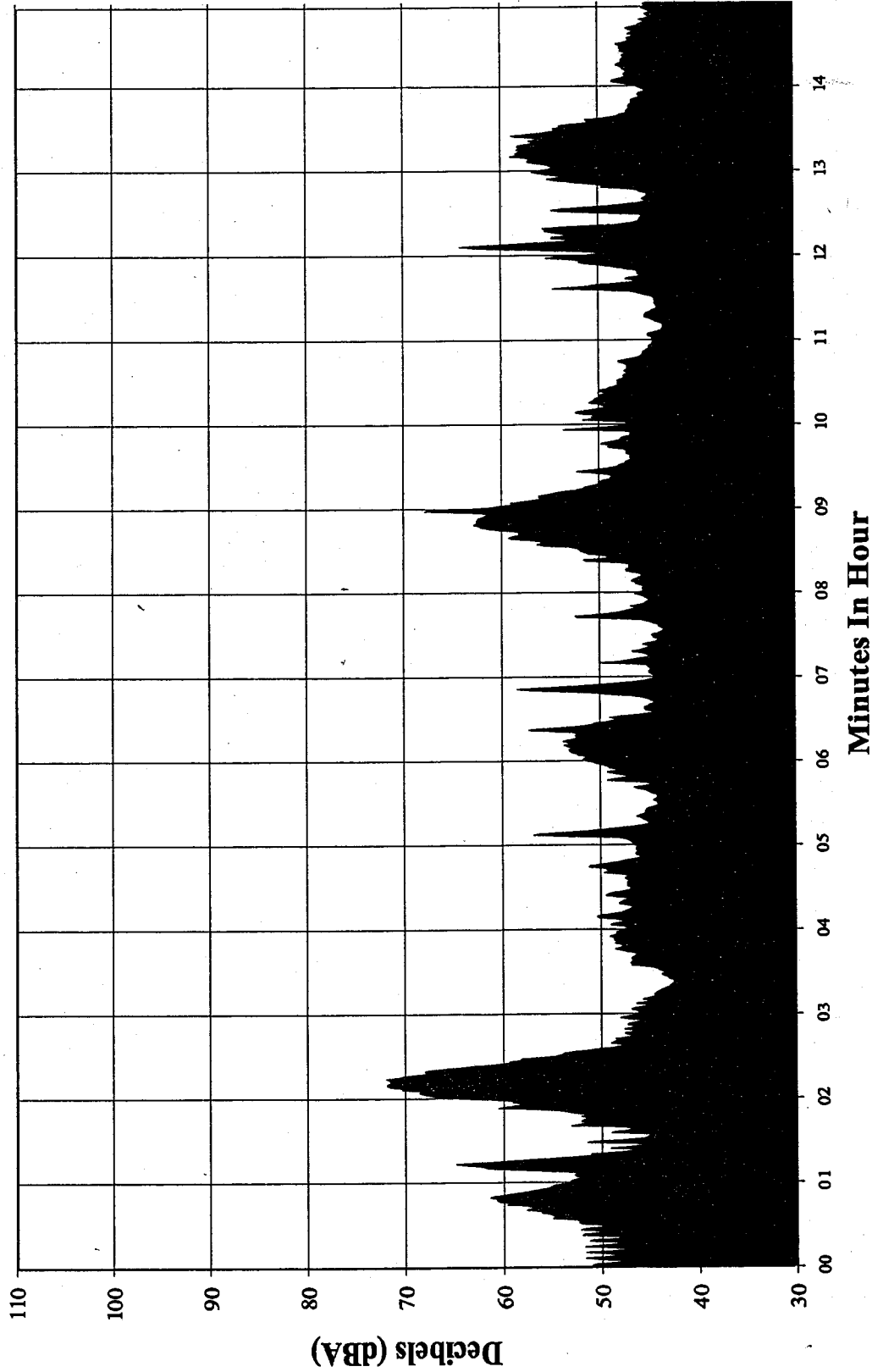
Hourly Noise Graph

Period: Spring 1998 (April 27 from 7:00:00 AM to 7:14:59 AM)

Site: PN3 - Magnolia - 37th Ave W and W Smith St



One Second Values

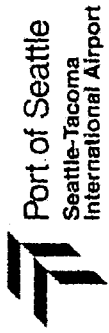


Seattle-Tacoma International Airport Part 150 Study

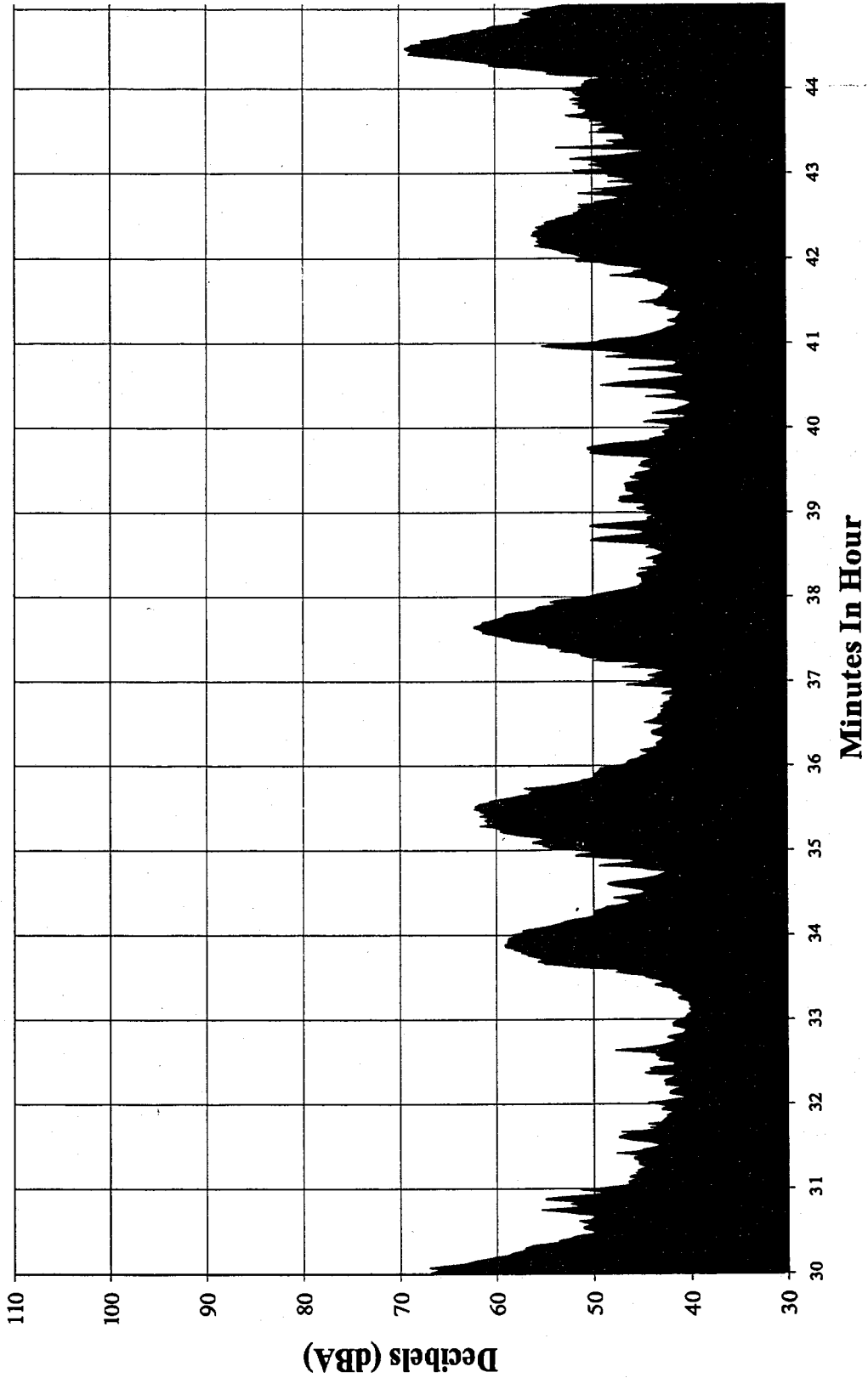
Hourly Noise Graph

Period: Spring 1998 (April 29 from 7:30:00 AM to 7:44:59 AM)

Site: PN4 - Leschi - 31st Ave and E Alder St



One Second Values

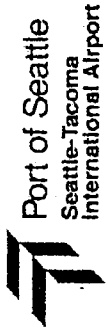


Seattle-Tacoma International Airport Part 150 Study

Hourly Noise Graph

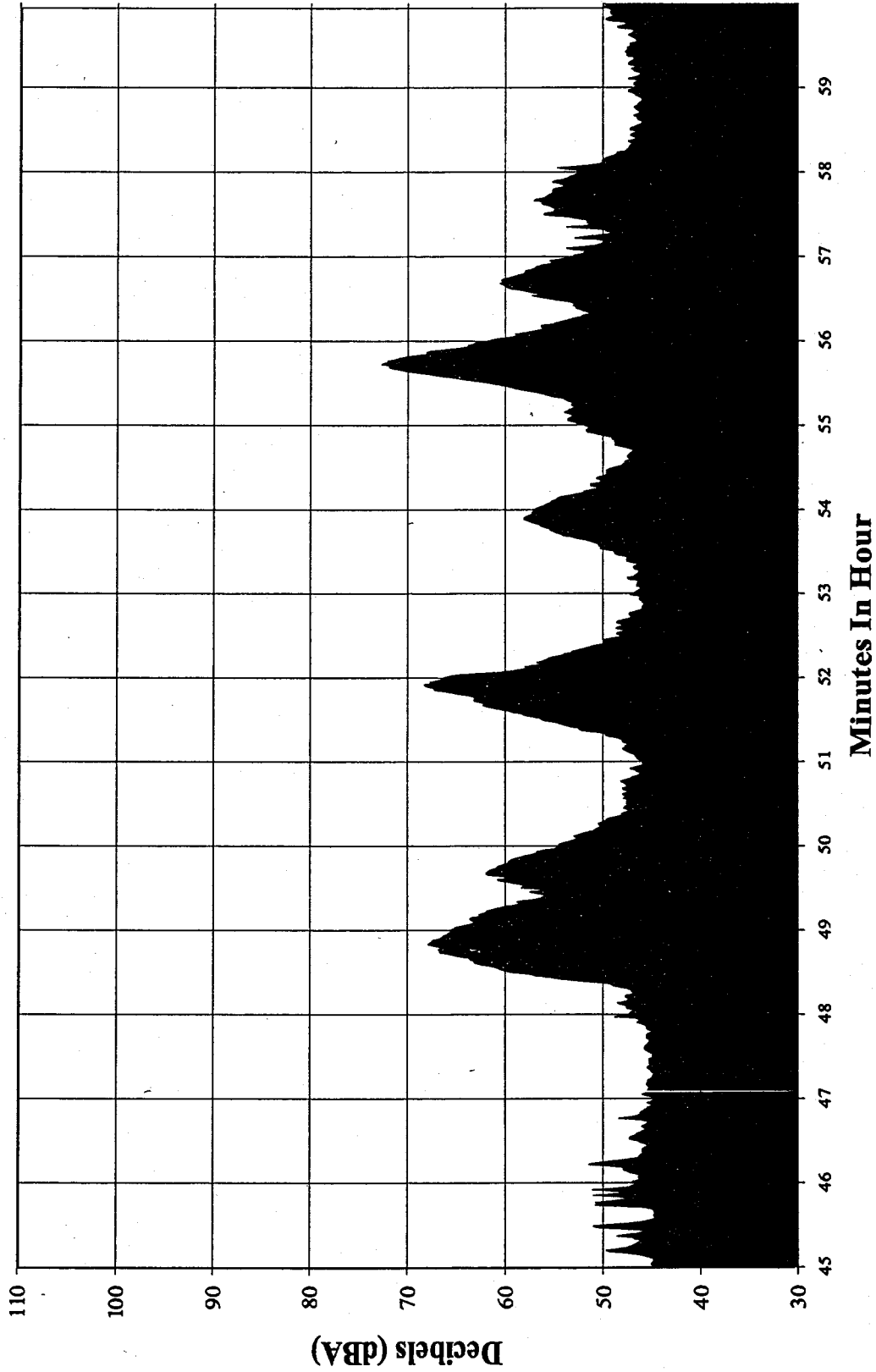
Period: Spring 1998 (April 28 from 6:45:00 AM to 6:59:59 AM)

Site: PN5 - Medina - NE 6th St and 86th Ave NE



Port of Seattle
Seattle-Tacoma
International Airport

One Second Values

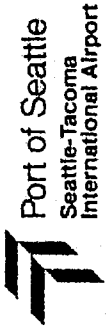


Seattle-Tacoma International Airport Part 150 Study

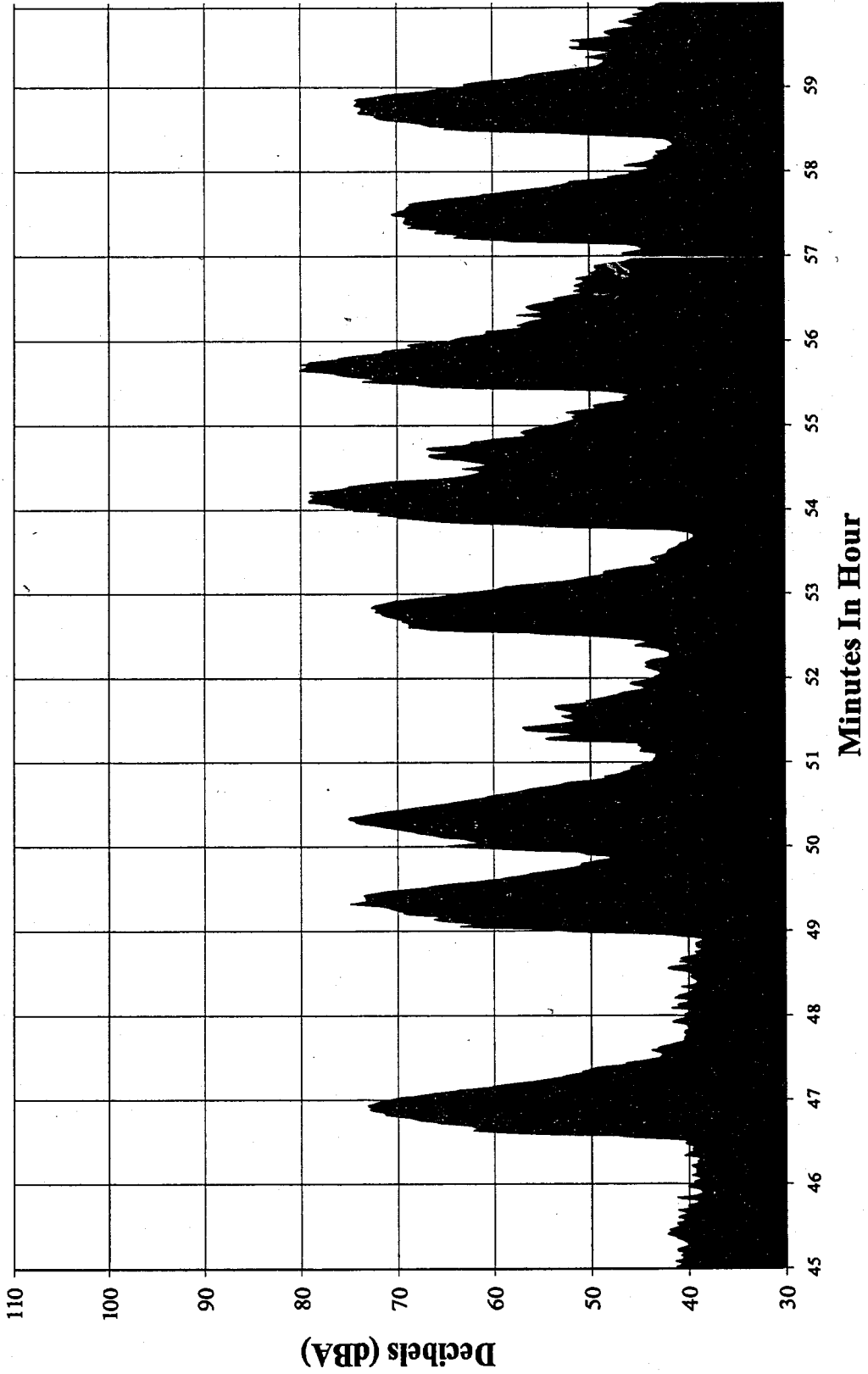
Hourly Noise Graph

Period: Spring 1998 (April 21 from 6:45:00 AM to 6:59:59 AM)

Site: PS1 - Des Moines - 9th Ave S and S 207th St



One Second Values

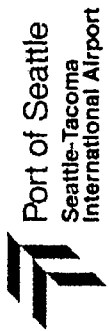


Seattle-Tacoma International Airport Part 150 Study

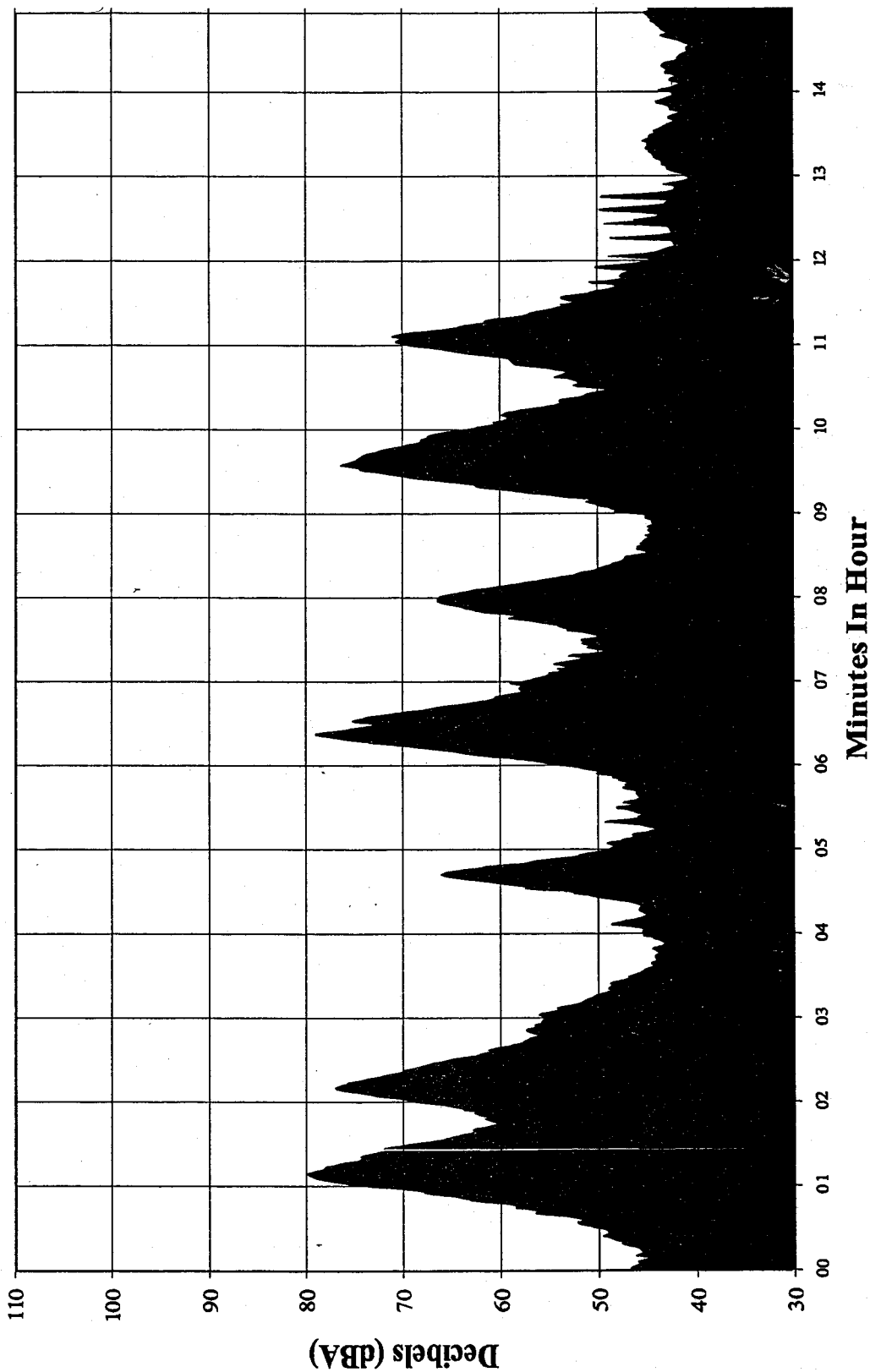
Hourly Noise Graph

Period: Spring 1998 (April 21 from 8:00:00 AM to 8:14:59 AM)

Site: PS2 - Woodmont - 268th St and 17th Ave S



One Second Values

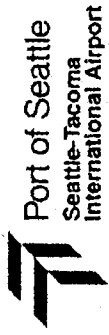


Seattle-Tacoma International Airport Part 150 Study

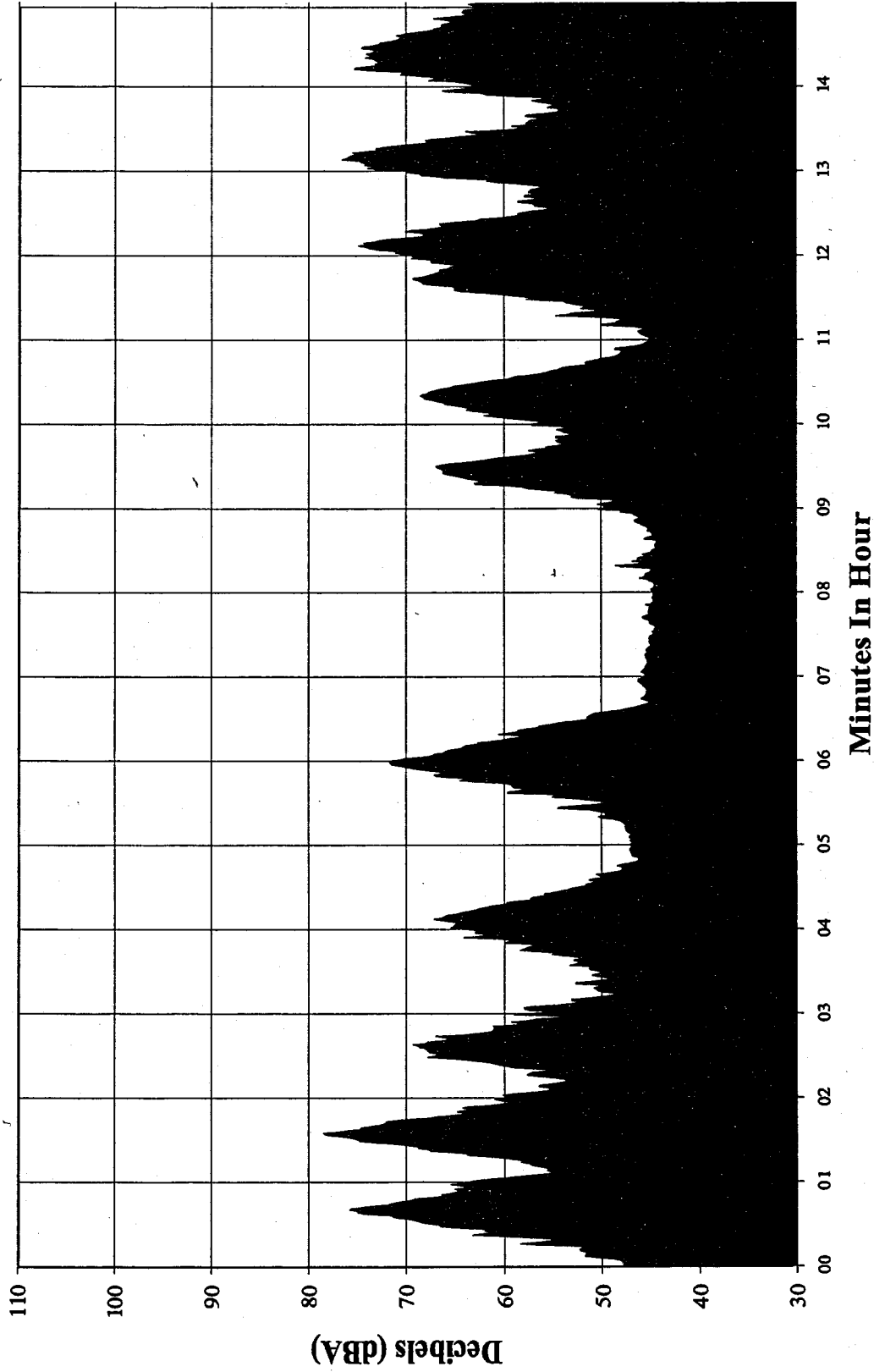
Hourly Noise Graph

Period: Spring 1998 (April 17 from 7:00:00 AM to 7:14:59 AM)

Site: PS3 - Steel Lake - 23rd Ave S and S 300th St.



One Second Values

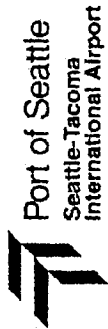


Seattle-Tacoma International Airport Part 150 Study

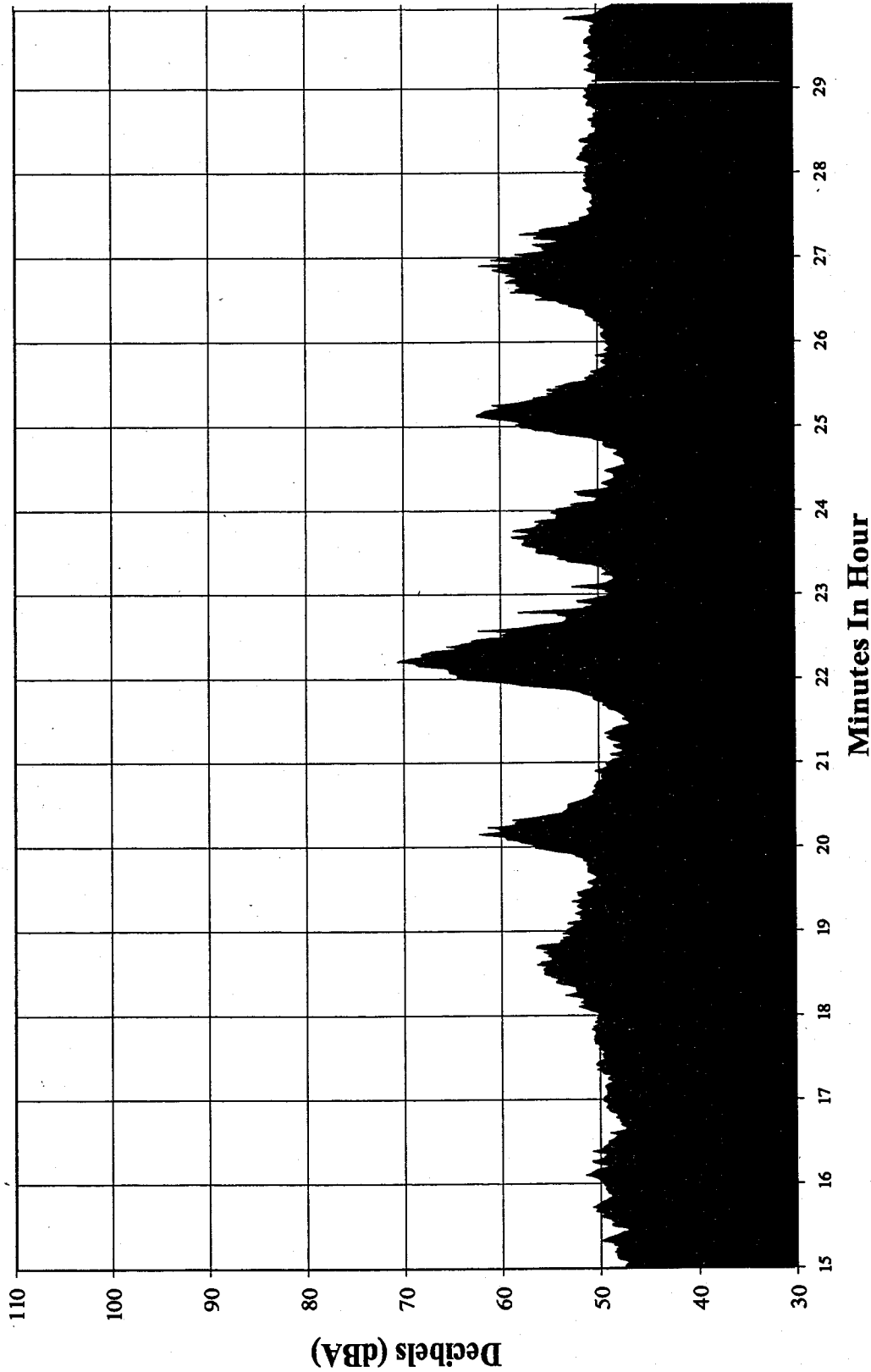
Hourly Noise Graph

Period: Spring 1998 (April 18 from 6:15:00 AM to 6:29:59 AM)

Site: PS4 - Auburn - 45th Pl S and S 290th St



One Second Values

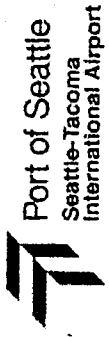


Seattle-Tacoma International Airport Part 150 Study

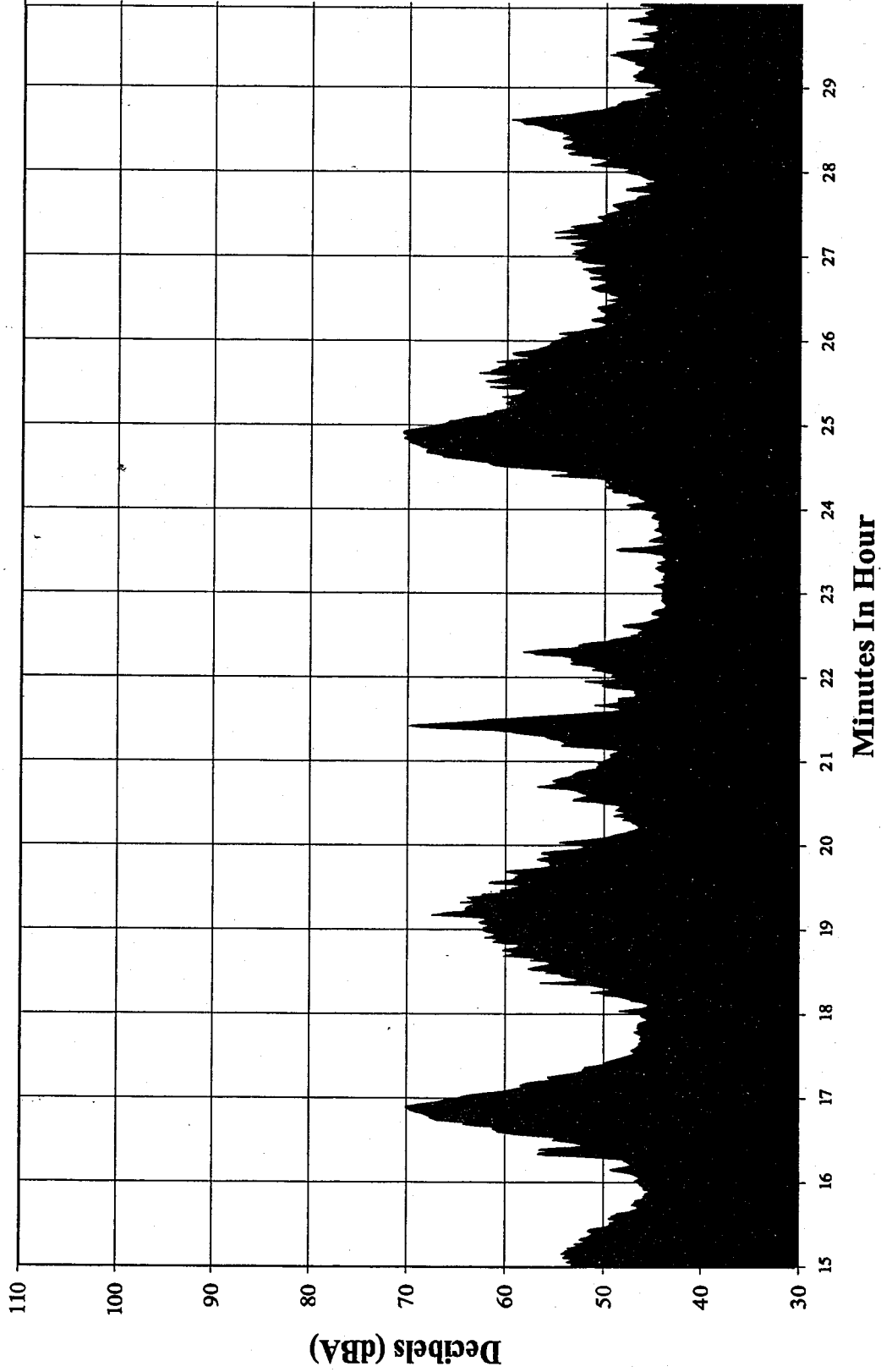
Hourly Noise Graph

Period: Spring 1998 (April 15 from 7:15:00 AM to 7:29:59 AM)

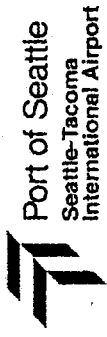
Site: PS5 - Federal Way - SW 327th St and 17th Ave SW



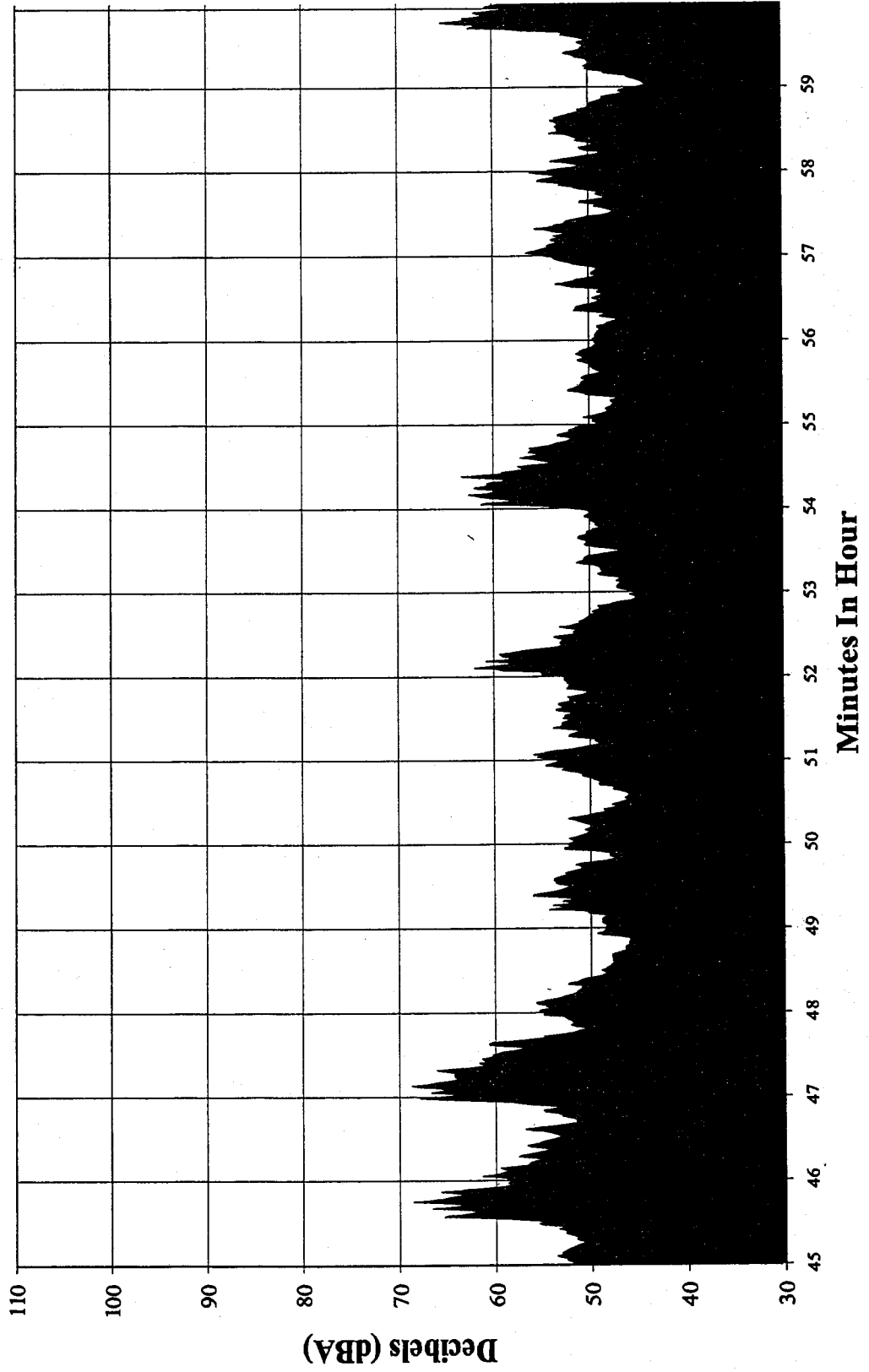
One Second Values



Seattle-Tacoma International Airport Part 150 Study
Hourly Noise Graph
Period: Spring 1998 (May 2 from 6:45:00 AM to 6:59:59 AM)
Site: T3 - Burien - Des Moines Mem. Dr. and S 168th Pl



One Second Values



Appendix Twenty-Four. Glossary

Glossary

Airport Acceptance Rate – The maximum number of arrivals at an airport and varies depending upon several conditions such as number of runways available, weather conditions, direction of flow, types of approaches and operational conditions.

ARTCC (Air Route Traffic Control Center) – A regional facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight.

ATA (Airport Traffic Area) – Class D Airspace. Airspace established around airports with operating air traffic control towers. Class D Airspace generally consists of a 5-mile horizontal radius surrounding the airport and with a ceiling upper limit of 2,500 feet above ground level. Pilots must maintain radio contact with the ATCT while operating in this airspace.

ATCT (Air Traffic Control Tower) – The facility that supervises, directs, and monitors the arrival and departure of air traffic at an airport and in the immediate airspace surrounding an airport (about 5 miles).

IFR (Instrument Flight Rules) – Rules governing the procedures for instrument flight. Instrument flight rules prevail when weather conditions are less than those required for Visual Flight Rules.

SID (Standard Instrument Departure) – A preplanned IFR air traffic control departure procedure published for pilot use.

STAR (Standard Terminal Arrival Route) – A preplanned IFR air traffic control arrival procedure published for pilot use.

TCA (Terminal Control Area) – Class B Airspace. Airspace surrounding high-density traffic airports (such as Sea-Tac) in which both VFR and IFR operations are permitted but an ATCT clearance is required to enter the airspace.

TRACON (Terminal Radar Approach Control) – The facility that monitors the air traffic in the airspace surrounding airports with moderate to high-density traffic. The TRACON has jurisdiction in the control and separation of air traffic from the boundary area of the ATCT at an airport to a distance of up to 50 miles from the airport.

VFR (Visual Flight Rules) – Rules that govern the procedures for conducting flight under visual weather conditions.

Appendix Twenty-Five. Current Noise Abatement Program

**FINAL PACKAGE
OF MEDIATED NOISE
ABATEMENT ACTIONS
FOR
SEATTLE-TACOMA INTERNATIONAL AIRPORT
AGREED TO BY THE
MEDIATION COMMITTEE
ON MARCH 31, 1990**

**PREPARED BY THE
PORT OF SEATTLE
AND
MESTRE GREVE ASSOCIATES
ON BEHALF OF THE
MEDIATION COMMITTEE**

TABLE OF CONTENTS

Section I:	Noise Budget	Page 3
Section II:	Nighttime Limitation	Page 4
Section III:	Noise Remedy/Mitigation Program	Page 4
A.	Increase in Annual Rate of Insulation	Page 5
B.	Audit Procedure	Page 5
C.	Enhance Noise Remedy "Cost Share" Program Area	Page 5
D.	Mobile Homes	Page 6
E.	Hardship Committee	Page 6
F.	Priority Listing	Page 6
G.	Transaction Assistance	Page 7
H.	Public Buildings	Page 7
Section IV:	Improve Duwamish Industrial/Elliott Bay Corridor Noise Abatement Procedures	Page 7
A.	Duwamish/Elliott Bay Corridor Procedures	Page 8
B.	Microwave Landing System	Page 8
Section V:	Nighttime Flight Corridors	Page 9
Section VI:	Control of Ground Noise	Page 10
Section VII:	Noise Management System	Page 11
Tier 1:	Expand Existing Flight Track Monitoring System	Page 12
Tier 2:	Develop New Comprehensive Noise Management System	Page 12
Tier 3:	Integrate Noise and Flight Track Monitoring	Page 13
Section VIII:	Flight Track Management	Page 14
	Statement Regarding Flight Tracks	Page 14
Section IX:	Control Noise From Most Annoying Operations	Page 15
Section X:	Initiate Noise Abatement Committee	Page 15
Section XI:	Changes in Present Conditions	Page 16
Section XII:	Process	Page 16
Appendix C:	Sea-Tac Noise Abatement Committee	Page 17

According to the technical consultant, this agreement represents the most comprehensive noise control program of any major international airport in the country. Full implementation of all these agreements could result in an overall noise reduction of approximately 50% in terms of the Ldn noise levels in the communities surrounding the airport.

NOTES:

Italics indicate changes to the Draft Package resulting from the Mediation Committee meeting on 3/31/90.

Symbol "R" on pages eight and nine indicate that some language was modified after March 31, 1990 as the result of comments received from the Mediator, based upon the Mediator's notes.

SECTION I: NOISE BUDGET

GOAL

The goal of a noise budget is to reduce the overall amount of noise at Seattle-Tacoma International Airport by encouraging an increased percentage of Stage 3 aircraft at Sea-Tac and the acquisition of Stage 3 aircraft system wide. Appendix A presents the framework for this draft noise budget.

- AGREEMENT 1:** The Average Noise Energy Level (ANEL), as defined in Appendix A, will be established as the formula to be used in the noise budget.
- AGREEMENT 2:** The noise reference data used in the formula is based upon the *most up to date version of the* Integrated Noise Model (INM) data base as presented in Appendix A.
- AGREEMENT 3:** The year 2001 will be the target year for reaching the noise reduction goal.
- AGREEMENT 4:** The base period will be developed relative to the average daily operations for the month of August, 1989.
- AGREEMENT 5:** The Noise Bank will be 10% to 15% of the August, 1989 *allocated* base level and is subject to the same reduction formula consistent with Proposal 8.
- AGREEMENT 6:** Airlines whose operations generate less than 55 TCNEL (as defined in Appendix 1) and international operations will be considered non-allocated and not factored into the equation. *Note: A TCNEL noise level of 55 is equivalent to four landing and takeoff cycles of the B727-200/D15QN aircraft during the daytime hours and represents approximately 1% of the total noise as measured in ANEL. Over time, efforts will be made to reduce the 55 TCNEL limit.*
- AGREEMENT 7:** An individual airline will not require a noise certificate if its operations at Sea-Tac exceed a specified level of Stage 3 aircraft. Initially, this level will be set between 60% and 80% and will increase 2.5% every year to the ultimate percentage of 95%.
- AGREEMENT 8:** The year 2001 annual ANEL noise energy will be reduced by more than 50% from the base reference ANEL. * *As illustrated in Appendix A, interim goals for maximum permissible ANEL will be established.*
- AGREEMENT 9:** A finalized draft agreement will be presented to the airlines by April 21, 1990.
- AGREEMENT 10:** The development of administrative and implementation details will be completed by October 1, 1990.
- AGREEMENT 11:** *If the noise reduction goal is not met for two consecutive enforcement periods, new procedures will be examined to achieve the 2001 noise reduction goal.*

IMPLEMENTING AUTHORITY: Port of Seattle

* (Note: This represents a commitment to at least 35% to 45% reduction from the 1988 annual ANEL.)

SECTION II: NIGHTTIME LIMITATIONS

GOAL

The goal of the nighttime limitations program is to reduce the noise levels from nighttime turbojet operations by phasing out the operations of Stage 2 aircraft as set forth in Appendix B.

AGREEMENT 1: The initial hours of the nighttime limitation program will be set from midnight to 6:00 a.m. with further expansion of these hours over time until the ultimate goal is reached of 10:00 p.m. to 7 a.m. *It is the intent of this agreement to provide for shifts of aircraft operations from nighttime to daytime that are meaningful and made in good faith.*

AGREEMENT 2: A grandfather period will allow existing Stage 2 operations for the first two years of the program.* *The grandfather period will commence on the date the nighttime limitations agreement becomes effective.*

AGREEMENT 3: Operations with aircraft for which there are no Stage 3 equivalent or retrofits available can receive a variance until such aircraft or retrofits become available. *The Noise Abatement Committee will conduct periodic and regular examination of the availability of retrofits.*

AGREEMENT 4: The development of administrative and implementation details will be completed by October 1, 1990.

AGREEMENT 5: *This agreement will become effective on or before October 1, 1990.*

AGREEMENT 6: *Reducing nighttime noise is a high priority. Efforts to reduce nighttime noise will continue as possible.*

IMPLEMENTING AUTHORITY: Port of Seattle

SECTION III: NOISE REMEDY/MITIGATION PROGRAM

GOAL

This program will increase the efficiency and availability of the noise insulation program so that it will better serve the needs of a greater number of homeowners within the Part 150 Noise Remedy Program area. It will not reduce noise, but rather will provide additional efforts to mitigate the effects of noise on the community by providing for a more usable indoor living environment. Success of this program is therefore measured in terms of reduced population adversely affected by aircraft noise.

Note - All costs of the Noise Remedy Program will be shared 80/20 by the Federal Aviation Administration and the Port of Seattle, respectively.

*Grandfather operations are defined as Stage 2 flights that have been operated on a regular schedule during a time period between March 31, 1989 and March 31, 1990.

A. INCREASE IN ANNUAL RATE OF INSULATION

AGREEMENT 1: Contingent upon continued FAA funding of the program, increase the rate of home insulation from the present 175 per year to 350 per year. This will require hiring approximately six additional staff. With completion of the acquisition program in 1992, the Port of Seattle will consider phasing in a higher rate of insulation and staffing.

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

B. AUDIT PROCEDURE

BACKGROUND

High program costs and the lengthy processing time for noise audits currently limit the availability of the Noise Remedy Program. Current FAA policy requires that each house in the program be noise audited both before and after the house has been insulated. Each audit costs \$250 and requires not only appropriate weather conditions, but also homeowner availability. Each audit process takes about two months to complete. Currently, approximately fifteen audits are being completed each month. A reasonably accurate measure of noise intrusion can be estimated using a representative audit sample and a computer simulation model.

AGREEMENT 1: The Port of Seattle and the Federal Aviation Administration will work together to reduce the number of audits in the Noise Remedy Program area by approximately two-thirds. Accuracy of noise attenuation measures will be ensured using a computer model that simulates the actual audit.

AGREEMENT 2: If the method for computer simulated audits described in *Agreement 1* is found to be accurate and successful, the Port of Seattle will explore reducing the percentage of homes audited further, with an ultimate goal of ten percent. [Any funds saved as a result of this audit procedure would revert directly back to the Noise Remedy Program.]

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

C. ENHANCE NOISE REMEDY "COST SHARE" PROGRAM AREA

BACKGROUND

Citizens are reluctant to pay half the costs for a program designed to mitigate a problem they did not directly cause; there is, therefore little community interest in the noise remedy Cost-Share program.

AGREEMENT 1: Implement standardized insulation package for all houses in the Cost Share area.

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

AGREEMENT 2: Contingent on standardization of the insulation package (see *Agreement 1*), the Port of Seattle will pay all of the insulation costs in the current Cost Share Noise Remedy Program area. (Currently a homeowner is responsible for providing half of the funds.)

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

D. MOBILE HOMES

BACKGROUND

Residents within the Part 150 area who live in mobile homes experience extreme amounts of aircraft noise. A 1985 Demonstration Program of the Port's Noise Remedy Program tested the effectiveness of acoustical insulation on mobile homes, and found that it is neither a physically nor aesthetically acceptable method of mitigating the noise problem.

AGREEMENT 1: During the next year the Port of Seattle will continue to explore ways to deal effectively with mobile homes, especially in cooperation with other governmental entities, and will produce a report on possible mitigation actions.

IMPLEMENTING AUTHORITY: Port of Seattle and other governmental agencies

E. HARDSHIP COMMITTEE

AGREEMENT 1: A hardship committee will be initiated for the insulation program. This committee will evaluate requests from applicants for special consideration due to hardship (medical, financial, etc.). This committee will decide priority issues only (including criteria), and will not address policy or budgeting. Cases will be evaluated individually. The committee will be comprised of both citizens from the Noise Remedy area and Port staff.

IMPLEMENTING AUTHORITY: Port of Seattle, citizen committee

F. PRIORITY LISTING

BACKGROUND

The current priority system, initiated in 1985 based on recommendations of a citizen advisory committee, gives priority to applicants in the noisiest areas and those who have owned their homes the longest. Additional consideration is given to owners of homes that are adjacent to clear-zone or acquisition areas.

Applicants have complained that *the continually evolving insulation schedule, based on the current priority system, makes home improvement planning difficult.*

AGREEMENT 1: The Port will amend the current priority system in conjunction with other Noise Remedy

improvements to minimize the homeowner's sense of uncertainty concerning when the applicant will be accepted. Consideration will be given to the homeowners' date of application to the program. *Care will be taken to ensure that homeowners who are already on the application list for Noise Remedy will not be dropped from the list as a result of any modifications to the priority system.*

IMPLEMENTING AUTHORITY: Port of Seattle

G. TRANSACTION ASSISTANCE

AGREEMENT 1: Develop a limited program for enhanced transaction assistance for homeowners who live adjacent* to buy-out areas. The Port of Seattle will purchase, insulate, and then resell these homes. If successful, the program may be expanded.

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

H. PUBLIC BUILDINGS

BACKGROUND

Current FAA regulations and the language in the FAA's Part 150 document limit public building eligibility for insulation to public schools and hospitals.

AGREEMENT 1: Expand existing program to provide insulation for additional types of public buildings (eg. auditoriums, private schools, churches, day care centers, libraries, etc.). Pursue amendment to current Part 150 document. *Port of Seattle will inventory and examine the feasibility of noise monitoring public buildings that border on the 65 Ldn contour, and will investigate the possibility of insulating these buildings if noise levels so warrant.*

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration, citizen advisory group

SECTION IV: IMPROVE DUWAMISH/ELLIOTT BAY CORRIDOR NOISE ABATEMENT PROCEDURES

GOAL

The goal of this action is to minimize jet overflight noise for residential areas adjacent to the Duwamish /Elliott Bay Corridor.

**For the purposes of this program a house is adjacent if the property line abuts or is directly across the street from any Sea-Tac Airport property or property owned (or to be acquired by) the Port of Seattle. See Noise Remedy Program Procedural Guidelines for diagrammatic example.*

A. DUWAMISH/ELLIOTT BAY CORRIDOR PROCEDURES

BACKGROUND

The Duwamish/Elliott Bay Corridor is an essential noise mitigation measure for north flow departure procedures. Currently, the air traffic controllers provide departure instructions to a pilot and, in most cases, observe the aircraft on radar to ensure they remain on assigned paths. Controllers frequently provide radar vectors for separation of departures. The following actions will improve the Duwamish/Elliott Bay procedures.

AGREEMENT 1: To provide controllers with *better* means of guidance, *the outlines of Elliott Bay, Bainbridge and Vashon Islands will be depicted on the Seattle TRACON video map.*

AGREEMENT 2: *FAA tower directives will direct the controller to vector north departures over Boeing Field and Elliott Bay to the maximum extent possible consistent with workload and safety.*

AGREEMENT 3: During periods of low activity, special procedures will be in place for aircraft using the Duwamish Corridor. See SECTION V: NIGHTTIME FLIGHT CORRIDORS.

AGREEMENT 4: Accuracy in the use of the Duwamish/Elliott Bay Corridor will be monitored by the improved Noise Management System. See SECTION VII: NOISE MANAGEMENT SYSTEM.

IMPLEMENTING AUTHORITY: The Federal Aviation Administration will implement *agreements 1 - 3.* The Port of Seattle in cooperation with the Federal Aviation Administration will implement the Noise Management System. See SECTION VII: NOISE MANAGEMENT SYSTEM.

B. MICROWAVE LANDING SYSTEM

BACKGROUND

Existing navigational technology cannot provide more accurate use of the Duwamish/Elliott Bay Corridor. A Microwave Landing System (MLS) can offer possibilities for noise relief measures, especially in regard to the Duwamish/Elliott Bay Corridor. The MLS is so precise and flexible that pilots and controllers would be able to contain flight tracks within the Duwamish/Elliott Bay Corridor virtually all the time.

At this time, the FAA plans to transition from the Instrument Landing System (ILS) to the international standard MLS by January 1, 1998. In order for the MLS to operate, instrumentation will need to be installed in each aircraft.

AGREEMENT 1: Request that the FAA designate Sea-Tac as a demonstration project for the Microwave Landing System.

AGREEMENT 2: When federal progress on this issue occurs, the Port will work with the FAA to establish a program and target dates for phase-in. The program would include a schedule for phase-in of navigational aids and air traffic control procedures. The Port will consider a program of incentives to carriers that accelerate implementation.

IMPLEMENTING AUTHORITY: Port of Seattle and Federal Aviation Administration

SECTION V: NIGHTTIME FLIGHT CORRIDORS

GOAL

The goal of these actions is to minimize the noise impacts from aircraft operations during the most noise sensitive periods (nighttime) by optimizing the use of areas of less noise sensitive land use. Specifically, the goal is to reduce the single-event disturbances from nighttime operations in the communities north of Boeing Field and surrounding Elliott Bay.

It is the intent of this section to sharpen departure tracks through the Duwamish Corridor during nighttime hours. Any changes made are conditional upon assurance that the goal of reducing noise can be achieved. This section is not intended to address the nighttime curfew on north flow east turn departures.

BACKGROUND

This program of actions consists of specific nighttime procedures that can be implemented due to the low traffic volumes from Boeing Field at night. The NOISE MANAGEMENT SYSTEM as described in SECTION VII, will be used to monitor compliance with these procedures.

AGREEMENT 1: During those nighttime hours when traffic is light enough to permit (currently 10 PM to 6 AM) aircraft using the Duwamish Corridor and Elliott Bay will be turned at Boeing Field. Traffic using Boeing Field during these nighttime hours is minimal and can be more easily coordinated with Sea-Tac to ensure a safe and efficient operation.

AGREEMENT 2: During those nighttime hours when traffic is light enough to permit, turbojet aircraft depart north through Elliott Bay and proceed on course utilizing the following routes out of the terminal area. Note, these represent approximate tracks, as different aircraft will reach 10,000 feet at different distances from the airport.

- a. Eastbound *and* Canada destination aircraft shall proceed westbound over Elliott Bay then northbound over Puget Sound until reaching 10,000 feet or the SEA 20 NM DME Fix / SEA 320 radial, whichever comes first, then turn eastbound *or continue north* on course.
- b. Aircraft proceeding to Alaska or the Pacific Rim, shall proceed westbound over Elliott Bay then northbound over Puget Sound until reaching the SEA 20 NM DME Fix / SEA 320 radial at or above 10,000 feet before being turned westbound to cross the shoreline on course.
- c. Aircraft with south or southeast bound destinations shall proceed westbound over Elliott Bay then southbound over Puget Sound until crossing the SEA 12 NM DME Fix / SEA 220 radial at or above 10,000 feet before being turned eastbound to cross the shoreline on course.

Note - the SEA 20 NM DME Fix / 320 radial and the SEA 12 NM DME Fix / 220 radial are approximate reference points and could change slightly when final flight track charting is completed.

IMPLEMENTING AUTHORITY: Federal Aviation Administration

SECTION VI:

CONTROL OF GROUND NOISE

GOAL

The goal of this noise abatement action is to control and reduce the amount of ground noise from the airport both in terms of peak sound levels as well as the duration of the noise events. Although the focus of this action is to control nighttime ground noise there will also be some benefits in reducing ground noise during the daytime hours.

BACKGROUND

This noise abatement goal will be accomplished through implementation of a variety of measures that address the different sources of ground based noise. The potential change in noise from this action will be most effective in the close-in areas, although during certain meteorological conditions these changes will be noticed at more distant locations. The Ldn noise levels at the close-in areas are estimated to be reduced by 0.5 to 2 dBA as a result of these actions. Although the most significant improvements are anticipated to be in terms of reductions in the occasional single event disturbances, these occurrences during nighttime hours can be considerably annoying.

AGREEMENT 1: Prohibit the use of powerback procedures from the gates. Only American Airlines and TWA currently conduct powerback procedures. This would be implemented through a voluntary agreement or, if necessary, by amending the airport's rules and regulations to prohibit powerback procedures.

IMPLEMENTING AUTHORITY: Port of Seattle

AGREEMENT 2: Turbojet engine maintenance run-up restrictions will be enhanced by developing a mechanism for identifying violators of current rules and regulations governing this activity. This will also include a program of penalties to be applied against violators in a scaled format that will range from a letter of reprimand to fines for continued violations within a specified period of time.

IMPLEMENTING AUTHORITY: Port of Seattle, Airlines

AGREEMENT 3: If any additional maintenance base is developed at the airport it will require the provision of an engine "hushing" facility or hush house. The hush house would provide the capacity to abate the noise of the engine maintenance run-ups.

IMPLEMENTING AUTHORITY: Port of Seattle

AGREEMENT 4: Evaluate the effectiveness of reduced use of thrust reversers in conjunction with the development of additional exit taxiways under consideration in the on-going FAA sponsored study on airfield improvements. Additionally, in conjunction with efforts to examine the possibility of such exit taxiways, minimize the noise impacts of thrust reversers for braking of turbojet aircraft by publishing and distributing an ALPA pilot briefing sheet which provides guidance to pilots for minimizing use of thrust reversals.

IMPLEMENTING AUTHORITY: Port of Seattle

AGREEMENT 5: Limit the use of auxiliary power units (APU) particularly during the nighttime hours. Many operators currently have fixed power systems available at their gates. This action addresses those operators who do not have these systems. The Port will negotiate with the operators for installation of fixed power systems or use of ground power units. In the interim, operators will be asked to limit use of APUs to a minimum during the hours between 2400 and 0600.

IMPLEMENTING AUTHORITY: Port of Seattle

AGREEMENT 6: At this time it is not practical or feasible to install sound berms or barriers due to the unique meteorological conditions of Seattle, the topography of the local area, the cost effectiveness of this action, as well as the lack of space available on airport property. The Port will continue monitoring advances in this technology to determine if any future action would provide meaningful noise reduction benefits to adjacent communities.

SECTION VII: NOISE MANAGEMENT SYSTEM

GOAL

Implementation of a noise management system will make it possible to monitor the effectiveness of and compliance with the noise abatement actions that are developed through mediation, and to produce objective data for use as the airlines, FAA and Port officials work to resolve issues of noncompliance.

BACKGROUND

Sea-Tac's current flight tracking system was one of the first in the country and does not have the capabilities to be used on a constant basis to track all individual aircraft. The large amounts of flight track data necessary to do this cannot be provided by the existing computer hardware and software system.

The new noise management system will be tailored to meet the requirements of programs that are unique to Seattle. For example, improving the Duwamish Corridor noise abatement procedures can be validated by an updated airport flight track and noise monitoring system and the aircraft identification system can be used to monitor compliance with the Noise Budget or Nighttime Limitations. Because of the long lead times necessary for designing and procuring a fully developed, multi-component system, Tier 1 is presented as an interim monitoring program. Tier 2 is a much more complex, entirely new system that will fully meet the monitoring needs of the noise abatement actions and programs developed through mediation. Work can begin on Tier 2 while Tier 1 is being implemented and used.

The Noise Management System might eventually include the following components: enhanced noise monitoring, enhanced flight tracking, aircraft identification, monitoring of FAA air traffic Tower tapes, and modified noise complaint processing.

AGREEMENT 1: TIER 1: EXPAND EXISTING FLIGHT TRACK MONITORING SYSTEM

After gaining agreement with the FAA for use of the ARTS IIIA data on disk packs, use an outside service to transfer the ARTS data from the disk packs to 9-track tapes that are directly readable by the Port of Seattle computer. This data is then analysed using the Port's existing software.

The program goal is to monitor one 24-hour period (randomly selected) of flight track data, per week. The time estimate for completing processing of a 24-hour sample is two to three weeks.

When the capabilities of the system have been determined, additional days may be added. The maximum amount of data that can be processed with this system is estimated to be 3 days per week.

After testing, the Tier 1 system will be implemented. This program includes:

- a. Establishing criteria for monitoring compliance with procedures included in this agreement.
- b. Develop a regular report on compliance. Distribute reports to the FAA and to each airline.
- c. If an on-going compliance problem is identified for a particular airline, the chief pilot will be contacted directly.
- d. A summary of flight track monitoring results will be published quarterly in the Sea-Tac Forum newsletter and reported to the Noise Abatement Committee.

IMPLEMENTING AUTHORITY: The primary responsibility belongs to the Port of Seattle. The FAA's responsibility is to provide prompt transfer of the necessary data and cooperation in system integration and use. Airlines.

AGREEMENT 2: TIER 2: DEVELOP NEW COMPREHENSIVE NOISE MANAGEMENT SYSTEM

Evaluate systems available for reading and processing ARTS data on a daily basis. These systems generally include a disk pack reader, dedicated computer and software programs for tape translation, ARTS processing and compliance reports. In addition, the system must be able to provide information concerning (1) aircraft flight track maps on a daily basis; (2) flight track data for individual aircraft; (3) altitude profile analysis; (4) determine level of aircraft operations by type and airline; and (5) integration of tower voice tapes to determine instructions given to the pilot for actions under investigation. Finally, a system requirement will be expandable capabilities to correlate noise monitoring data.

Identify and implement the new flight track monitoring program. This will include the following:

- a. Prompt evaluation of Hotline complaints regarding compliance problems with noise abatement procedures included in this agreement. Integrate flight track data with noise monitoring and taped Tower instructions.
- b. Short reports will be developed for each incident and accompanied by supporting data. If a problem is discovered, the airline or the FAA will be contacted and the data supplied to the responsible party. Reports and follow-up information will be supplied to the caller.
- c. Publish monthly summary of noncomplying incidents and responsible parties in the Sea-Tac Forum Newsletter and release summaries in the form of a quarterly news release.

IMPLEMENTING AUTHORITY: Port of Seattle has the primary responsibility. The FAA's responsibility is to provide on-going support of this program through an agreement to use the ARTS data and to provide prompt transfer of the data.

AGREEMENT 3: TIER 3: INTEGRATE NOISE AND FLIGHT TRACK MONITORING

BACKGROUND

The Port's current noise monitoring system has been in operation since 1979. It consists of 11 remote sites within the Part 150 area. It's primary capability is to measure daily Ldn noise levels.

In this action, the noise monitoring system will be evaluated for expansion and software will be obtained to correlate single event noise level data with individual aircraft operations related to specific flight procedures.

AGREEMENT 3A: Relocate the noise monitoring central processing information center to a more public area of the airport to provide public viewing.

AGREEMENT 3B: Publish reports of the noise monitoring data on regular basis.

AGREEMENT 3C: Evaluate integration of the noise monitoring data with flight track data.

AGREEMENT 3D: Evaluate the capability of the current system to be expanded for remote sites noted in Tier1.

AGREEMENT 3E: Upgrade or replace the noise monitoring system based on results of *Agreements 3C & 3D*.

AGREEMENT 3F: Generate annual contour report using the Integrated Noise Model.

IMPLEMENTING AUTHORITY: Port of Seattle

SECTION VIII: FLIGHT TRACK MANAGEMENT

The Mediation Committee or its designees will have until April 30, 1990 to reach agreement on east turn flight track modifications. If there is agreement on modifications, the Port will seek the concurrence of affected local jurisdictions within 30 days.

All members of the community caucus will have the opportunity to participate in the discussions and to concur in any agreement. The agreement will be forwarded to the Noise Abatement Committee.

The Port and FAA will assist in the discussions and the Port will seek to provide necessary technical assistance.

If there is no such agreement or if such concurrence is not forthcoming, the remainder of this package agreement shall stand and the following statement shall be appended to the "Statement Regarding Flight Tracks".

Whereas certain of the participants including the airlines industry and some communities favor new multiple flight tracks and others favor maintaining existing flight tracks; and,

It is understood that the FAA has the legal authority to initiate such changes as it deems appropriate. However, their agreement will be sought to ensure the implementation of any agreed upon modifications

STATEMENT REGARDING FLIGHT TRACKS

Whereas the Mediation Committee has considered the impacts of existing and proposed flight tracks within the context of noise abatement, differential impacts on communities, efficiency and safety; and,

Whereas certain of the interests, including the airlines industry, favor and anticipate implementation of the FAA's airspace enhancement plan, and other interests, including certain communities do not favor its implementation; and,

Whereas despite their best efforts, participants in the mediation process have been unable to agree upon changes in flight tracks that are acceptable to all participants; and,

Whereas it is understood that the FAA has the legal authority to make such changes as it may deem appropriate,

Therefore no changes to flight tracks are endorsed by this mediation process and it is further understood that these recommendations stand in the absence of such an agreement.

SECTION IX: CONTROL NOISE FROM MOST ANNOYING OPERATIONS

GOAL

This action is meant to control or eliminate particular single event operations that occur on a continuing basis and that are the object of community complaints. While the Port will be the implementing party, success of this action will depend on the cooperation of both the FAA and the airlines.

The Sea-Tac Aircraft Noise Hotline will be the primary tool for use in identifying which operations are most annoying to the community.

AGREEMENT 1: The Hotline complaint form and computer program will be modified to enable staff to crosscheck or sort complaints in a way that will help in associating apparently unrelated complaints with one specific operation or event.

AGREEMENT 2: The Noise Management System will be used to assist in identifying the object of the complaint or assistance will be requested from the FAA.

AGREEMENT 3: When the airline has been identified, the Port will contact it or the FAA to make the parties aware of the specific noise concern and to attempt to reach a solution.

IMPLEMENTING AUTHORITY: The Port of Seattle has the primary responsibility for implementing this measure. Assistance for *Agreement 2* may be required from the FAA if identification is not possible during Tier 1 of the flight track monitoring program. The success of this program depends on the cooperation of the airlines and the FAA in trying to reach solutions.

SECTION X: INITIATE NOISE ABATEMENT COMMITTEE

GOAL

The goal of an on-going committee is to insure that implementation of mediated programs is progressing as expected. *It is the intent that this Committee be formed to adequately represent the interests to this agreement in a balanced manner.*

AGREEMENT 1: A committee designated by the mediation committee will meet at regularly scheduled intervals to review and comment on reports related to mediated noise abatement programs. Initially, meetings will focus on implementation progress, with the committee advising on the resolution of unanticipated implementation problems. After all programs are successfully implemented, meetings will focus on results of the various airport use regulations such as the noise budget and nighttime limitations and on the results of the monitoring activities. The committee will be considered a standing committee. Original committee members will determine the rules under which the committee will operate. *The purpose, procedures and groundrules for the Noise Abatement Committee are outlined in Appendix C.*

IMPLEMENT AUTHORITY: Port of Seattle

SECTION XI: CHANGES IN PRESENT CONDITIONS

For most parties to this mediation agreement there are one or more issues of fundamental importance which constitute the basis for moving ahead with this overall package. Any significant change in such an issue of fundamental importance to any party to this agreement from the manner in which this issue is treated in these recommendations or in the environment within which these agreements were reached would permit the affected party to reconsider its support for the package and relieve itself from the commitments undertaken in this agreement.

Should a party affected by this agreement believe that such significant change has occurred, they shall so inform the Noise Abatement Committee. The Committee shall have 30 days in which to address and seek to resolve this issue.

SECTION XII: PROCESS

Airport staff, with the assistance of members of the Options Subcommittee, the technical consultants and the mediators shall prepare a final draft of the recommendations by April 21, 1990. That draft shall be within the spirit of and any specific provisions contained in these draft recommendations.

The Airport staff shall prepare, in discussion with appropriate parties and authorities, procedures and agreements to implement and administer this agreement by the dates specified in these recommendations (ie. noise budget and nighttime limitations by October 1, 1990).

The Noise Abatement Committee (NAC) shall be established immediately and shall initially be composed of members of the Options Subcommittee. (Procedures and groundrules for the NAC including the change of membership etc. will be included in the April 21 recommendations.) An initial responsibility of the Noise Abatement Committee shall be to focus on the progress in developing the implementation and administrative agreements.

APPENDIX C:

Sea-Tac Noise Abatement Committee

PURPOSE

The purpose of the Sea-Tac Noise Abatement Committee (SNAC) is to provide advice, oversight and continuity during the development, implementation, and duration of the Noise Abatement actions agreed to by the Mediation Committee on March 31, 1990.

PROCEDURES

Meetings: Meetings will initially be held on every two months, and will be facilitated by Port of Seattle staff. Revisions to the meeting schedule may be requested by the Sea-Tac Noise Abatement Committee. Participation in the discussions will be limited to members of SNAC, although meetings will be open to the public. Meetings will be held at Sea-Tac International Airport unless otherwise stated. Staff support, including provision of agendas and minutes, will be provided by the Port of Seattle.

GROUND RULES

Membership:

Membership is to be established and maintained in such a manner as to ensure adequate and balanced representation of the Mediation Committee interests. Initially, membership will be composed of members of the Options Subcommittee of the Mediation Committee, who will be appointed by the Port Commission to serve a term not to exceed two years.

As a member's term expires, or in the event that a member needs to be replaced before the conclusion of his or her term, a replacement will be selected based on procedures determined by the full Noise Abatement Committee. Nominations will be confirmed by the Port of Seattle Commission.

Establishment of further ground rules:

The first priority of the Airport Noise Abatement Committee will be to establish the ground rules under which the committee will operate. These ground rules will address such issues as procedures for meeting conduct, membership requirements, etc.

Agenda:

Initial agendas will focus on establishment of ground rules and implementation progress, with the committee advising on the resolution of unanticipated implementation problems. After all programs are successfully implemented, meetings will focus on results of the various airport use regulations such as the noise budget and nighttime limitations, and on the results of the monitoring activities. The committee will provide continued review and comment on reports related to mediated noise abatement programs.

SEATTLE-TACOMA INTERNATIONAL AIRPORT
NOISE BUDGET

January 1, 1991

(Doc. C:/Noise/Mediation/NB82790.PM4)

Section 1—Statement of Purpose

The purposes of this agreement are to limit aggregate aircraft noise at Seattle-Tacoma International Airport (SEA) and to reduce it over time.

Section 2—Effective Date

This agreement shall become effective on January 1, 1991.

Section 3—Definitions

For the purposes of this agreement, the following definitions will apply:

1. Aircraft — Fixed wing airplane operating in commercial service carrying passengers or cargo.
2. Aircraft Operation — An aircraft landing or takeoff at the Airport.
3. Airport — Seattle-Tacoma International Airport (SEA).
4. Airport Noise Exposure Level and ANEL — The average daily noise exposure level at the Airport produced by the energy sum of the PCANEL and the CCANEL.
5. Airport Noise Fund and ANF — A portion of the Maximum ANEL that has not been allocated and is held by the Port of Seattle for future allocation to new entrants and existing carriers. Noise that reverts to the Port from transfer fees and forfeited or abandoned allocations is added to the Airport Noise Fund. The Airport Noise Fund's noise exposure level is equal to the numerical difference calculated on an energy basis between the Maximum ANEL (per Section 4.A.) and the allocations of PCNEL and CCNEL made according to this Agreement.
6. Allocated Aircraft Operation — Any aircraft operation that is not defined as a Non-Allocated Aircraft Operation (see definition 29. Non-Allocated Aircraft Operation).
7. Allocation — See PCNEL Allocation and/or CCNEL Allocati
8. Average Daily Operations — The total number of Aircraft Operations for a specified period divided by the number of days in that period.

9. Base Period — This is the period of time to be used as a reference point for noise allocation and reduction purposes. The period from August 1, 1989 to and including August 31, 1989 is used as a reference for noise allocations with consideration given to an airline's 1989 average noise exposure level for operations at Sea-Tac.
10. Cargo Carrier — A Carrier the majority of whose operations consist of transporting only property or mail, or both by aircraft.
11. Cargo Carrier Airport Noise Exposure Level and CCANEL — The average daily noise exposure level at the Airport produced by the Average Daily Operations of Cargo Carriers operating during a specified period excluding Non-Allocated Operations.
12. Cargo Carrier Noise Exposure Level and CCNEL — The average daily noise exposure level generated by the Average Daily Operations of an individual Cargo Carrier operating during a specified period computed in accordance with Schedule A.
13. Carrier — Any entity conducting commercial aircraft operations at the Airport, including cargo service. Any group of Carriers serving the airport that are owned or controlled by a single entity or related entities and operating under the same airline identifier, shall be collectively deemed to be a single Carrier.
14. CCNEL Allocation — The portion of the CCANEL allocated annually to an individual Cargo Carrier pursuant to a valid Noise Certificate.
15. Compliance Period — A three month (quarterly) period beginning on January 1, April 1, July 1, and October 1 of each calendar year, and during which noise levels for each carrier are calculated and averaged. Compliance Period noise levels are monitored to ensure that carriers will be able to comply with the year-end Enforcement Period (annual) limits. In addition, there are limits on the amount by which a carrier's noise energy during a Compliance Period may exceed the Enforcement Period PCNEL or CCNEL allocation.
16. Daytime — The period from 7:00:00 a.m. local time until 9:59:59 p.m. local time.
17. Director of Aviation — The Director of the Port of Seattle Aviation Division or a designee.
18. Effective Date — January 1, 1991, the date this agreement becomes effective.
19. Enforcement Period — An annual period beginning January 1 of each calendar year.
20. Equivalent Aircraft Cycle — The noise exposure produced by a landing and takeoff of a Boeing 727-200 with JT8D-15QN engines. This is the most commonly used aircraft at the airport, and its noise level is defined in Table A-1.

21. Chief Executive Officer — The Chief Executive Officer of the Port of Seattle or a designee.
22. Foreign Carrier — A Carrier which is a Foreign Air Carrier as defined in 49 U.S.C.A. §1301.
23. Government Aircraft — An aircraft used in the service of a local, state or national government or of any political subdivision thereof, including the United States and any state, territory, or possession of the United States, or the District of Columbia, but not including any aircraft engaged in carrying persons or property for a commercial purpose.
24. International Service — A scheduled or nonscheduled Aircraft Operation conducted pursuant to a bilateral agreement between the United States and a foreign government where the takeoff or the landing is at a location outside of the United States, or, for a Foreign Air Carrier, where the flight segment is a part of flight that begins or ends at a location outside of the United States. However, whenever the bilateral agreement between the United States and a foreign government is amended so that the bilateral agreement actually functions as a free market system, then the International Carrier will be reexamined as to changing that Carrier from a Non-Allocated Carrier to an Allocated Carrier.
25. Maximum Airport Noise Exposure Level — The average daily noise exposure level at the Airport produced by the energy sum of the PCANEL, the CCANEL, and the noise held in reserve in the Airport Noise Fund. The Maximum Airport Noise Exposure Level is reduced over time in accordance with Section 4.A.
26. Nighttime — The period from 10:00:00 p.m. local time until 6:59:59 a.m. local time.
27. Noise Certificate — A document that specifies an individual carrier's PCNEL or CCNEL allocation calculated in accordance with the procedures set forth in Schedule A.
28. Noise Exposure Level — The measure of exposure to aircraft noise at the Airport computed in accordance with the procedures set forth in Schedule A.
29. Non-Allocated Aircraft Operation — One of the following types of aircraft operations:
 - a. operations by Government Aircraft;
 - b. operations by carriers which produce a PCNEL or CCNEL less than the TCNEL; and
 - c. operations by aircraft providing International Service (unless the carrier has elected to have its International Stage 3 aircraft operations counted as part of its Stage 3 percentage pursuant to Section 6.C., in which case all of its international operations are to be considered Allocated Aircraft Operations.)

30. Passenger Carrier — A Carrier the majority of whose operations consist of transporting passengers by aircraft.
31. Passenger Carrier Airport Noise Exposure Level and PCANEL — The average daily noise exposure level at the Airport produced by the Average Daily Operations of Passenger Carriers operating during a specified period excluding Non-Allocated Operations.
32. Passenger Carrier Noise Exposure Level and PCNEL — The average daily noise exposure level generated by the Average Daily Operations of an individual Passenger Carrier operating during a specified period computed in accordance with Schedule A.
33. PCNEL Allocation — The portion of the PCANEL allocated annually to an individual Passenger Carrier pursuant to a Noise Certificate.
34. Port — The Port of Seattle.
35. Stage 2 Aircraft — An aircraft that is certificated by the FAA as complying with the noise levels prescribed in 14 C.F.R. Part 36, Appendix C, Section 36.5 (a)(2).
36. Stage 3 Aircraft — An aircraft that is certificated by the FAA as complying with or with a placard operated to meet the noise levels prescribed in 14 C.F.R. Part 36, Appendix C, Section 36.5 (a)(3).
37. Threshold Carrier Noise Exposure Level and TCNEL — An average daily noise exposure level below which a Carrier's PCNEL or CCNEL is considered to not significantly impact the overall noise exposure level of the Airport. This level is to be set at an Enforcement Period noise exposure level of 55.00 dB, which is approximately equal to four daytime landing and takeoff cycles of a 727-200/15 QN as defined in Table A-1. (If in 1997 the number of all Stage 2 aircraft operations [excluding government and international] falling below this threshold exceeds a noise exposure level of 59.00 dB then methods to phase out these aircraft will be examined.)
38. Transfer Fee — An amount of noise forfeited to the Airport Noise Fund when a PCNEL or CCNEL Allocation is transferred from one carrier to another. The Transfer Fee is equal to 0.30 dB of the purchased noise exposure level.

Section 4—ANEL Limits

A. The Maximum ANEL permitted at the Airport is as follows:

<u>For the Calendar Year Base Period</u>	<u>Maximum ANEL*</u>	<u>Percent Reduction*</u>
1991	74.53	0%
1992	74.35	4%
1993	74.17	8%
1994	73.88	14%
1995	73.59	19%
1996	73.28	25%
1997	72.97	30%
1998	72.66	35%
1999	72.31	40%
2000	71.96	45%
2001	71.60	49%
	71.24	53%

The specific reduction values for each carrier are shown in Schedule A., Section 6.

Section 5—Carrier Noise Allocations and Noise Certificates

- A. The PCANEL allocations shall be allocated from the ANEL to each Passenger Carrier (excluding government and international carriers) that conducted Aircraft Operations at the Airport during the Base Period that resulted in the Carrier's PCNEL meeting or exceeding the TCNEL, in the form of PCNEL Allocations in proportion to each Carrier's share of actual PCANEL. The PCNEL Allocations will initially be set at levels based upon each Carrier's PCNEL for the Base period as computed in Schedule A. Beginning in the year 1991 and continuing each year until 2001, each Carrier's PCNEL Allocation will be reduced in accordance with Schedule A.
- B. The CCANEL allocations shall be allocated from the ANEL to each Cargo Carrier (excluding government and international carriers) that conducted Aircraft Operations at the Airport during the Base Period that resulted in the Carrier's CCNEL meeting or exceeding the TCNEL, in the form of CCNEL Allocations, in proportion to each Cargo Carrier's share of actual CCANEL. The CCNEL Allocations will initially be set at levels based upon each Carrier's CCNEL for the Base Period as computed in Schedule A. Beginning in the year 1991 and continuing each year until 2001, each Carrier's CCNEL Allocation will be reduced in accordance with Schedule A.
- C. The noise exposure level generated by an interchange flight will be allocated to the carrier who provides the pilot in command or in any other manner mutually agreeable to the carriers involved and the Port of Seattle. The noise exposure level generated by contract operations

between two carriers may be allocated or reallocated in a manner mutually agreeable to the carriers involved and the Port of Seattle.

- D. On the Effective Date, the Director of Aviation shall issue a Noise Certificate to each Carrier (excluding government and international carriers) that conducted Aircraft Operations at the Airport during the Base Period that resulted in the Carrier's PCNEL or CCNEL meeting or exceeding the TCNEL. After the Effective Date, the Director of Aviation shall issue a Noise Certificate within thirty (30) days of the end of each calendar year to each Carrier which during the preceding calendar year conducted Aircraft Operations at the Airport that resulted in the Carrier's PCNEL or CCNEL meeting or exceeding the TCNEL (excluding international and government carriers). No such Noise Certificate shall be valid for more than one (1) year and thirty (30) days.
- E. Each Noise Certificate issued shall specify the individual Carrier's PCNEL or CCNEL Allocation calculated in accordance with the procedures set forth in Schedule A. The allocation set out in a Carrier's Noise Certificate shall be conclusive, and the Carrier shall be deemed to have agreed with the allocation if the Director of Aviation has not received a written objection from the Carrier in accordance with Section 11 of this agreement within thirty (30) days after the date of issuance of the Noise Certificate to the Carrier.
- F. Upon receiving a written request, the Director of Aviation may issue a Noise Certificate at any time during the year to a Carrier which was not issued a Noise Certificate under Section 5.D. No such Noise Certificate shall be valid for more than one (1) year and one hundred eighty (180) days.
- G. All or any portion of a Carrier's PCNEL or CCNEL Allocation may be bought, sold, leased, assigned or otherwise transferred by such Carrier. Should this take place, however, there shall be assessed by the Director of Aviation a Transfer Fee. Such a Transfer Fee shall not apply to transfers of Allocations resulting from the merger of two carriers, or the acquisition of one carrier by another. The Transfer Fee shall be 0.30 dB of the purchased noise exposure level and shall be assessed in addition to the next annual reduction according to Schedule A of this Agreement. This Transfer Fee shall be placed in the Airport Noise Fund pursuant to Section 7. The Noise Certificates of the transferer and transferee Carriers shall be amended by the Director of Aviation to reflect the transfer.
- H. A transfer of a PCNEL or CCNEL Allocation shall become effective upon the date of issuance by the Director of Aviation of new Noise Certificates to the Carriers that are parties to the transfer. The Director of Aviation shall record transfers and issue new Noise Certificates within fifteen (15) business days after receipt of a written request from the transferer carrier.
- I. No transfer by a Carrier of its PCNEL or CCNEL Allocation shall change the type of the allocation as a PCNEL or CCNEL allocation unless approved in writing by the Director of Aviation.

- J. A change in the type of an allocation shall become effective upon the date of issuance by the Director of Aviation of a new Noise Certificate(s). The Director of Aviation shall record any changes and issue a new certificate(s) within fifteen (15) business days after its approval.
- K. Except when the absence of operations is beyond the carrier's control (due to a strike, etc.), if any Carrier which has been issued a Noise Certificate ceases to operate for one quarter or more then the Director of Aviation may revoke the Carrier's Noise Certificate. A Carrier's PCNEL or CCNEL Allocation forfeited under this section shall be placed in the Port's Noise Fund pursuant to Section 7.
- L. If the actual PCNEL or CCNEL of a Carrier remains less than eighty (80) percent, calculated on an energy basis, of the Carrier's PCNEL or CCNEL Allocation contained in its Noise Certificate for more than one (1) year, then the Director of Aviation may reduce the Carrier's PCNEL or CCNEL Allocation by not more than ten percent (10%), calculated on an energy basis, below its allocation level during any Enforcement Period. This allocation reduction may be in addition to the annual allocation reduction described in Section 4.A. The Director of Aviation shall amend the Carrier's Noise Certificate to reflect the change. Any portion of a Carrier's PCNEL or CCNEL Allocation forfeited under this section shall be placed in the Airport's Noise Fund pursuant to Section 7.

Section 6—Airport Noise Reduction Provisions

- A. Unless otherwise authorized by this agreement, no Carrier may conduct Aircraft Operations which result in its PCNEL or CCNEL meeting or exceeding the TCNEL during any Enforcement period unless it is authorized to do so by a valid Noise Certificate. The TCNEL is to be set at a noise exposure level of 55.00 dB, which is approximately equal to four landing and takeoff cycles of a 727-200/15 QN as defined in Table A-1. However, if in 1997 the number of all exempt Stage 2 aircraft operations (excluding government and international) falling below this threshold exceeds a noise exposure level of 59.00 dB then methods to phase out these aircraft will be examined.
- B. Unless otherwise authorized by this agreement, during any Enforcement Period no Carrier may conduct Aircraft Operations which result in its CCNEL exceeding its CCNEL Allocation or its PCNEL exceeding its PCNEL Allocation authorized by a valid Noise Certificate. During any Compliance Period a carrier's PCNEL or CCNEL may not exceed its Enforcement Period Allocation by more than .35 dB.
- C. Carriers whose Stage 3 jet aircraft operations at the Airport meet or exceed a specific percentage of all the Carrier's jet operations at the Airport will not be required to meet the allocation limits assigned to them so long as the required percentage of Stage 3 operations is met in the Enforcement Period.

As of the effective date of this Agreement, a Carrier whose operations at the Airport subject to allocation are composed of at least 70 percent Stage 3 aircraft will meet the requirements of this section.

In 1992 this will be increased to 73 percent;
In 1993 this will be increased to 77 percent;
In 1994 this will be increased to 81 percent;
In 1995 this will be increased to 85 percent;
In 1996 this will be increased to 90 percent;
In 1997 this will be increased to 95 percent;

After 1997 the percentage will remain at 95 percent for the remainder of the agreement. If it so desires, a domestic carrier may choose to permanently include its international Stage 3 operations in its Stage 3 percentage; however, in doing so it must also permanently include all of its international operations in its PCNEL or CCNEL calculations and in all other terms and conditions of this agreement.

Section 7—Airport Noise Fund

- A. There is hereby established an Airport Noise Fund. The Airport Noise Fund will initially be funded by allocating an amount equal to 10 percent of the Base Period ANEL to the fund. This equals a value of 64.11 dB. In addition, all Transfer Fees, forfeited or abandoned allocations, and airline allocations that have reduced to a level below the TCNEL, will be placed in the Airport Noise Fund. The Airport Noise Fund is to be reduced over time in a manner similar to the passenger carrier and cargo carrier allocation reductions.
- B. The Director of Aviation, upon receiving a written request, may grant new or additional noise allocations to Carriers from the noise available in the Airport Noise Fund should the Director of Aviation determine that the grant of such new or additional noise allocation is necessary or desirable. The Director of Aviation shall not grant any new or additional noise allocation if doing so would cause the total of all of the allocations made to exceed the maximum permissible ANEL specified in Section 4 of this Agreement.
- C. When considering requests for noise allocation grants pursuant to Section 7.B., the Director of Aviation shall use the following standards in determining whether or not to grant new or additional noise allocations to carriers:
1. contribution to total PC/CCNEL and ANEL;
 2. whether the operation is to be conducted with Stage 3 equipment;
 3. whether the requesting carrier has appropriate Stage 3 aircraft on order or proposed lease, and the expected delivery date(s) of those aircraft; demonstration that new or retrofitted Stage 3 aircraft will be scheduled at SEA;
 4. whether any Stage 2 aircraft operated by the requesting carrier could be retrofitted with FAA-approved devices to meet Stage 3 requirements and whether the carrier is diligently pursuing the certification and use of such device(s) for SEA operations;

5. any history of violations of provisions of the Noise Budget;
 6. any history of seeking noise allocation grants in excess of noise created by operations;
 7. ability to commit to future noise reduction requirements (in excess of existing requirements).
- D. The Director of Aviation may allocate noise to carriers from the Airport Noise Fund for a period of time determined by the Director of Aviation.

Section 8—Reporting

- A. Within twenty (20) business days following the end of each Compliance Period, each Carrier operating under a Noise Certificate shall submit a report, in a form satisfactory to the Director of Aviation, which sets forth the engine type used on each of its aircraft operated at the airport during the Compliance Period, and the number of takeoffs and landings by these aircraft specified by daytime and nighttime operations.
- B. Failure by a Carrier to submit information pursuant to this section shall constitute a basis for revocation of the Noise Certificate issued to such Carrier or reduction in such Carrier's PCNEL or CCNEL Allocation.
- C. An intentional misrepresentation of any material fact contained in a report required by this section shall be considered a violation of this agreement.

Section 9—Monitoring

- A. The Director of Aviation shall determine compliance by individual Carriers during each Enforcement Period by quarterly comparing the PCNEL or CCNEL allocations in each Carrier's Noise Certificate with calculations of the Carrier's actual PCNEL or CCNEL, using landing reports, scheduled flight times and actual equipment types, in accordance with the methods specified in Schedule A.
- B. Within forty-five (45) days following the end of each Enforcement Period, the Director of Aviation shall calculate the actual PCNEL or CCNEL of each Carrier and compare it with the Carrier's PCNEL or CCNEL Allocation authorized pursuant to a valid Noise Certificate or otherwise provided under this agreement. A PCNEL or CCNEL produced by a Carrier in any Enforcement Period or in any Compliance Period in excess of a Carrier's authorized PCNEL or CCNEL will be calculated as the numerical differences between the authorized and actual PCNEL or CCNEL.

- C. Within forty-five (45) days following the end of each Enforcement Period, the Director of Aviation shall report to the Port Commission on operations during the previous Enforcement Period, identifying any Carrier which has exceeded its noise allocation and the extent to which the noise allocation was exceeded.

Section 10—Enforcement

- A. Any carrier which has exceeded its authorized PCNEL or CCNEL during an Enforcement Period (as defined in Section 6.B.) will be assessed a noise-related operating fee of up to \$1000 for each equivalent aircraft cycle or portion thereof per day by which it exceeds its Allocation. This noise-related operating fee shall not exceed \$1,000,000 for any Enforcement Period.
- B. A carrier will be assessed a fee if it exceeds its PCNEL OR CCNEL allocation during a Compliance Period by more than 0.35 dB one or more times in any Enforcement Period (See Section 6.B.). Such a fee will be assessed at the end of the Enforcement Period, and will apply only to the Compliance period in which the carrier's PCNEL or CCNEL most exceeded its Allocation during the Enforcement Period.

This fee is to be assessed at a rate of up to \$500 for each equivalent aircraft cycle per day or portion thereof by which the carrier has exceeded its allowable compliance period noise level. The allowable compliance period noise level is equal to the carrier's PCNEL or CCNEL Allocation plus .35 dB. This fee is not to exceed \$250,000 per Carrier per Enforcement Period. This fee is to be assessed independently of any other fees.

- C. All such noise-related operating fees shall be applied by the Port to offset costs associated with noise mitigation and abatement measures at the Airport and shall be due and payable upon receipt of notice from the Director of Aviation. Such fees are subject to public disclosure.
- D. In addition to the assessment of a noise-related operating fee(s), a Carrier whose actual PCNEL or CCNEL has exceeded its PCNEL or CCNEL allocation in two of the three most recent Enforcement Periods by more than 1.0 decibel may have its PCNEL or CCNEL allocation permanently reduced by 0.5 decibels.

Section 11—Dispute Resolution

- A. Any person who claims to be adversely affected by any particular provision of this agreement or any determination, order or decision of the Director of Aviation made pursuant to this agreement may petition the Director of Aviation to grant extraordinary relief from the requirements of the provision pursuant to Section 12 or to review the Director of Aviation's determination, order or decision. Petitions must be in writing and must set forth the petitioner's position and its basis, including all facts upon which the petitioner relies. The Director of Aviation may require the petitioner to provide additional information in support of its petition. The Director of Aviation's final decision shall be based upon the petition, the information provided by the petitioner, and any other information in the record. The Director of Aviation shall issue his or her final decision within thirty (30) days of the date the petition is received by the Director of Aviation, or if the Director of Aviation has required the petitioner to provide additional information in support of its petition, then within thirty (30) days of the date that information is received by the Director of Aviation.
- B. A petitioner adversely affected by a final decision of the Director of Aviation under Section 11.A. may within thirty (30) days of the Director of Aviation's decision petition the Chief Executive Officer to review the Director of Aviation's decision. Filing of such a petition shall stay the decision of the Director of Aviation. Any petition for review must be in writing and must set forth all objections to the Director of Aviation's decision and the basis for the objections. The Chief Executive Officer may supplement the record if he or she believes additional information may be helpful. Data relied upon by the Chief Executive Officer must be in the record or first provided to the carrier who shall be given the opportunity to comment thereon. The Chief Executive Officer shall issue a decision within sixty (60) days of receiving a petition for review.

Section 12—Extraordinary Relief

- A. Waivers of violations of this agreement may be granted by the Director of Aviation upon a clear showing by the Carrier so requesting that the violation occurred due to (i) the mechanical failure of scheduled equipment which necessitated the substitution of other equipment for a period not to exceed three (3) days unless justified, (ii) a diversion of an aircraft to the Airport, or (iii) other circumstances beyond the reasonable control of the Carrier.
- B. The Director of Aviation may also grant such extraordinary relief from the provisions of this agreement as may be deemed necessary or desirable. Such relief shall be of limited duration not to exceed one year unless renewed, and may be subject to reasonable conditions.

Section 13—Severability

If any portion of this agreement or if any application of this agreement is held unconstitutional or otherwise unlawful, the remainder of this agreement and the remaining applications of this agreement shall not be affected thereby.

Schedule A
Computation of Noise Exposure Levels and Allocations
Seattle-Tacoma International Airport
Noise Budget

1. Introduction

This schedule describes the formulas and process used to calculate the Noise Exposure Levels (NEL) and related noise statistics for measuring compliance with the Seattle-Tacoma International Airport Noise Budget. The Port will provide a personal computer-based spreadsheet to facilitate the computations.

2. Noise Exposure Level Computation Process — Compliance Period PCNEL

Step 1 Calculate the number of daytime and nighttime arrivals and departures for each Aircraft Type as a daily average over the entire Compliance Period as follows:

- a. An Aircraft Type is a specific aircraft model/engine combination as listed in Table A-1, "Reference SELs" (sound exposure level). If a carrier operates an aircraft model and/or engine combination not listed in the table, the closest equivalent Aircraft Type shall be used and the substitution noted in an attachment to the calculation. The Port may require the use of a particular equivalent Aircraft Type.
- b. For each Aircraft Type in the carrier's fleet operated at the Airport, calculate the total number of operations over the Compliance Period in each of the following categories: daytime arrivals, daytime departures, nighttime arrivals, and nighttime departures. The scheduled time of arrival or departure shall be used.
- c. Divide each total by the number of days in the Compliance Period to get the daily averages.

Step 2 For each Aircraft Type, calculate the Equivalent Departures (ED) and Equivalent Arrivals (EA) as follows:

- a. $ED = (\text{Average Daytime Departures}) + (10 \times \text{Average Nighttime Departures})$
- b. $EA = (\text{Average Daytime Arrivals}) + (10 \times \text{Average Nighttime Arrivals})$

Step 3 Using the Reference SELs in Table A-1 (or FAA-approved equivalent data), for each Aircraft Type, compute the Partial PCNEL for Departures and the Partial PCNEL for Landings as follows:

$SEL_A =$ SEL at Point A; 30,000 ft. from start of departure roll
 $SEL_B =$ SEL at Point B; 60,000 ft. from start of departure roll
 $SEL_C =$ SEL at Point C; 90,000 ft. from start of departure roll
 $SEL_D =$ SEL at Point D; 20,000 ft. before arrival touchdown point

Note: The value 86,400 in the following formulas is the number of seconds in one day and is part of the conversion from individual aircraft event noise to overall averages.

a. Partial PCNEL for Departures=

$$10 \times \text{Log} \frac{ED \times [\text{Antilog}(SEL_A/10) + \text{Antilog}(SEL_B/10) + \text{Antilog}(SEL_C/10)]}{86,400}$$

b. Partial PCNEL for Arrivals=

$$10 \times \text{Log} \frac{EA \times [\text{Antilog}(SEL_D/10)]}{86,400}$$

Step 4 For each Aircraft Type, compute the contributions to the PCNEL as follows [note: A comparison of the PCNEL contributions for each Aircraft Type can assist in identifying the aircraft's relative contribution to a carrier's total noise.]:

Aircraft PCNEL =

$$10 \times \text{Log} [\text{Antilog}(\text{Partial PCNEL}_{\text{Dep}}/10) + \text{Antilog}(\text{Partial PCNEL}_{\text{Arr}}/10)]$$

Step 5 Compute the Compliance Period PCNEL for all of the carrier's operations as follows:

Compliance Period PCNEL =

$$10 \times \text{Log} [\text{Antilog}(\text{Aircraft}_1 \text{ PCNEL}/10) + \text{Antilog}(\text{Aircraft}_2 \text{ PCNEL}/10) + \dots]$$

including all of the carrier's aircraft types 1,2,...

3. Noise Exposure Level Computation Process — Compliance Period CCNEL

Step 6 Compute the Compliance Period CCNEL for each air cargo carrier in the same manner as illustrated in Section 2, Steps 1 through 5, substituting the term CCNEL for PCNEL wherever the latter appears.

4. Noise Exposure Level Computation Process — Compliance Period ANEL

Step 1 The ANEL for the Airport during the Compliance Period is calculated as follows:

SEA ANEL =

$$10 \times \text{Log} [(\text{Antilog}(\text{PCNEL}_1/10) + \text{Antilog}(\text{PCNEL}_2/10) + \dots) + (\text{Antilog}(\text{CCNEL}_1/10) + \text{Antilog}(\text{CCNEL}_2/10) + \dots)]$$

including all of the passenger carriers 1,2,... and all of the cargo carriers 1, 2,

5. Noise Exposure Level Computation Process — Enforcement Period PCNEL, CCNEL, & ANEL

An Enforcement Period PCNEL, CCNEL, or ANEL is calculated using the same basic formula, which adds the four quarterly Compliance Period values and is calculated as follows:

Enforcement Period PCNEL, CCNEL, or ANEL =

$$10 \text{Log} \frac{\text{Antilog}(\text{EP}_1/10) + \text{Antilog}(\text{EP}_2/10) + \text{Antilog}(\text{EP}_3/10) + \text{Antilog}(\text{EP}_4/10)}{4}$$

where EP_1 , EP_2 , EP_3 , & EP_4 are the values of PCNEL, CCNEL, or ANEL for each of the four Compliance Periods.

6. Computation Process — Subsequent Allocations

Each year the Director of Aviation shall issue to carriers with expiring noise certificates, new noise certificates in the amount of the expiring certificates reduced as follows:

<u>For the Calendar Year</u>	<u>PCNEL Reductions</u>	<u>CCNEL Reductions</u>
1991	0.20 decibels (5%)	0.00 decibels (0%)
1992	0.20 decibels (5%)	0.00 decibels (0%)
1993	0.30 decibels (7%)	0.15 decibels (3%)
1994	0.30 decibels (7%)	0.15 decibels (3%)
1995	0.30 decibels (7%)	0.35 decibels (8%)
1996	0.30 decibels (7%)	0.40 decibels (9%)
1997	0.30 decibels (7%)	0.40 decibels (9%)
1998	0.35 decibels (8%)	0.40 decibels (9%)
1999	0.35 decibels (8%)	0.40 decibels (9%)
2000	0.35 decibels (8%)	0.40 decibels (9%)
2001	0.35 decibels (8%)	0.40 decibels (9%)

* Percentage reductions shown are approximate reductions relative to the previous year. The controlling number is the decibel reduction number.

7. Initial Allocations

Initial allocations for carriers are as follows:

<u>Airline</u>	<u>PCNEL or CCNEL</u>
Alaska Air Group	68.96
United Airlines	65.78
Delta Airlines	65.78
Northwest Airlines	64.12
American Airlines	64.07
Continental Airlines	62.35
Federal Express	60.86
Amerijet	59.89
DHL	57.82
TWA	55.31
U.S. Air	55.30

**PORT OF SEATTLE
SEATTLE-TACOMA INTERNATIONAL AIRPORT**

(NOTE: The following is an excerpt from the Sea-Tac Noise Budget document and outlines standards for granting of noise from the Airport Noise Fund.)

Section 7—Airport Noise Fund

- A. There is hereby established an Airport Noise Fund. The Airport Noise Fund will initially be funded by allocating an amount equal to 10 percent of the Base Period ANEL to the fund. This equals a value of 64.11 dB. In addition, all Transfer Fees, forfeited or abandoned allocations, and airline allocations that have reduced to a level below the TCNEL, will be placed in the Airport Noise Fund. The Airport Noise Fund is to be reduced over time in a manner similar to the passenger carrier and cargo carrier allocation reductions.
- B. The Director of Aviation, upon receiving a written request, may grant new or additional noise allocations to Carriers from the noise available in the Airport Noise Fund should the Director of Aviation determine that the grant of such new or additional noise allocation is necessary or desirable. The Director of Aviation shall not grant any new or additional noise allocation if doing so would cause the total of all of the allocations made to exceed the maximum permissible ANEL specified in Section 4 of this Agreement.
- C. When considering requests for noise allocation grants pursuant to Section 7.B., the Director of Aviation shall use the following standards in determining whether or not to grant new or additional noise allocations to carriers:
1. contribution to total PC/CCNEL and ANEL;
 2. whether the operation is to be conducted with Stage 3 equipment;
 3. whether the requesting carrier has appropriate Stage 3 aircraft on order or proposed lease, and the expected delivery date(s) of those aircraft; demonstration that new or retrofitted Stage 3 aircraft will be scheduled at SEA;
 4. whether any Stage 2 aircraft operated by the requesting carrier could be retrofitted with FAA-approved devices to meet Stage 3 requirements and whether the carrier is diligently pursuing the certification and use of such device(s) for SEA operations;
 5. any history of violations of provisions of the Noise Budget;
 6. any history of seeking noise allocation grants in excess of noise created by operations;
 7. ability to commit to future noise reduction requirements (in excess of existing requirements).
- D. The Director of Aviation may allocate noise to carriers from the Airport Noise Fund for a period of time determined by the Director of Aviation.



SOUND INFORMATION

Seattle-Tacoma International Airport Airport Noise Reduction Programs

The Port of Seattle provides one of the most comprehensive noise management programs in the nation with Sea-Tac's noise abatement and mitigation measures. Sea-Tac's noise programs are divided into **Noise Abatement** and **Noise Remedy**. Noise abatement programs relate directly to noise reduction at the source — models of aircraft and engine types at Sea-Tac, flight procedures, ground noise restrictions, etc.. Noise remedy programs are those that mitigate the effects of noise in the impacted communities. These type of programs include sound insulation of homes, sales assistance and the home acquisition and relocation program.

NOISE ABATEMENT PROGRAMS

Noise Budget

This program guarantees that Sea-Tac will move steadily and predictably toward an all Stage 3 (the quietest) jet fleet, reducing noise each year over the next 10 years. The "budget" allocates the maximum amount of noise that airlines are allowed to make each year at Sea-Tac and this allocation is reduced annually. Since the inception of the program in January 1991, Sea-Tac's Stage 3 fleet mix has increased from 50% to 85%. The national Stage 3 fleet mix in 1996 was 70%.

Nighttime Limitations

This program, which went into effect Oct. 1, 1990, phases out Stage 2 (the noisiest) jet aircraft flights during the nighttime hours. Each year the nighttime hours expanded until October 1, 1995. Since 1995, operations of these jets have been restricted between 10 p.m. and 7 a.m..

Ground Noise Control

Powerbacks. Airlines at Sea-Tac are not allowed to use engine power to back away from gates. With the use of tugs, all aircraft are now pushed away from gates to reduce noise.

Run-ups. Regulations have been established for when and where jet engine maintenance run-ups may occur. During the daytime, run-ups are allowed but only at designated airport locations. Between 10 p.m. and 7 a.m., engine run-ups are allowed only under special circumstances or if related to a departure between 7:00 a.m. and 8:30 a.m.

Noise Abatement Procedures

Routing aircraft to reduce noise is always difficult in densely populated regions. Of the many flight patterns in the greater Seattle-Tacoma metropolitan area, however, certain routing procedures have been designed to help reduce aircraft noise for the community at large by flying aircraft over as few homes as possible. These procedures include:

- *The initial "straight-out" departure corridors, both north and south
- *The Duwamish/Elliott Bay Departure Corridor
- *Puget Sound Nighttime Departure Procedures
- *Puget Sound Arrival Procedures

Flight Track Monitoring

The noise abatement office uses information from the FAA's air traffic control radar system to monitor aircraft performance while operating within established noise abatement corridors. Also, community residents can request flight investigations to identify reasons for noisy events and determine if procedures are being met by the air traffic controllers and airline pilots. The Port of Seattle forwards the findings to the FAA, airlines, pilots, and the Sea-Tac Noise Advisory Committee and seeks the assistance of the airlines and FAA in achieving good performance.

Noise Monitoring

The Port of Seattle has an 11-station permanent noise monitoring system that records noise exposure levels around the airport. These monitors provide data that is used in updating the Sea-Tac noise contours (or noise exposure patterns), which are the basis of the noise remedy programs. Also, this data is used to track the overall reductions in airport noise and to analyze significant noise events.

Noise Information/Complaint Line call: 433-5393 or toll free: 1-800-826-1147

The noise information/complaint line operates 24 hours a day and is an excellent way for the public to ask for information or to let the Port of Seattle know what is most troublesome about aircraft noise over their neighborhoods (i.e. nighttime noise, specific flight, etc.) Calls are either recorded or taken in person and records of citizen concerns are distributed to Port, FAA officials, airlines and the general public.

NOISE REMEDY PROGRAMS

Acquisition and Relocation

The acquisition and relocation program allows the purchase of the most severely impacted homes for their fair market value. The occupants also were assisted in relocating. This program was completed in 1993 with the acquisition of 1,400 homes. (These figures do not include properties which may be acquired due to third runway construction.)

Sound Insulation and Sales Assistance

The goal of the insulation program is to significantly reduce noise within homes around the airport, thus reducing the noise impacts on airport area residents and supporting the residential nature of the neighborhoods. There are no out-of-pocket costs to qualified homeowners.

For details on the noise remedy programs, call 431-5913 or stop by at 1410 South 200th.

Public Information Materials

The Port publishes a wide variety of informational materials to help people understand the aircraft noise issue. You may call the noise information line at 433-5393 to receive any of the following materials:

- *A quarterly newsletter which provides information about airport activities including noise issues, citizens' concerns and statistical results of noise reduction programs;

- *The monthly *Sea-Tac Forum* newsletter, which contains information about the Airport's planning and noise programs and projects;

- *Fact sheets with detailed information about noise reduction programs and other noise related topics.



SOUND INFORMATION

THE NIGHTTIME LIMITATIONS PROGRAM

General Information

The mission of the Port of Seattle's Nighttime Limitations Program is to achieve reductions in the noise level at Sea-Tac Airport by phasing out the use of Stage 2 jet aircraft during nighttime hours. This Stage 2 "curfew" is one of the most valuable among the Port's diverse scope of programs to reduce airport noise. Jim Lynch, a citizen member of the Sea-Tac Noise Advisory Committee, explained it most effectively when he stated in the Port of Seattle's October 1994, FORUM: "I consider this part of the Noise Mediation Agreement the most important, because the benefits to the community are readily perceived. A good night's sleep is essential to everyone's sanity." This program requires the Port to phase in a schedule of restrictions on these noisy

Nighttime Limitations Program Implementation Schedule

- (1) Effective October 1, 1992, Stage 2 jet aircraft may not operate from midnight to 6:00 a.m.
- (2) Effective October 1, 1993, Stage 2 jet aircraft may not operate from 11:00 p.m. to 6:30 a.m.
- (3) Effective October 1, 1994, Stage 2 jet aircraft may not operate from 10:30 p.m. to 6:45 a.m.
- (4) Effective October 1, 1995, Stage 2 jet aircraft may not operate from 10:00 p.m. to 7:00 a.m.

jets. Initiated on October 1, 1990, these nighttime restrictions are enforceable through the authority of Sea-Tac Airport's Rules and Regulations. The implementation schedule for this program is listed in the box below. Step four of this schedule marked the achievement of full implementation of the Nighttime Limitations Program.

What do you mean by Stage 2 versus Stage 3 jet aircraft?

The Federal Aviation Administration provides noise certificates on various types of jet aircraft under the federal regulation Part 36 standards. Stage 1 aircraft, the oldest and noisiest (i.e. B707) have been phased out. Stage 2 jet aircraft include models such as the B727, B737-200 and DC9. Stage 3 jets include the B757, B737-300, MD80, and DC10, and others. Stage 3 jets may also include aircraft that were Stage 2 when manufactured, but have since been hushkitted or completely re-engined to meet the Stage 3 noise standards.

Why do I still hear noise at night if there are restrictions on loud planes?

This program has reduced noise considerably but airport neighbors may occasionally experience noisy aircraft flights at night. Stage 3 jet aircraft are permitted to operate at night and are not subject to the curfew hours in the Nighttime Limitations Program. Although many Stage 3 jet aircraft are quieter than comparable Stage 2 jet aircraft and are usually newer model planes, some Stage 3 jets create noisy flight events. Weather conditions may also effect noise levels. For example, heavy cloud cover can trap noise

at lower altitudes and prevent the quick dissipation of sound. While this program restricts the use of Stage 2 flights at night, some will occur now and then because of variances and exemptions. A *temporary variance* is defined as written permission obtained from the Port of Seattle by the carrier to operate outside the program for a maximum of four months. A *regular variance* is written permission to operate outside the provisions of the program for a period of longer than four months and requires a public notification and comment process.

When an air carrier requests a variance to these restrictions they must demonstrate a compelling need. Before a variance is issued, the Port takes several factors into consideration. These factors include the noise impact upon the community, technological and economic feasibility, and whether the air carrier has taken bona fide measures to comply with the program requirements. These criteria allow the program to be flexible which helps increase its chances for success in the long run.

Exemptions may be allowed in cases where weather delays, air traffic control delays, or other factors beyond the control of the air carrier effect the scheduled time of operation. Each request is carefully reviewed before approval or denial is issued. International operations conducted with a bilateral agreement from the U.S. Government are also exempt.

How does the Port monitor compliance to the Nighttime Limitations Program?

The Nighttime Limitations Program is monitored using information from the Airport Noise and Operations Monitoring System (ANOMS). The ANOMS computer tracks aircraft flights using information provided by the Federal Aviation Administration (FAA). ANOMS has the ability to list each aircraft op-

eration during nighttime hours individually. Aircraft flights are reviewed to determine whether the operation complied with the Nighttime Limitations Program.

Do you ever have violations to the Nighttime Limitations Program?

Occasionally there are violations to the program which are discovered through the review of the ANOMS data and comments from citizens who have noticed unusually loud nighttime flights. The Nighttime Limitations Program mandates that an air carrier receive a letter of admonishment for their first violation. If an air carrier has more violations within the same quarter, they are then assessed monetary fines. The first fine is \$500, the second is \$1000, and additional violations within that quarter are \$2000. A special account has been set up for the collection of this money. This account ensures that any funds collected be spent on noise insulation for community buildings such as libraries or churches.

Information about the nighttime jet activity is published monthly in a Nighttime Limitations Program Report. A copy of this report is forwarded to the FAA, airlines, pilots, and the Sea-Tac Noise Advisory Committee. These groups work together to achieve overall compliance with the Nighttime Limitations Program. If you would like to notify noise staff about an unusually loud nighttime flight, or receive the quarterly noise abatement report please call the noise information line.

Noise Information/Complaint Line

Call: 433-5393

or

Toll Free: 1-800-826-1147



SOUND INFORMATION

FACT SHEET #11

THE NOISE BUDGET PROGRAM

BACKGROUND AND PURPOSE

On January 1, 1991, the Sea-Tac Airport Noise Budget went into effect. The Noise Budget is a long-term program and one of the most significant noise reduction measures contained in the 1990 Noise Mediation Agreement.

The purpose of the Noise Budget is to guarantee that Sea-Tac will move steadily and predictably toward an all Stage 3 fleet. It will reduce noise incrementally between 1991 and 2001 while providing the airlines with the flexibility to meet the current and future demand for air transportation services. Together, the Noise Budget and Nighttime Limitations Program provide the major portion of the noise reduction anticipated from the Noise Mediation Agreement — 50% by the year 2001.

WHAT IS SEA-TAC'S NOISE BUDGET?

The Sea-Tac Noise Budget is similar to a financial budget, but noise energy is apportioned instead of dollars. With the noise budget, specific amounts of noise energy are allocated to each airline and the airport. The Mediation Committee agreed that Sea-Tac Airport would be allowed to use a set amount of noise annually. This amount is based on each airline's noise allocation plus a portion of noise held in reserve as the "Airport Noise Fund", which is administered by the Port of Seattle for special needs such as in the case of new airline entrants into the Seattle market.

The budgeted allocation of noise reduces each year up to year 2001. This includes

reductions to individual airline noise allocations as well as reductions to the Airport Noise Fund. Each airline affected by the budget started in 1991 with a noise allocation, which was a reduced level of its 1989 baseline noise level. An airline must stay within its annual noise allocation but may do so in a variety of ways: switching to quieter Stage 3 aircraft; altering the time of day for takeoffs and landings; or reducing the number of operations.

Because the Noise Budget is aimed at controlling noise from airlines that generate significant noise levels, it contains exemptions for smaller airlines whose operations make a relatively small amount of noise. The Noise Budget also excludes all international flights, as these operate under agreements between the governments of two countries and represent a very small proportion of the overall airport noise. Aircraft used for international flights are typically Stage 3. Emergency and government flights are also exempted.

A major feature of Sea-Tac's Noise Budget is the strong incentive it provides for an airline to convert as rapidly as possible to Stage 3 aircraft. If an airline meets or exceeds certain levels of Stage 3 aircraft scheduling at Sea-Tac, it may operate outside its noise allocation. For 1991, that level was set at 70% Stage 3 and increases each year up to 95% in 1997.

Because an airport may not exclude any carrier from serving Sea-Tac or regulate airline rates, routes or services, the Mediation Committee devised a way to allow new entrants access to Sea-Tac and to provide for airline expansion or necessary service modifications. Airlines may therefore buy or

sell "noise" to each other or may petition the Port of Seattle for use of a portion of the Airport Noise Fund. This "fund", like the noise allocation for each airline, reduces every year. The noise in the Airport Noise Fund is held in reserve and will not be provided to an airline without a petition process and determination by the Airport Director based on set criteria.

The Noise Budget was developed for the Mediation Committee by the engineering firm of Mestre Greve Associates from Newport Beach, California. It is based on a similar noise budget program at Raleigh-Durham Airport and one which was used at the former Denver Stapleton Airport. Only a few other airports have programs like Sea-Tac's Noise Budget.

MONITORING COMPLIANCE

The Sea-Tac Noise Abatement Office monitors airline compliance with the Noise Budget requirements every three months and determines on a yearly basis each airline's performance. Failure to stay within its noise allocation may result in the Port of Seattle assessing an airline a substantial fee.

The Sea-Tac Noise Advisory Committee, composed of some individuals who participated in the Noise Mediation process, monitored the implementation of the Noise Budget. Regular compliance reports are provided to the Sea-Tac Noise Advisory Committee and printed in the Port of Seattle's Noise Abatement Quarterly Report.

1991 FEDERAL NOISE POLICY

In November 1990, Congress enacted the Airport Noise and Capacity Act of 1990 (the Noise Act). The Noise Act established a new national aviation noise policy and directed the

Federal Aviation Administration to phase-out the operation of all Stage 2 aircraft by December 31, 1999. The Noise Act also directed the FAA to establish a national program to review noise and access restrictions on aircraft operations imposed by airport proprietors.

In the FAA regulations, implementing the Noise Act, air carriers have the option of choosing a phase out schedule for Stage 2 aircraft or a phase-in schedule for Stage 3 aircraft. The **national compliance schedule** for these alternatives is in the table below.

National Compliance Schedule

Compliance Date	Phase-out	Phase-in
	(max. Stage 2)	(min. Stage 3)
Dec. 31, 1994	75%	55%
Dec. 31, 1996	50%	65%
Dec. 31, 1998	25%	75%
Dec. 31, 1999	0%	100%

The regulations permit an aircraft operator to apply for a waiver of these interim deadlines. Consequently, there may still be some Stage 2 aircraft operating until December 31, 2003.

Although the Noise Act prohibits airports from enacting any new local noise reduction measures that are more restrictive than the national policy, Sea-Tac's package of noise reduction measures was agreed to prior to the implementation of this policy. Because of this, Sea-Tac's Noise Budget program, which is more restrictive than the national policy, was allowed to remain in effect.

For further information, please call the Sea-Tac Noise Abatement Office at 433-5393.



SOUND INFORMATION

THE NOISE MEDIATION PROJECT

INTRODUCTION

On March 31, 1990, after a year and a half of meetings, the Sea-Tac Noise Mediation Committee (Mediation Committee) reached agreement on a package of noise reduction measures for Seattle-Tacoma International Airport. The package contained both long-term and short-term measures that are expected to reduce aircraft noise by at least 50 percent by the year 2001. This noise reduction will be in aggregate noise and will occur primarily as a result of the Sea-Tac Noise Budget and Nighttime Limitations Programs. As stated in Port of Seattle Commission Resolution No. 3016, the noise reduction package will provide substantial noise mitigation and abatement without limiting capacity or the economic benefits that result from the successful operation of the airport.

The elements of the Mediation Agreement include a noise reduction program called a "Noise Budget"; a phase out of stage 2 aircraft at night; a doubling of the rate of home insulation, plus other improvements to the noise insulation program; improvements to procedures directing and monitoring aircraft using noise abatement routes; ground noise controls; state of the art flight track monitoring and; a committee to monitor implementation of the Mediation Agreement.

The "package" concept, which introduced a number of actions together, was meant as a means to reduce noise in a variety of ways and gave those involved in mediation the opportunity for trade-offs on programs that were especially significant to them. For that reason, a decision to implement any one program or action was contingent on acceptance of the entire package. The various elements of the package were estimated to cost approximately \$29 million, of which nearly \$26 million would be used for noise remedy modifications, primarily to the sound insulation program. The Port stated its intention to apply for FAA funding for these improvements.

BACKGROUND

The idea for using mediation to develop noise programs for Sea-Tac came from a citizen committee called the Joint Committee on Aircraft Overflights (Joint Committee). The Joint Committee grappled with the issue of aircraft noise and flight patterns. Its members decided that the problem was so complex and involved so many neighborhoods in the greater Seattle-Tacoma metropolitan area, that a new and innovative process was needed that would be supported by many different areas. The Joint Committee went on to recommend the process itself - environmental mediation. This is a consensus-based approach that had been used before in the Pacific Northwest (but not at an airport), to resolve conflicts over environmental issues.

The Port of Seattle Commission, realizing that noise was fast becoming an issue that could limit Sea-Tac's capacity to meet growing air travel demand, accepted the recommendation by the Joint Committee on Aircraft Overflights and formally adopted it on September 8, 1987 in Port Commission Resolution 3016.

The Convening Process. The Noise Mediation Project began with a convening process. To initiate and carry out this work, the Joint Committee selected professional mediators with experience in environmental mediation. Their job was to ascertain if mediation was likely to be a productive approach to the problem of aircraft noise. They were to identify and then interview key members of the various parties required for such an effort. With the help of Port staff and members of the Joint Committee, the mediators contacted a number of individuals within the airlines, chambers of commerce, FAA, and numerous citizen groups. They listened to their concerns about aircraft noise, explained what a mediation process would entail and asked if the approach sounded worthwhile. Finally they questioned interviewees about their willingness to be part of such an endeavor.

At the end of the convening process, the mediators reported to the Port Commission that a number of issues had been identified as concerns to the people interviewed. They reported that those interviewed were willing to give mediation a chance if these concerns could be addressed.

NEGOTIATING PHASE.

The Mediation Committee. On November 14, 1988, the Mediation Committee met for the first time. The parties at the table included the Air Line Pilots Association, the Airlines, Airport Users (representatives from the area's chambers of commerce), FAA, Port of Seattle, and impacted communities. In all, there were twenty people who sat at the negotiating table representing the six different parties called "caucuses". Each caucus was to come to the table speaking with one voice. For some caucuses, such as the Airline caucus and the community caucus, this was very difficult due to the wide divergence of opinion on some issues. The Airline caucus included the Air Transport Association, United Airlines, Alaska Airlines, Federal Express and Horizon Airlines.

Community Caucus. The community caucus was the largest and most diverse of all the caucuses. It was the only one that was further subdivided into subcaucuses, with five different ones identified by geographic area. Each subcaucus came prepared to the table by meeting independently to negotiate its own procedures and positions among its members. Because the majority of caucuses and subcaucuses themselves adhered to the rule of consensus, this structure enabled individuals to have an influence on the outcome. In fact, the ground rules, as described later in this document, refer to these active caucus participants as "negotiators". This was an im-

portant feature for members of the community caucus, approximately seventy-five (75) active participants. Many of these individuals were also active in their community groups and councils and were charged with keeping these groups informed.

Formation of the community caucus and subcaucuses was essentially a system of self-selection, as there was no one entity that represented all noise-impacted citizens. There were, however, many individuals that had been active over the years in efforts to reduce aircraft noise. During the convening phase, a number of these individuals were contacted and became the first members of the community caucus. As more publicity was available, additional members were funnelled into the process. The Port of Seattle funded the hiring of a team of community coordination professionals to assist the diverse groups in working productively together. This team of individuals worked with the citizens, facilitating meetings and coordinating the flow of information.

Special Features. The Noise Mediation Project had some special features that were recommended by the Joint Committee. The process was completely voluntary, not a result of legal action. Community leaders worked directly with decision-making representatives of the agencies and businesses and all decisions were to be reached by consensus. Thus, no one party could control the outcome. This was further ensured by the committee's right to select its own consultants: mediators, community coordination professionals and technical consultants for noise, airspace and legal aviation issues. The Port of Seattle funded the project at nearly \$1 million.

Public Agency Participation. At the beginning of mediation, the Mediation Committee invited a number of public agencies and officials to attend mediation meetings so they would understand the committee's work. The cities of Seattle and Mercer Island designated Mediation Committee members as official liaisons and the cities of Des Moines and Normandy Park both had councilmen who were on the Mediation Committee itself. In addition, one state representative was on the Committee. In general, however, the flow of information to public agencies and officials was handled in two ways: through formal briefings and through mailings of information materials or telephone calls. Local and state officials and agencies were on the mailing list, received meeting notices and were invited periodically to receive briefings. The committee designated the mediators as the primary sources of information for public agencies and officials.

Subcommittees. The Mediation Committee made wide use of subcommittees to perform special tasks, such as selecting a mediation team, a community coordination team and a team of technical consultants. Subcommittees were used in developing ground rules, schedules, educational presentations and technical options. They were used to review the work of the various consultant teams and in designing and implementing a public information program. All subcommittees included a cross section of membership from the various caucuses and were facilitated by a member of the Mediation

Committee. The subcommittees included those for selection of the mediation team, the community coordination team and the technical analysis team. They also included the Technical Services Subcommittee, the Options Subcommittee, the Ground Rules Subcommittee, and the Public Information Subcommittee.

As with the work of the Mediation Committee itself, all subcommittees worked on consensus. The subcommittees were authorized by the Mediation Committee to develop recommendations and to then bring these recommendations back to the Mediation Committee for action.

Ground Rules. The first agreement that the Mediation Committee made was on a set of ground rules. These ground rules included a statement of the purpose of mediation. The purpose of the mediation process was twofold and was stated as follows:

1. The purpose of the mediation process is to reach a consensus on programs which will mitigate and/or reduce noise and which will be implemented for Seattle-Tacoma International Airport. Any noise impact caused by operation of aircraft into and out of Seattle-Tacoma International Airport may be part of the negotiations.
2. It is intended that the consensus will include a commitment by each caucus to carry forward and fully support the consensus programs through necessary administrative and other processes of implementation.

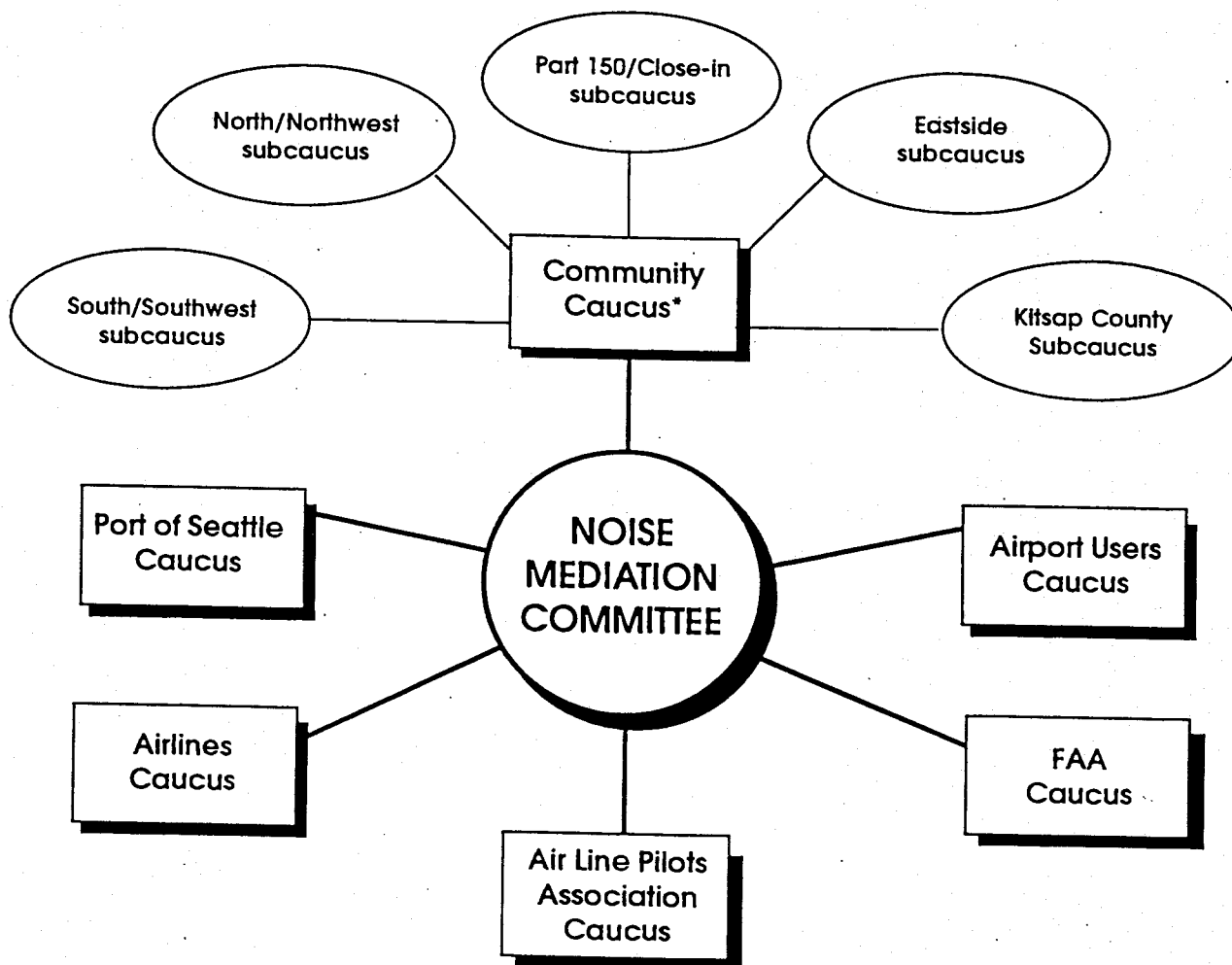
The ground rules also included rules for group decision making, personal behavior and committee and subcommittee procedures. The task of developing these ground rules went to a subcommittee called the Ground Rules Subcommittee.

Education Program. Prior to beginning the actual negotiations on technical matters, the Mediation Committee formed the Technical Services Subcommittee to develop a number of educational presentations that would allow all members of the process to obtain a baseline of information from which to deliberate. The subcommittee decided on topics and on speakers. Speakers were selected to present a range of views.

Identifying Interests. Before getting started on the negotiations over noise programs, the mediators spent time with the Mediation Committee asking each party to identify its "interests". The mediators explained that the participants should avoid locking themselves into "positions," which were described as inflexible and incompatible with the give-and-take nature of environmental mediation.

An "interest" was described as a need that was so important to the party that in order for it to agree to a proposal, it must be convinced that its interest would be met in some important way. The party would refrain from

Table 1



* A professional community coordinator was selected by citizens to assist the subcaucuses in working effectively together.

saying "how" the interest could be met. Presumably, agreement could be reached on any number of issues as long as the vital interest of each group could be accommodated. It was for this reason that the concept of a package became so important. The committee decided to pursue a package of actions that would give the optimum noise reduction, yet would be able to include enough different items that everyone's vital interest could be met.

IDENTIFYING TECHNICAL OPTIONS

One of the educational presentations that the Mediation Committee received was an overview on the many noise abatement options that were available and in practice throughout the United States and the world. The committee used information from this presentation to brainstorm all the noise abatement actions that should be examined for Sea-Tac. The Options Subcommittee was then formed to study the technical options and make recommendations to the full Mediation Committee. The subcommittee categorized the options and developed a process for hiring a technical consulting team to do the detailed analysis of the preferred options.

From a list of seventy-three possibilities, the Subcommittee with the assistance of its technical consulting team, narrowed the options by first identifying what problems were being experienced by residents around Sea-Tac and then listing options under those problems. Many of the options were found to be redundant; others impractical. For those options that were seen as good candidates, a second round of discussions occurred based on data and explanations of the value of the option from the consultants.

When the options were finally narrowed to final candidates, the Options Subcommittee divided into working groups to tackle in detail how each option should be described and proposed. This final round of work went back to the full Mediation Committee in the form of a draft package of noise abatement actions for consideration. The Mediation Committee then negotiated over this package, agreeing to its final form on March 31, 1990 after nearly a year and a half of meetings.

The contents of the agreement include:

A "noise budget" or allocation of noise for the Airport and airlines that will decrease over time. The budget will limit and control aircraft noise and accelerate use of the new (quieter) Stage III airplanes. The goal is for Sea-Tac's fleet to be nearly 100-percent Stage III by the year 2001. This measure in conjunction with the other elements of the agreement will reduce noise 50% by 2001.

Nighttime restrictions on the use of Stage II aircraft. For the first two years of the program, no new Stage II flights may be introduced between midnight and 6 a.m. Only existing Stage II flights that have "grandfathered" rights may operate during these hours. Effective October 1, 1992, no Stage II aircraft may operate between midnight and 6 a.m. Over the next three years the restricted hours expand until they encompass 10 p.m. to 7 a.m. on October 1, 1995.

Doubling of the rate of the Port's existing sound insulation program and changing the "cost-share" insulation area to 100% Port paid.

Control of aircraft ground noise by restricting use of engine power for backing aircraft away from gates, improving run-up regulations, investigating the

reduction of reverse thrusts (used in landings), limiting use of auxiliary power units, and erecting a "hush" facility if a maintenance base is built at Sea-Tac.

Implementation of a state-of-the-art flight track monitoring system to better monitor compliance with noise abatement flight track procedures.

Improvement of flight procedures through the Elliott Bay corridor and over Puget Sound to minimize jet noise to adjacent residential areas, with special attention to nighttime flights.

Control of noise from "single event" aircraft operations that are particularly annoying by improving the Port's complaint hotline and monitoring systems.

Establishment of a Noise Abatement Committee to ensure implementation of the agreement.

The committee could not reach agreement on changes to flight patterns. Special language was included in the agreement stating that this inability of the committee did not in any way negate the agreed upon actions.

PUBLIC INFORMATION

Although the public was actively involved in mediation through the activities of the community caucus, the Public Information Subcommittee was formed to develop a strategy to inform the community at large. A program was developed that included editorial boards, press releases, articles for newspapers and newsletters, display boards, speakers bureau, special informational bulletins and a series of eight (8) workshops. The mailing list for informational newsletters included approximately 41,000 names.

The workshops were a very important element of the program. They were held in the community subcaucus areas in community facilities throughout the Puget Sound area from February 26 through March 8, 1990. This allowed input from the general public prior to the scheduled conclusion of the committee's work. Specifically, these workshops provided detailed information on the preferred options and solicited comments from the public. They were advertised in the major and community newspapers.

IMPLEMENTATION

The Mediation Agreement contained only two implementation dates: October 1, 1990 for the Nighttime Limitations Program and January 1, 1991 for the Sea-Tac Noise Budget. It was understood that the Port of Seattle and the airlines would need to work out a number of the final details of these two programs. The Port began discussions to finalize these two programs on May 8, 1990 when it invited airline representatives to a comprehensive briefing. Over the next eight months, the Port spoke by telephone and corresponded with each airline providing draft documents for review

and comment. All comments from the airlines were taken into consideration and, if in accordance with the Mediation Agreement, accommodated as much as possible. All major concerns were settled prior to making the Noise Budget operational.

SEA-TAC NOISE ABATEMENT COMMITTEE

The remaining programs were implemented according to a schedule developed by the Port staff in cooperation with the Sea-Tac Noise Abatement Committee. This committee was mandated by the Mediation Agreement itself to ensure that implementation would occur in a timely fashion and in accordance with the agreement. Its membership was drawn from the original Mediation Committee.



SOUND INFORMATION

SEATTLE-TACOMA INTERNATIONAL AIRPORT
SEA-TAC NOISE INFORMATION LINE
CALL: 433-5393 or TOLL FREE: 1-800-826-1147

When defining the impact of aircraft noise on citizens, no one is more important than the citizen receiving the noise. With this in mind, the Port of Seattle has established the airport noise information line as an important part of Seattle-Tacoma International Airport's comprehensive noise abatement program. The information line serves as:

Sounding Board - Area citizens need a way to comment on aircraft noise and how it affects them. As a sounding board, the information line provides citizens with the opportunity to express views, voice concerns and relay opinions about aircraft noise.

Information Resource for Citizens - The information line serves as a valuable resource for citizens inquiring about the many aspects of Sea-Tac's noise abatement programs.

Information Resource for the Port - The information line monitors public sentiment toward aircraft noise, and data collected from noise information calls are used to monitor the Port's noise programs. Information from callers also supplements long range planning studies such as it did in the Noise Mediation Project.

Link to the Community - The information line serves as a vital communications link between neighborhood residents and Port Commissioners, Port management and staff, FAA air traffic control officials and air carriers using the national airspace system. This link provides all the parties involved a sense of what is happening in the community.

Integration with Flight Track Monitoring - With our computer systems we are able to identify and display a variety of information including flight tracks of aircraft to monitor our programs and respond to individual complaints. You can request an evaluation of particularly annoying noise occurrences by leaving your name, address, and phone number. We use the information you provide to analyze the noise event(s) in order to determine or isolate the source. Once the source is identified we can discuss any potential mitigation action that may be taken by the Port, the FAA or the airlines.

SEA-TAC AIRCRAFT NOISE INFORMATION LINE
PAGE TWO

Perhaps even more important to you is what the Noise Abatement Office actually does when you call the hotline. First of all, your call is documented and entered into a data base which allows us to identify and summarize specific trends. In addition to forwarding a copy of **every** complaint to FAA air traffic officials, we distribute these summaries to the public, the Port Commission, Port executives, and others.

It is just as important for you to understand what the noise abatement staff is **not** able to do. The Port of Seattle cannot take immediate action to reduce noise as a result of a phone call to the airport noise information line. For example, the Port staff cannot make a modification to a flight track as the result of aircraft noise complaints. Nor do we judge the severity of a noise problem by the number of calls we get from any particular neighborhood. We are interested in hearing from anyone who feels he or she has a noise problem because you can help us understand what you are experiencing. That information assists us in monitoring our noise abatement programs. Also, in the past when the Port has developed new noise abatement programs, we have evaluated complaint information to assist in program development.



SOUND INFORMATION

PORT OF SEATTLE

SEATTLE-TACOMA INTERNATIONAL AIRPORT

FLIGHT TRACK PLOT SAMPLE - TURBOJETS

Flight track plots are a graphic illustration of the ground paths of aircraft traffic, as observed from above, for a specific time period. The flight track plots represent both arrivals and departures of jet aircraft to and from Sea-Tac Airport, according to the direction of traffic flow (north or south). These plots represent daytime flight activity from 6:00 a.m. to 10:00 p.m.

The flight track sample gives the date and time range, the type of operation (arrival or departure), and the traffic flow direction.

The data used in creating the flight tracks is generated by the air traffic control system operated by the Federal Aviation Administration. This system is called ARTS, or Automated Radar Terminal System.

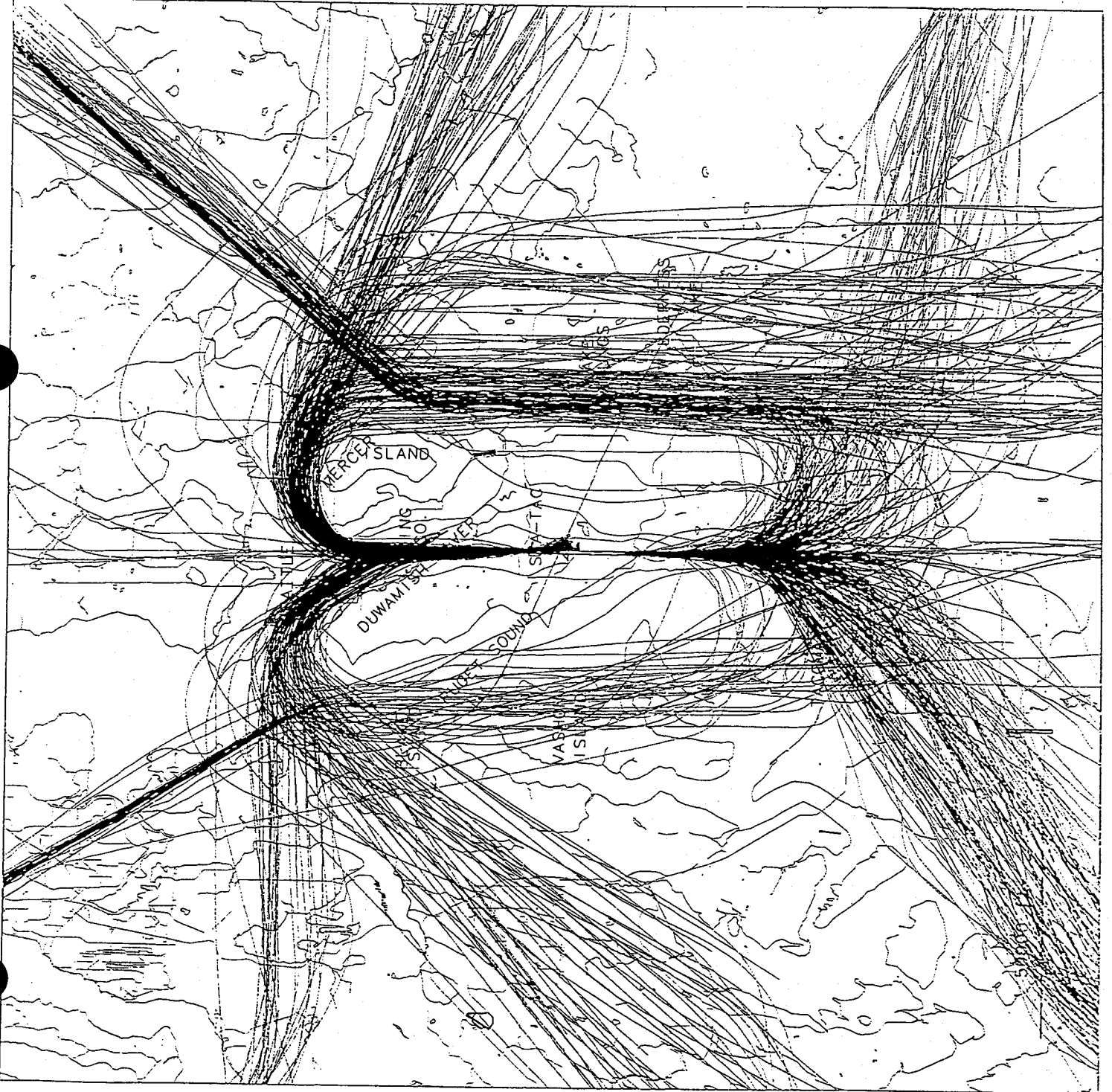
Of great significance is the fact that aircraft flying identical procedures do not necessarily fly along the same ground track. Unlike cars or trains, aircraft in flight cannot be physically restrained to a narrow corridor such as a roadway or a railroad track. Aircraft operate in three dimensional space and are subject to variations in pilot technique, air traffic control, weather and aircraft performance. These variations will cause the aircraft to fly within a corridor, which becomes broader as the distance from the airport is increased. Therefore, even though several aircraft may be assigned the same route, their track and flight profiles along that route will not be identical.



Sea-Tac Jet Aircraft Flight Track Patterns

NORTH FLOW
May 5, 1996
6am-10pm

Green = Departures
Red = Arrivals



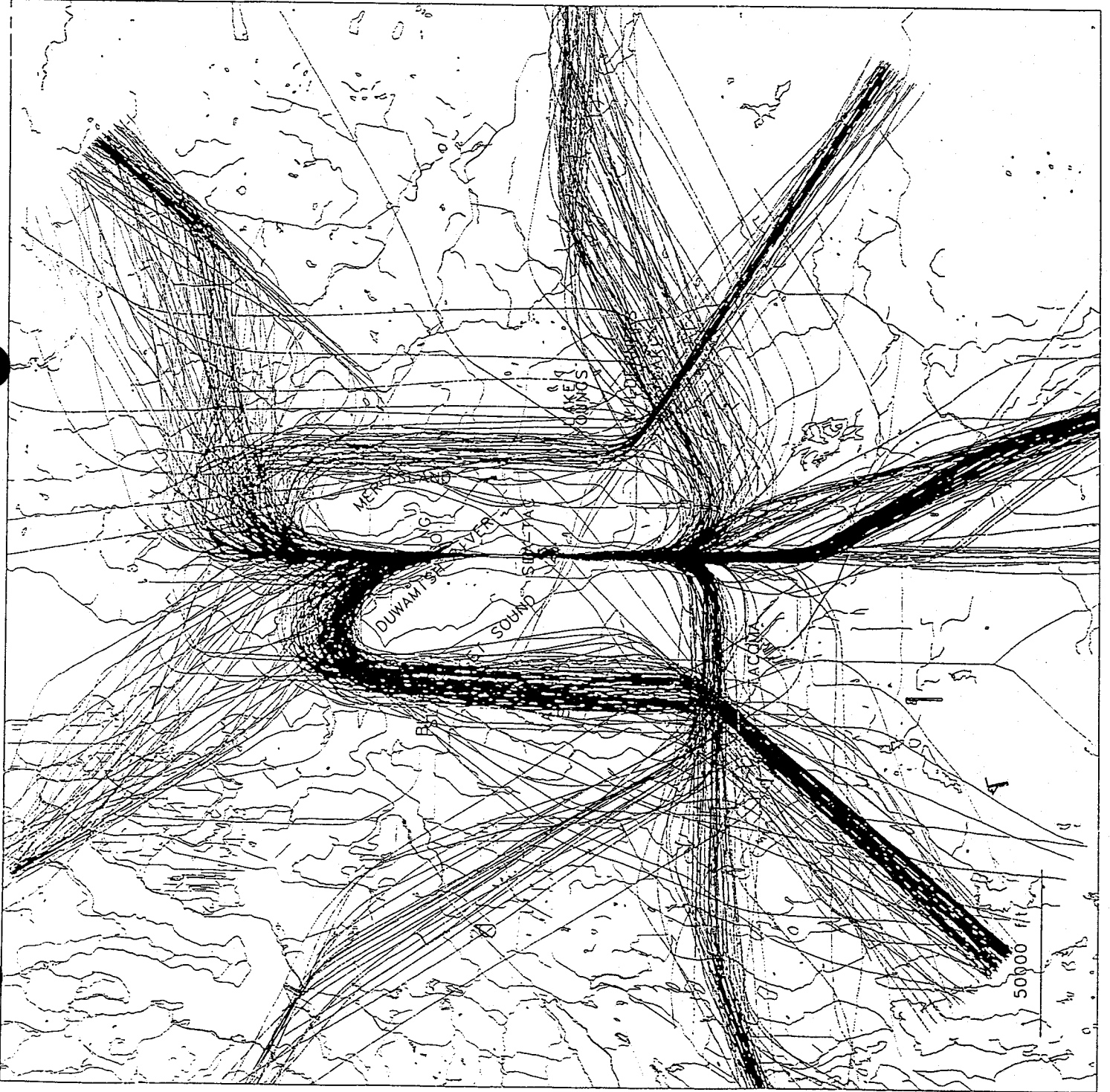


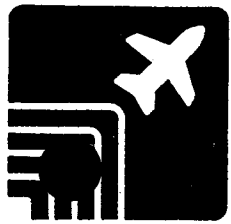
Port of Seattle

Sea-Tac Jet Aircraft Flight Track Patterns

SOUTH FLOW
May 3, 1996
6am-10pm

Green = Departures
Red = Arrivals





SOUND INFORMATION

PORT OF SEATTLE

SEATTLE-TACOMA INTERNATIONAL AIRPORT

FLIGHT TRACK PLOT SAMPLE - TURBOJETS

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SOUND INFORMATION

Ground Noise Control Programs

What is Ground Noise?

There are many sources of ground noise at an airport such as Sea-Tac and it is difficult to pinpoint the source of an individual community's concern due to these varying sources. Sources of aircraft ground noise can include takeoff roll, taxi, idle, thrust reversal, powerbacks, maintenance run-ups, and the use of ground power units. Adding to the difficulty of identifying sources of ground noise is the effect meteorological conditions have on the propagation of noise over distances. You may notice that ground noise is louder on days when the skies are overcast or when certain wind conditions exist.

There are currently programs in place at Sea-Tac to address the issue of ground noise. These programs focus on minimizing jet engine maintenance run-ups during the nighttime hours and eliminating the use of reverse thrust for aircraft departing a gate. These programs are designed to reduce the noise impact on surrounding communities by addressing the peak sound levels and the duration of the noise events. Engine maintenance run-ups and the use of reverse thrust for aircraft departing a gate are the two noise sources that are perceived as being the most annoying to surrounding communities and are therefore the focus of the ground noise control programs.

Engine Maintenance Run-Ups

When certain types of maintenance activities are performed on an engine, the operator of an aircraft must test the engine prior to the next flight. This testing of the engine is known as a maintenance run-up and consists of power being applied to the engines while the aircraft remains stationary. Depending on the scheduled departure time of that aircraft, run-ups can occur at anytime day or night.

In an effort to minimize noise impacts to surrounding communities, areas on the airfield were established for run-ups. Two sites were chosen at each the north and south ends of the airfield to accommodate the operation of the airfield in both directions. When aircraft depart to the south, an aircraft conducting a run-up will be directed to an area located at the south end of the airfield. The aircraft is turned into the wind (e.g., facing south) directing the jet blast back across the airfield rather than towards an immediately adjacent community.

The Federal Aviation Administration has recognized a time period during the night, from 10:00 p.m. to 7:00 a.m., when people are more sensitive to airport noise. This time period also coincides with the hours established by the Port for restrictions on engine run-ups. Aircraft operators conducting engine run-ups during these hours must have permission from the Airport Operations Supervisor. If absolutely necessary, run-ups not exceeding two minutes duration can be authorized. The only exception to the two minute rule is when an aircraft is scheduled to depart between the hours of 7:00 a.m. and 8:30 a.m.. For those instances, maintenance run-ups may be conducted as necessary between the hours of 6:00 a.m. and 7:00 a.m. with the permission of the Airport Operations Supervisor.

Because of the operating nature of the airlines, we do not anticipate the elimination of engine maintenance run-ups at night. The Noise Abatement Office will continue to monitor developing technologies, as well as work with the aircraft operators to further reduce the ground noise created by engine maintenance run-ups.

Powerbacks

Certain types of aircraft have the capability to use reverse thrust to back out from their gate parking positions. This maneuver is known as a powerback, and requires the aircraft to attain a high level of power prior to movement. This procedure is most often used by aircraft with tail mounted engines, such as the Boeing 727 and the McDonnell Douglas MD-80 aircraft. The noise generated from the use of this procedure can have a significant effect on areas close-in to the airport boundary. In 1991, the Port of Seattle prohibited the use of powerbacks by aircraft operating at Sea-Tac. Aircraft are now pushed back from their parking positions by ground vehicles.

What About Other Ground Noise Sources?

As mentioned previously, other sources of ground noise at an airport can include taxiing aircraft, the use of reverse thrust to slow the aircraft after landing, and the use of auxiliary power units when servicing an aircraft at the gate. The Port of Seattle is investigating ways to more effectively monitor and measure ground noise sources at the Airport in an effort to develop mitigation programs for these sources.

One of our best sources to use in documenting ground noise are the calls we receive from you and your neighbors. We would like to encourage you to continue to call our information line at 433-5393 to let us know when you feel ground noise is excessive. Your call helps us keep in touch with public opinion, as well as enforce our programs, gauge our performance, and plan for future noise reduction programs.



SOUND INFORMATION

NOISE ABATEMENT PROCEDURES PROGRAM

WHAT ARE NOISE ABATEMENT PROCEDURES?

Noise Abatement Procedures are specific headings and altitudes for airplanes to fly in order to minimize noise impacts. Over the years, Noise Abatement Procedures were established by the Federal Aviation Administration (FAA) in cooperation with the Port and local communities. These procedures were designed to minimize jet overflights of residential neighborhoods by taking advantage of existing geographical and compatible land use conditions where possible. The Duwamish Industrial Area, Elliott Bay and Puget Sound provide some opportunities for aircraft to overfly non-residential areas to the north of Sea-Tac Airport. The attached maps depict the Noise Abatement Procedures that are used to the maximum extent possible, air traffic conditions permitting. These maps are not intended to show actual flight tracks, only the corridors that are monitored for arrival and departure noise abatement procedures. These are not all the flight corridors, only those specifically related to noise.

North Flow

The map entitled "North Flow" shows the corridors used when jet aircraft depart Sea-Tac to the north. The *Initial Departure Procedure*, shown in yellow, is intended to confine departing aircraft to the narrowest flight path possible. During the busier daytime hours, currently 6:00 a.m. to 10:00 p.m., aircraft will proceed from the Initial Departure Corridor into the *Duwamish/Elliott*

Bay Corridor. This is the solid and hashed red colored area, from which aircraft may turn east or west. If traffic conditions allow when turning west, the airplanes are directed over Elliott Bay. Before starting their turn to the east, jets first fly eight nautical miles (nm) north and reach an altitude of 4,000 feet.

During the less busy nighttime hours, currently 10:00 p.m. to 6:00 a.m., jet aircraft are directed over the solid red colored area of the *Duwamish/Elliott Bay Corridor* and proceed west. Once out of Elliott Bay, the aircraft are turned north or south in the green colored areas which are designated as *Puget Sound Departure*. Jets remain over Puget Sound until reaching a specific altitude or distance from the Airport before turning east or west over the shoreline.

When flying north over the Sound, the aircraft must reach an altitude of 10,000 feet or a point 20 nm from the Airport before turning east. When turning west, aircraft must reach the 20 nm point at or above 10,000 feet before starting their turn.

When heading south, the aircraft must remain west of the shoreline at or above an altitude of 10,000 feet until crossing the SEA 220 degree radial before starting a turn to the east. (This area is depicted by the straight edge portions of the dark green section on the map.)



SOUND INFORMATION

South Flow

The other map, "South Flow", shows corridors used by aircraft arriving from the north over the city of Seattle and departing to the south. The large orange colored area is *Puget Sound Arrival*. The objective of this procedure is to have jet aircraft fly over or to the north of Elliott Bay. The yellow colored area south of the Airport is *Initial Departure* which is intended to confine departing jets to the narrowest flight path possible. Aircraft remain in this corridor until they are 5 nm from the Airport at an altitude of 3,000 feet. Once out of the initial departure corridor they can either continue south or start a turn to the east or west.

WHY DO AIRPLANES FLY OUT OF THE CORRIDORS?

There are many reasons, sometimes beyond the airline's control, why a jet may fly out of the noise abatement corridors. These include traffic conflicts, weather, air traffic control directives, safety considerations, aircraft performance and pilot technique.

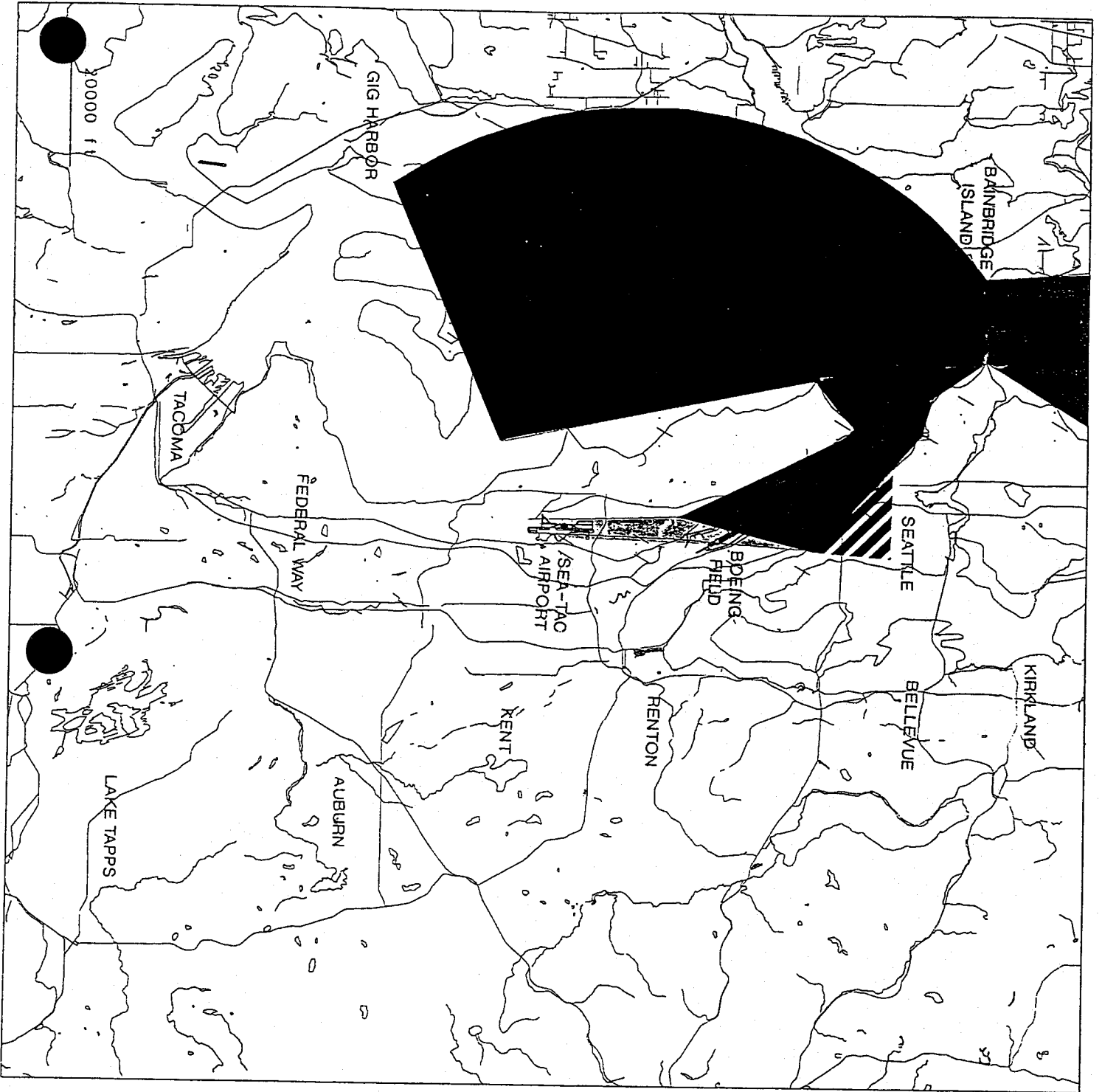
HOW ARE PROCEDURES MONITORED?

Although the Federal Aviation Administration has sole authority over aircraft in flight, the Port of Seattle, as operator of Sea-Tac Airport, has taken the lead responsibility for monitoring and reporting jet air traffic activities in regard to noise abatement. Data from the FAA's Automated Radar Terminal System (ARTS) is used to monitor aircraft performance while operating within established noise abatement corridors. Every month, a randomly selected

sample of flight events are evaluated for each noise abatement procedure. The results pinpoint how successful air traffic controllers and pilots are at keeping flights within the noise abatement corridors.

The results are published in the form of a quarterly report and are shared with the airlines, the FAA, and Sea-Tac's Noise Advisory Committee (SNAC). This program's success is dependent on cooperative efforts between these groups. A quarterly newsletter is also distributed to local citizens which includes results from this and other noise abatement programs.

If you would like to be added to our mailing list, or need further information on Sea-Tac's noise abatement programs, please call (206) 433-5393 or Toll Free (800) 826-1147.







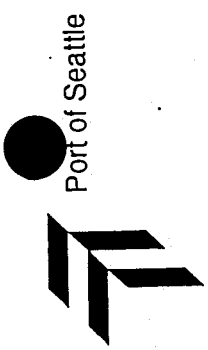
Port of Seattle

Seattle - Tacoma
International Airport

Noise Abatement Procedures

NORTH FLOW

-  INITIAL DEPARTURE
-  DUWAMISH / ELLIOTT BAY DEPARTURE - NIGHT
-  DUWAMISH / ELLIOTT BAY DEPARTURE - DAY
-  PUGET SOUND DEPARTURE - NIGHT





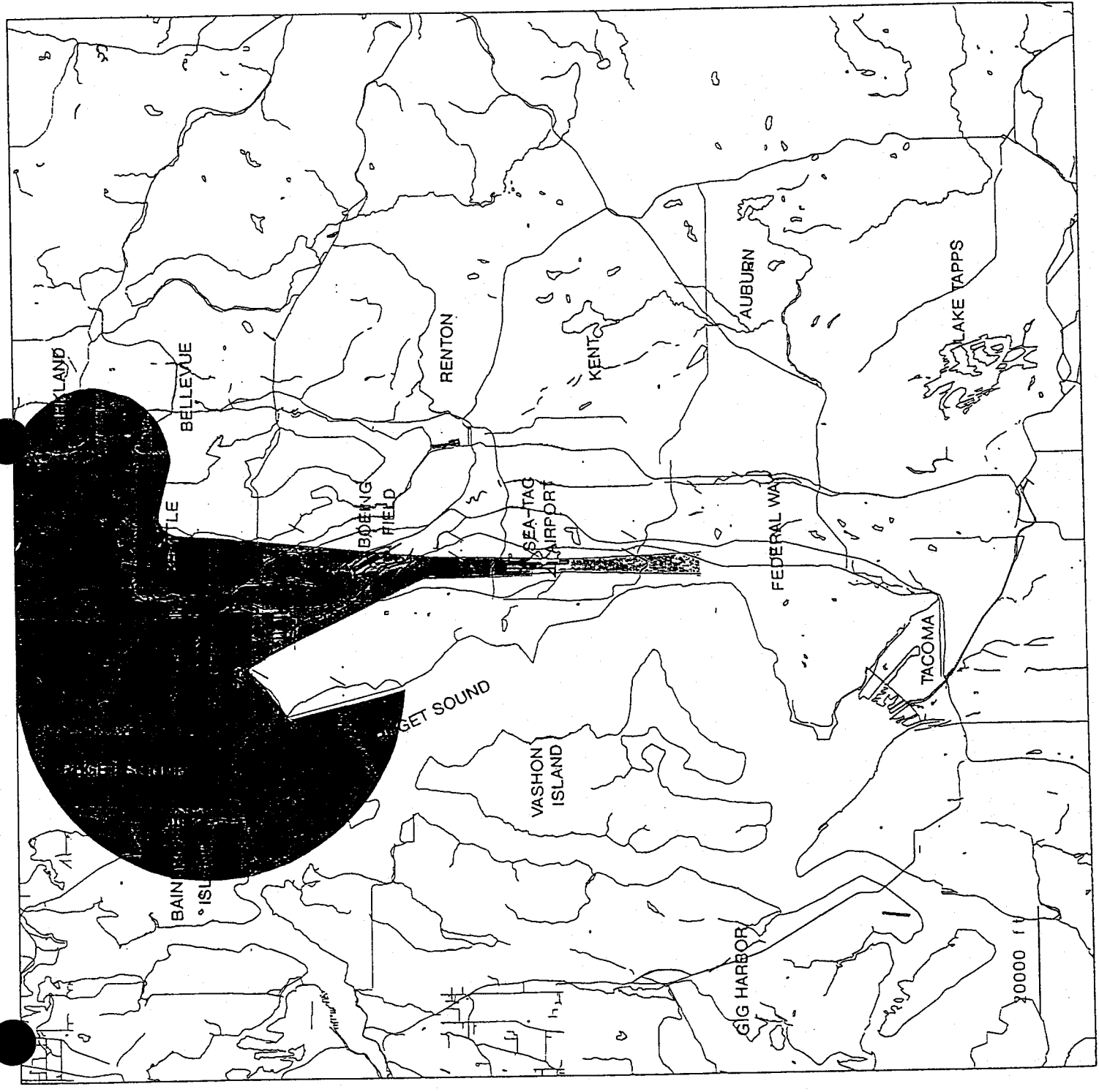
Port of Seattle

Seattle - Tacoma International Airport

Noise Abatement Procedures

SOUTH FLOW

-  INITIAL DEPARTURE
-  PUGET SOUND ARRIVAL



**Appendix Twenty-Six. Community Sound Attenuation
Requirements**

City of SeaTac

13.23.010

Chapter 13.23

SOUND TRANSMISSION CONTROL

Sections:

13.23.010 Purpose.

13.23.020 Scope.

13.23.030 Application to existing buildings.

13.23.040 Definitions.

13.23.050 Design requirements.

13.23.060 SeaTac Noise Program Areas.

13.23.070 Air leakage for all buildings.

13.23.080 Building requirements for a noise level reduction of 25 dB.

13.23.090 Building requirements for a noise level reduction of 30 dB.

13.23.100 Building requirements for a noise level reduction of 35dB.

13.23.010 Purpose.

The purpose of this chapter is to safeguard life, health, property and public welfare by establishing minimum requirements regulating the design, construction, and/or setting on site of buildings for human occupancy in the vicinity of Seattle-Tacoma International Airport as identified on the attached map referenced in the April 24, 1985 Federal Register, Volume 50, No. 79. These sections are not intended to abridge any safety or health requirements required under any other applicable codes or ordinances. (Ord. 93-1024 § 1)

13.23.020 Scope.

The provisions of this chapter shall apply to all buildings or structures constructed or placed in use for human occupancy on sites within the vicinity of Seattle-Tacoma International Airport which have been included within the Port of Seattle Noise Remedy Program. This chapter is intended to supplement the provisions of the Uniform Mechanical Code, the adopted Energy Code, and the remainder of the Uniform Building Code. In the case of conflict between this chapter and any other applicable codes the more restrictive requirements shall apply. (Ord. 93-1024 § 1)

13.23.030 Application to existing buildings.

A. Additions may be made to existing buildings or structures without making the entire building or structure comply with all the requirements of this chapter for new construction. Additions shall be made to comply in the areas being added to the extent that it is deemed practical and effective by the Building Official in meeting the intent of this chapter.

B. Any change of use in the occupancy or use of a building previously unapproved for human occupancy to human occupancy use or of one previously unused for sleeping purposes to sleeping use shall not be permitted unless the building, structure or portion of the building complies with this chapter.

C. The plans and specifications shall show in sufficient detail all pertinent data and features of the building and the equipment and systems, as herein governed, including, but not limited to: exterior envelope component materials; STC ratings of applicable component assemblies; R-values of applicable insulation materials; size and type of apparatus and equipment; equipment and system controls and other pertinent data to indicate conformance with the requirements herein. (Ord. 93-1024 § 1)

13.23.040 Definitions.

A. "Noise reduction coefficient (NRC)" is the arithmetic average of the sound absorption coefficients of a material at 250, 500, 1000, and 2000 Hz.

B. "Sound transmission class (STC)" is a single number rating for describing sound transmission loss of a wall, roof, floor, window, door, partition or other individual building components or assemblies. (Ord. 93-1024 § 1)

13.23.050 Design requirements.

The criteria of these sections establish the minimum requirements for acoustic design of the exterior envelope of buildings and for HVAC systems and its parts. These requirements shall apply to all buildings for human occupancy within the SeaTac Noise Program Areas. (Ord. 93-1024 § 1)

13.23.080

13.23.060 SeaTac Noise Program Areas.

Noise determination construction requirements detailed in this sound transmission building code shall be applied to new construction and additions of all structures, except for not normally inhabited portions of warehouses, storage buildings and similar structures as determined by the Building Official, within the designated program areas of the Port of Seattle's Noise Remedy Program (see attached map). The applicable program areas are the Neighborhood Reinforcement Area and the Standard Insulation Area. Specific construction requirements for these two areas are:

A. Neighborhood Reinforcement Area.

1. Bedrooms must comply with Section 13.23.110 which is designed to achieve a noise reduction level of 35 dB.

2. All other living and working areas must comply with Section 13.23.100 which is designed to achieve a noise reduction level of 30 dB.

B. Standard Insulation Area.

1. Bedrooms must comply with Section 13.23.100 which is designed to achieve a noise reduction of 30 dB.

2. All other living and working areas must comply with Section 13.23.090 which is designed to achieve a noise reduction level of 25 dB. (Ord. 93-1024 § 1)

13.23.070 Air leakage for all buildings.

A. The requirements of this section shall apply to the design of the exterior envelope of all buildings in the SeaTac Noise Program Area designed for human occupancy. The requirements of this section are not applicable to the separation of interior spaces from each other.

B. The following locations shall be sealed, caulked, gasketed, or weatherstripped to limit or eliminate air leakage:

1. Exterior joints around window and door frames between the window or door frame and the framing;

2. Openings between walls and foundations;

3. Between the wall sole plate and the rough flooring;

4. Openings at penetrations of utility services through walls, floor, and roofs;

5. Between wall panels at corners;

6. All other such openings in the building envelope.

C. Through the wall, floor, or roof/ceiling penetrations not specifically addressed in these sections shall be designed to limit sound transmission and shall have the same average laboratory sound transmission classification as required for doors. (Ord. 93-1024 § 1)

13.23.080 Building requirements for a noise level reduction of 25 dB.

A. Compliance. Compliance with this section shall be deemed to meet requirements for a minimum noise level reduction (NLR) of 25 decibels.

B. Exterior Walls.

1. Exterior walls, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC-30; or

2. Masonry walls having a weight of at least 25 pounds per square foot do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered.

3. Stud walls shall be at least 4 inches in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish.

a. Interior surface of the exterior walls shall be gypsum board or plaster at least 1/2 inch thick, installed on the studs.

b. Continuous composition board, plywood or gypsum board sheathing at least one-half (1/2) inch thick shall cover the exterior side of the wall studs.

c. Sheathing panels shall be covered on the exterior with overlapping building paper.

d. Insulation material at least R-11 shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber or mineral wool.

C. Exterior Windows.

1. Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-28; or

13.23.090

2. Glass shall be at least 3/16" thick.

3. All operable windows shall be weatherstripped and airtight when closed so as to conform to an air infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T.

4. Glass shall be sealed in an airtight manner with a non-hardening sealant or a soft elastomer gasket or gasket tape.

5. The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal specifications: TT-S-00227, TT-S-00230 or TT-S-00153.

D. Exterior Doors.

1. Doors other than as described in this section shall have a laboratory sound transmission class rating of at least STC-26; or

2. All exterior side-hinged doors shall be solid-core wood or insulated hollow metal at least 1-3/4" thick and shall be fully weatherstripped;

3. Exterior sliding doors shall be weatherstripped with an efficient airtight gasket system with performance as specified in Section 3534(c). The glass in the sliding doors shall be at least 3/16" thick;

4. Glass, over two square feet in area, in doors shall be sealed in an airtight non-hardening sealant or in a soft elastomer gasket or glazing tape;

5. The perimeter of door frames shall be sealed airtight to the exterior wall construction as described in Section 13.23.090C(4).

E. Roofs.

1. Combined roof and ceiling construction other than described in this paragraph and in paragraph F of Section 13.23.090 shall have a laboratory sound transmission class rating of at least STC-39; or

2. With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of 1/2" composition board, plywood or gypsum board sheathing topped by roofing as required;

3. Open beam roof construction shall follow the energy insulation standard method for batt insulation;

4. Skylights shall conform to the window standard in paragraph C of Section 13.23.090.

F. Ceilings.

1. Gypsum board or plaster ceilings at least 1/2 inch thick shall be provided where required by paragraph E(2) of Section 13.23.090, above. Ceilings shall be substantially airtight with a minimum of penetrations.

2. Glass fiber, cellulose or mineral wool insulation at least R-38 shall be provided above the ceiling between joists.

G. Ventilation.

1. A ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors or other openings to the exterior. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with 1 inch thick coated glass fiber, and shall be at least 5 feet long with one 90 degree bend.

2. Gravity vent openings in attics shall be as close to code minimum in number and size, as practical.

3. Bathroom, laundry and similar exhaust ducts connecting the interior space to the outdoors, shall contain at least a 5-foot length of internal sound-absorbing duct lining. Exhaust ducts less than 5 feet in length shall be fully lined and shall also meet the provisions of Section 13.23.080, paragraph C. Each duct shall be provided with a bend in the duct such that there is no direct line-of-sight through the duct from the venting cross-section to the room-opening cross-section. Duct lining shall be coated glass fiber duct liner at least 1 inch thick.

4. Fireplaces shall be provided with well fitted dampers. (Ord. 93-1024 § 1)

13.23.090 Building requirements for a noise level reduction of 30 dB.

A. Compliance. Compliance with this section shall be deemed to meet requirements for a minimum noise level reduction (NLR) of 30 decibels.

B. Exterior Walls.

13.23.090

1. Exterior walls, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC-35; or

2. Masonry walls having a weight of at least 40 pounds per square foot do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered;

3. Stud walls shall be at least 4" in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish.

a. Interior surface of the exterior walls shall be of gypsum board or plaster at least 1/2 inch thick, installed on the studs. The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer or stucco. If the exterior is siding, the interior gypsum board or plaster must be fastened resiliently to the studs.

b. Continuous composition board, plywood, or gypsum board sheathing at least three-fourths (3/4) inch thick shall cover the exterior side of the wall studs.

c. Sheathing panels shall be covered on the exterior with overlapping building paper.

d. Insulation material at least R-11 shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber or mineral wool.

C. Exterior Windows.

1. Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-33; or

2. Windows shall be double-glazed with panes at least 1/8" thick. Panes of glass shall be separated by a minimum 1/2" airspace;

3. Double-glazed windows shall employ fixed sash or efficiently weatherstripped, operable sash. The sash shall be rigid and weatherstripped with material that is compressed airtight when the window is closed so as to conform to an infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T;

4. Glass shall be sealed in an airtight manner with a nonhardening sealant or a soft elastomer gasket or gasket tape.

5. The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal specifications: TT-S-00227, TT-S-00230 or TT-S-00153.

D. Exterior Doors.

1. Doors other than as described in this section shall have a laboratory sound transmission class rating of at least STC-33; or

2. Double door construction is required for all door openings to the exterior. Openings fitted with side-hinged doors shall have one solid core wood or insulated hollow metal door at least 1-3/4" thick separated by an airspace of at least 3" from another door, which can be a storm door. Both doors shall be tightly fitted and weatherstripped;

3. The glass double glazed sliding doors shall be separated by a minimum 1/2" airspace. Each sliding frame shall be provided with an efficiently airtight weatherstripping material as specified in Section 13.23.100, paragraph C;

4. Glass, over two square feet in area, of all doors shall be at least 3/16" thick. Glass of double sliding doors shall not be equal in thickness;

5. The perimeter of door frames shall be sealed airtight to the exterior wall construction (framing) as indicated in Section 13.23.100, paragraph E;

6. Glass in doors shall be sealed in an airtight nonhardening sealant or in a soft elastomer gasket or glazing tape.

E. Roofs.

1. Combined roof and ceiling construction other than described in this section and Section 13.23.100, paragraph F shall have a laboratory sound transmission class rating of at least STC-44; or

2. With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of 3/4" composition board, plywood or gypsum board sheathing topped by roofing as required;

3. Open beam roof construction shall follow the energy insulation standard method

13.23.100

for batt insulation, except use 1" plywood decking with shakes or other suitable roofing material;

4. Window or dome skylights shall have a laboratory sound transmission class rating of at least STC-33.

F. Ceilings.

1. Gypsum board or plaster ceilings at least 5/8" thick shall be provided where required by Section 13.23.100, paragraph E, subparagraph (2), above. Ceilings shall be substantially airtight with a minimum of penetrations.

2. Glass fiber, cellulose or mineral wool insulation at least R-38 shall be provided above the ceiling between joists.

G. Floors. The floor of the lowest occupied rooms shall be slab on fill, below grade, or over a fully enclosed basement or crawl space. All door and window openings in the fully enclosed basement shall be tightly fitted.

H. Ventilation.

1. A ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors or other openings to the exterior. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with 1" thick coated glass fiber, and shall be at least 5 feet long with one 90 degree bend.

2. Gravity vent openings in attics shall be as close to code minimum in number and size, as practical. The openings shall be fitted with transfer ducts at least 3 feet in length containing internal 1" thick coated fiberglass sound-absorbing duct lining. Each duct shall have a lined 90 degree bend in the duct such that there is no direct line-of-sight from the exterior through the duct into the attic.

3. Bathroom, laundry, and similar exhaust ducts connecting the interior space to the outdoors, shall contain at least a 10-foot length of internal sound-absorbing duct lining. Exhaust ducts less than 10 feet in length shall be fully lined and shall also meet the provisions of Section 13.23.080, paragraph C. Each duct shall be provided with a lined 90 degree

bend in the duct such that there is no direct line-of-sight through the duct from the venting cross-section to the room opening cross-section. Duct lining shall be coated glass fiber duct liner at least 1" thick.

4. Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a self-closing baffle plate across the exterior termination which allows proper ventilation. The duct shall be provided with a 90 degree bend. (Ord. 93-1024 § 1)

13.23.100 Building requirements for a noise level reduction of 35dB.

A. Compliance. Compliance with this section shall be deemed to meet requirements for a minimum noise level reduction (NLR) of 35 decibels.

B. Exterior Walls.

1. Exterior walls, other than as described in this section shall have a laboratory sound transmission class rating of at least STC-40; or

2. Masonry walls having a weight of at least 75 pounds per square foot do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered;

3. Stud walls shall be at least 4" in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish;

a. Interior surface of the exterior walls shall be gypsum board or plaster at least 5/8" thick installed on the studs. The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer or stucco. If the exterior is stucco or siding, the interior gypsum board or plaster must be fastened resiliently to the studs or double thickness must be used.

b. Continuous composition board, plywood, or gypsum board sheathing at least 1" thick shall cover the exterior side of the wall studs.

c. Sheathing panels shall be butted tightly and covered on the exterior with overlapping building paper.

d. Insulation material at least R-19 shall be installed continuously throughout the cavity space behind the exterior sheathing and

13.23.100

between wall studs. Insulation shall be glass fiber or mineral wool.

C. Exterior Windows.

1. Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-38; or

2. Windows shall be double-glazed with panes at least 3/16" thick. Panes of glass shall be separated by a minimum 1/2" airspace and shall not be equal in thickness;

3. Double-glazed windows shall employ fixed sash or efficiently weatherstripped, operable sash. The sash shall be rigid and weatherstripped with the material that is compressed airtight when the window is closed so as to conform to an infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T;

4. Glass shall be sealed in an airtight manner with a nonhardening sealant or a soft elastomer gasket or gasket tape;

5. The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal specifications: TT-S-00227, TT-S-00230 or TT-S-00153.

D. Exterior Doors.

1. Doors other than as described in this section shall have a laboratory sound transmission class rating of at least STC-33; or

2. Double door construction is required for all door openings to the exterior. The doors shall be side-hinged and shall be solid core wood or insulated hollow metal door at least 1-3/4" thick, separated by a vestibule or enclosed porch at least 3 feet in length. Both doors shall be tightly fitted and weatherstripped;

3. The glass of double-glazed sliding doors shall be separated by a minimum 1/2" airspace. Each sliding frame shall be provided with an efficiently airtight weatherstripping material as specified in Section 13.23.110 paragraph C, subparagraph (2);

4. Glass of all doors shall be at least 3/16" thick. Glass of double sliding doors shall not be equal in thickness;

5. The perimeter of door frames shall be sealed airtight to the exterior wall construc-

tion (framing) as indicated in Section 13.23.110, paragraph C, subparagraph (5);

6. Glass in doors shall be sealed in an airtight nonhardening sealant or in a soft elastomer gasket or glazing tape.

E. Roofs.

1. Combined roof and ceiling construction other than described in this section and Section 13.23.110, paragraph F, shall have a laboratory sound transmission class rating of at least STC-49; or

2. With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of 1" composition board, plywood or gypsum board sheathing topped by roofing as required.

3. Open beam roof construction shall follow the energy insulation standard method for batt insulation, except use 1" plywood decking with concrete or clay tiles as roofing material.

F. Ceilings.

1. Gypsum board or plaster ceilings at least 5/8" thick shall be provided where required by Section 13.23.110, paragraph E., above. Ceilings shall be substantially airtight with a minimum of penetrations. The ceiling panels shall be mounted on resilient clips or channels.

2. Glass fiber, cellulose or mineral wool insulation at least R-38 shall be provided above the ceiling between joists.

G. Floors. The floor of the lowest occupied rooms shall be slab on fill or below grade.

H. Ventilation.

1. A ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors or other openings to the exterior. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with 1" thick coated glass fiber, and shall be at least 10 feet long with one 90 degree bend.

2. Gravity vent openings in attics shall be as close to code minimum in number and size, as practical. The openings shall be fitted with transfer ducts at least 6 feet in length con-

13.25.010

taining internal 1" thick coated fiberglass sound-absorbing duct lining. Each duct shall have a lined 90 degree bend in the duct such that there is no direct line-of-sight from the exterior through the duct into the attic.

3. Bathroom, laundry, and similar exhaust ducts connecting the interior space to the outdoors, shall contain at least a 10-foot length of internal sound-absorbing duct lining. Exhaust ducts less than 10 feet in length shall be fully lined and shall also meet the provisions of Section 13.23.080, paragraph C. Each duct shall be provided with aligned 90 degree bend in the duct such that there is no direct line-of-sight through the duct from the venting cross-section to the room-opening cross-section. Duct lining shall be coated glass fiber duct liner at least 1" thick.

4. Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a self-closing baffle plate across the exterior termination which allows proper ventilation. The duct shall be provided with a 90 degree bend. (Ord. 93-1024 § 1)

Chapter 13.25**PERMIT FEES****Sections:**

- 13.25.010 Definitions.**
- 13.25.020 Right-of-way use permits.**
- 13.25.030 Shoreline management permits.**
- 13.25.040 Special review fees.**
- 13.25.050 Subdivision permit fees.**
- 13.25.060 Uniform Fire Code permit fees.**
- 13.25.070 Zoning and land use permit fees.**

13.25.010 Definitions.

The following sections of Chapter 27.04 King County Code as now in effect, and as may subsequently be amended, are adopted by reference:

- 27.04.010 Development permits.
 - 27.04.020 Division.
 - 27.04.030 Manager.
- (Ord. 90-1023 § 1)

13.25.020 Right-of-way use permits.

The following sections of Chapter 27.16 King County Code as now in effect, and as may subsequently be amended, are adopted by reference:

- 27.16.010 Right-of-way use permits.
 - 27.16.020 Right-of-way permit fees.
- (Ord. 90-1023 § 4)

13.25.030 Shoreline management permits.

The following sections of Chapter 27.20 King County Code as now in effect, and as may subsequently be amended, are adopted by reference:

- 27.20.010 Shoreline management permit fees.
 - 27.20.020 Shoreline fees.
- (Ord. 90-1023 § 5)

King County

of the device does not conflict with the requirements of this code or the requirements of other ordinances regulating safe exits.

NEW SECTION. SECTION 65. There is added to Appendix Chapter 10, Security Provisions, of the Uniform Building Security Code a new section to read as follows:

UBSC 1033 - Definitions.

For the purpose of this chapter, certain terms are defined as follows:

DWELLING UNIT as used in the Uniform Building Security Code is defined pursuant to K.C.C. 21A.06.345.

RENT OR LEASE means an agreement, oral or written, relating to the use and occupancy of a dwelling.

NEW SECTION. SECTION 66. Sections 1208 and 1209 of Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code are hereby repealed.

NEW SECTION. SECTION 67. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1210 Sea-Tac sound reduction standards - Purpose. The purpose of these sections is to safeguard life, health, property and public welfare by establishing minimum requirements regulating the design, construction, and/or setting on site of buildings for human occupancy in the vicinity of Sea-Tac International Airport as identified on the maps referenced in the April 24, 1985 Federal Register, Volume 50, No. 79. These sections are not intended to abridge any safety or health requirements required under any other applicable codes or ordinances.

NEW SECTION. SECTION 68. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1211 Scope. The provisions of this chapter shall apply to all buildings or structures constructed or placed in use for human occupancy on sites within the vicinity of



Seattle-Tacoma International Airport which have been included within or enclosed by the Port of Seattle Noise Remedy Program boundaries;

1. Structures relocated shall comply with all requirements of this chapter and,

2. Mobile homes located in mobile home parks shall be exempt from these requirements.

This chapter is intended to supplement the provisions of the Uniform Mechanical Code, the adopted Energy Code, and the remainder of the Uniform Building Code. In the case of conflict between the chapter and any other applicable codes the more restrictive requirements shall be met.

NEW SECTION. SECTION 69. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1212 Application to existing buildings. Additions may be made to existing buildings or structures without making the entire building structure comply with all the requirements of this chapter for new construction. Additions shall be made to comply in the areas being added to the extent that it is deemed practical and effective by the director of the department of development and environmental services in meeting the intent of this chapter.

Any change of use in the occupancy or use of a building previously unapproved for human occupancy to human occupancy use or one previously unused for sleeping purposes to sleeping use shall not be permitted unless the building, structure or portion of the building complies with this chapter.

NEW SECTION. SECTION 70. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1213 Details. The plans and specifications shall show in sufficient detail all pertinent data and features of the building, equipment and systems, as herein governed, including, but not limited to: exterior envelope component materials; STC rating of applicable component assemblies; R-values of applicable insulation materials; size and type

of apparatus and equipment; equipment and system controls and other pertinent data to indicate conformance with the requirements herein.

NEW SECTION. SECTION 71. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1214 Fees. The director, department of development and environmental services, is authorized to collect fees for administration, plan checking and inspection. This fee shall be known as the Sea-Tac Noise Fee. The fee shall be calculated as the sum of the fees for special plan review and supplemental inspection.

NEW SECTION. SECTION 72. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1215 Definitions. NOISE REDUCTION COEFFICIENT (NRC) is the arithmetic average of the sound absorption coefficients of a material at 250, 500, 1000, and 2000 Hz.

SOUND TRANSMISSION CLASS (STC) is single-number rating for describing sound transmission loss of a wall, roof, floor, window, door, partition or other individual building components or assemblies.

NEW SECTION. SECTION 73. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1216 Design requirements. The criteria of these sections establish the minimum requirements for acoustic design of the exterior envelope of buildings and for HVAC systems and its parts. These requirements shall apply to all buildings for human occupancy within the Sea-Tac Noise Program Areas.

NEW SECTION. SECTION 74. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1217 SEA-TAC Noise Program area. Noise determined construction requirements detailed in this chapter shall be applied to new construction and additions of all structures, except for not normally inhabited portions of warehouses, storage buildings and similar structures as determined by the director, within the designated program areas of the Port of Seattle's Noise Remedy Program. The applicable program areas are the Neighborhood Reinforcement Area and the Cost Share Insulation Area. Specific Construction requirements for these two areas are:

(a) Neighborhood Reinforcement Area:

1) Bedrooms must comply with Section 1234 which is designed to achieve a noise reduction of 35 db.

2) All other living and working areas must comply with Section 1226 which is designed to achieve a noise reduction level of 30 dB.

(b) Cost-Share Insulations Area:

1) Bedrooms must comply with Section 1226 which is designed to achieve a noise reduction of 30 dB.

2) All other living and working areas must comply with Section 1219 which is designed to achieve a noise reduction level of 25 dB.

NEW SECTION. SECTION 75. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1218 Air leakage for all buildings. (a) The requirements of this section shall apply to the design of the exterior envelope of all buildings in the Sea-Tac Noise Program Area designed for human occupancy. The requirements of this section are not applicable to the separation of interior spaces from each other.

(b) The following limitations shall be sealed, caulked, gasketed, or weather-stripped to limit or eliminate air leakage:

1) Exterior joints around window and door frames between the window or door frame and the framing.

- 2) Openings between walls and foundations.
- 3) Between the wall sole plate and the rough flooring.
- 4) Opening at penetrations of utility services through walls, floor, and roofs.
- 5) Between wall panels at corners.
- 6) All other openings in the building envelope.

(c) Through the wall, floor, or roof/ceiling penetrations not specifically addressed in these sections shall be designed to limit sound transmission and shall have the same average laboratory sound transmission classification as required for doors.

NEW SECTION. SECTION 76. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1219 Building requirements for a noise level reduction of 25 dB compliance. Compliance with Section 1220 through Section 1225 shall be deemed to meet requirements for a minimum noise level reduction (NLR) of 25 decibels.

NEW SECTION. SECTION 77. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1220 Exterior walls. (a) Exterior walls, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC-30; or

(b) Masonry walls having a weight of at least 25 pounds per square feet do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered.

(c) Stud walls shall be at least 4 inches in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish.

- 1. Interior surface of the exterior walls shall be of gypsum board or plaster at least 1/2 inch thick, installed on the studs.
- 2. Continuous composition board, plywood or gypsum board sheathing at least 1/2 inch thick shall cover the exterior side of the wall studs.

3. Sheathing panels shall be covered on the exterior with overlapping building paper.

4. Insulation material at least R-11 shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulations shall be glass fiber or mineral wool.

NEW SECTION. SECTION 78. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1221 Exterior windows. (a) Windows other than as described in this section shall have a laboratory sound transmission class rating at least STC-28; or

(b) Glass shall be at least 3/16" thick.

(c) All windows that open shall be weather-stripped and airtight when closed so as to conform to an air infiltration test not to exceed 0.5 cubic feet per minute per foot of crack length in accordance with ASTM E-283-65-T.

(d) Glass shall be sealed in an airtight manner with a nonhardening sealant or a soft elastomer gasket or gasket tape.

(e) The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal specifications: TT-S-00227, TT-S-00230 or TT-S-00153.

NEW SECTION. SECTION 79. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1222 Exterior doors. (a) Doors other than as described in this section shall have a laboratory sound transmission class rating of at least STC-26; or

(b) All exterior side-hinged doors shall be solid-core wood or insulated hollow metal at least 1-3/4" thick and shall be fully weather-stripped.

(c) Exterior sliding doors shall be weather-stripped with an efficient airtight gasket system with performance as specified in Section 1221(c). The glass in the sliding doors shall be at least 3/16" thick.

(d) Glass in doors, over two square feet in area, shall be sealed in an airtight nonhardening sealant or in a soft elastomer gasket or glazing tape.

(e) The perimeter of door frames shall be sealed airtight to the exterior wall construction as described in Section 1221(e).

NEW SECTION. SECTION 80. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1223 Roofs. (a) Combined roof and ceiling construction other than as described in this section and Section 1224 shall have a laboratory sound transmission class rating of at least STC-39; or

(b) With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of 1/2" composition board, plywood or gypsum board sheathing topped by roofing as required.

(c) Open beam roof construction shall follow the energy insulation standard method for batt insulation.

(d) Skylights shall conform to the window standard of Section 1221.

NEW SECTION. SECTION 81. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1224 Ceilings. (a) Gypsum board for plaster ceilings at least 1/2 inch thick shall be provided where required by Section 1223(b), above. Ceilings shall be substantially airtight with a minimum of penetrations.

(b) Glass fiber or mineral wool insulation at least R-19 shall be provided above the ceiling between joists.

NEW SECTION. SECTION 82. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1225 Ventilation. (a) Ventilation systems shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors or other openings to the exterior. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with 1 inch thick coated glass fiber, and shall be at least 5 feet long with a 90 degree bend.

(b) Gravity vent openings in attics shall be as close to minimum code in number and size as practical.

(c) Bathroom, laundry and similar exhaust ducts connecting the interior space to the outdoors, shall contain at least a 5-foot length of internal sound-absorbing duct lining. Exhaust ducts less than 5 feet in length shall be fully lined and shall also meet the provisions of Section 1218(c). Each duct shall be provided with a bend in the duct such that there is no direct line-of-sight through the duct from the venting cross-section to the room-opening cross-section. Duct lining shall be coated glass fiber duct line at least 1 inch thick. In areas (i.e. shower rooms) which produce moisture, duct lining shall be made of non-absorbent material. Commercial kitchen exhaust systems and product conveying duct systems (Chapter 5 U.M.C.) shall be exempt.

(d) Fireplaces shall be provided with well fitted dampers.

NEW SECTION. SECTION 83. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1226 Building requirements for a noise level reduction of 30 dB compliance. Compliance with Section 1227 through Section 1233 shall be deemed to meet requirements for a minimum noise level reduction (NLR) of 30 decibels.

NEW SECTION. SECTION 84. There is added to Appendix Chapter 12, Division

II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1227 Exterior walls. (a) Exterior walls, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC-35; or

(b) Masonry walls having a weight of at least 40 pounds per square foot do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered.

(c) Stud walls shall be at least 4" in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish.

1. Interior surface of the exterior walls shall be of gypsum board or plaster at least 1/2 inch thick, installed on the studs. The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer or stucco. If the exterior is siding, the interior gypsum board or plaster must be fastened resiliently to the studs.

2. Continuous composition board, plywood, or gypsum board sheathing at least 3/4" thick shall cover the exterior side of the wall studs.

3. Sheathing panels shall be covered on the exterior with overlapping building paper.

4. Insulation material at least R-11 shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber or mineral wool.

NEW SECTION. SECTION 85. There is added to Appendix Chapter 12, Division

II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1228 Exterior windows. (a) Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-33; or

(b) Windows shall be double glazed with panes at least 1/8" thick. Panes of glass shall be separated by a minimum 1/2" airspace.

(c) Double-glazed windows shall employ fixed sash or efficiently weather-stripped, operable sash. The sash shall be rigid and weather-stripped with material that is compressed airtight when the window is closed so as to conform to an air infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T.T.

(d) Glass shall be sealed in an airtight manner with a nonhardening sealant or a soft elastomer gasket or gasket tape.

(e) The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal specifications: TT-S-0027, TT-S-00230 or TT-S-00153.

NEW SECTION. SECTION 86. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1229 Exterior doors. (a) Doors other than as described in this section shall have a laboratory sound transmission class rating of at least STC-33; or

(b) Double door construction is required for all door openings to the exterior. Openings fitted with side-hinged doors shall have one solid core of wood or be an insulated hollow metal door at least 1-3/4" thick separated by an airspace of at least 3" from another door, which can be a storm door. Both doors shall be tightly fitted and weather-stripped.

(c) The glass of double glazed sliding doors shall be separated by a minimum 1/2" airspace. Each sliding frame shall be provided with an efficiently airtight weather-stripping material as specified in Section 1228(c).

(d) Glass (over two square feet in area) of all doors shall be at least 3/16" thick. Glass of double sliding doors shall not be equal in thickness.

(e) The perimeter of door frames shall be sealed airtight to the exterior wall construction (framing) as indicated in Section 1228 (c).

(f) Glass in doors shall be sealed in an airtight nonhardening sealant or in a soft elastomer gasket or glazing tape.

NEW SECTION. SECTION 87. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1230 Roofs. (a) Combined roof and ceiling construction other than described in this section and Section 1231 shall have a laboratory sound transmission class rating of at least STC-44; or

(b) With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of 3/4" composition board, plywood or gypsum board sheathing topped by roofing as required.

(c) Open beam roof construction shall follow the energy insulation standard method for batt insulation, except use 1" plywood decking with shakes or other suitable roofing material.

(d) Window or dome skylights shall have a laboratory sound transmission class rating of at least STC-33.

NEW SECTION. SECTION 88. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1231 Ceilings. (a) Gypsum board or plaster ceilings at least 5/8" thick shall be provided where required by Section 1230(b) above. Ceilings shall be substantially airtight with a minimum of penetrations.

(b) Glass fiber or mineral wool insulation of least R-19 shall be provided above the ceiling between joists.

NEW SECTION. SECTION 89. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1232 Floors. The floor of the lowest occupied rooms shall be slab on fill, below grade, or over a fully enclosed basement or crawl space. All door and window openings in the fully enclosed basement shall be tightly fitted.

NEW SECTION. SECTION 90. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1233 Ventilation. (a) A ventilation system shall be installed that would provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors or other openings to the exterior. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with 1" thick coated glass fiber, and shall be at least 5 feet long with one 90 degree bend.

(b) Gravity vent openings in attic shall be as close to minimum code in number and size, as practical. The openings shall be fitted with transfer ducts at least 3 feet in length containing internal 1" thick coated fiberglass sound-absorbing duct lining. Each duct shall have a lined 90 degree bend in the duct such that there is no direct line-of-sight from the exterior through the duct into the attic.

(c) Bathroom, laundry, and similar exhaust ducts connecting the interior space to the outdoors, shall contain at least 10-foot length of internal sound-absorbing duct lining. Exhaust ducts less than 10 feet in length shall be fully lined and shall also be the provisions of Section 1218(c). Each duct shall be provided with a lined 90 degree bend in the duct such that there is no direct line-of-sight through the duct from the venting cross-section to the room opening cross-section. Duct lining shall be coated glass fiber duct liner at least 1" thick. In areas (i.e. shower rooms) which produce moisture, duct lining shall be made of non-absorbent material. Commercial kitchen exhaust systems and product conveying duct systems (Chapter 5 U.M.C.) shall be exempt.

(d) Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a self-closing baffle plate across the exterior termination which allows proper ventilation. The duct shall be provided with a 90 degree bend.

NEW SECTION. SECTION 91. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1234 Building requirements for a noise level reduction of 35 dB compliance. Compliance with Section 1235 through Section 1241 shall be deemed to meet requirements for a minimum noise level reduction (NLR) of 35 decibels.

NEW SECTION. SECTION 92. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1235 Exterior walls. (a) Exterior walls, other than as described in this section shall have a laboratory sound transmission class rating of at least STC-40; or

(b) Masonry walls having a weight of at least 75 pounds per square feet do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered.

(c) Stud walls shall be at least 4" in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish.

1. Interior surface of the exterior walls shall be of gypsum board or plaster at least 5/8" thick installed on the studs. The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer or stucco. If the exterior is stucco or siding, the interior gypsum board or plaster must be fastened resiliently to the studs or double thickness must be used.

2. Continuous composition board, plywood, or gypsum board sheathing at least 1" thick shall cover the exterior side of the wall studs.

3. Sheathing panels shall be butted tightly and covered on the exterior with overlapping building paper.

4. Insulation material at least R-19 shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber or mineral wool.

NEW SECTION. SECTION 93. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1236 Exterior windows. (a) Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-38; or

(b) Windows shall be double glazed with panes at least 3/16" thick. Panes of glass shall be separated by a minimum 1/2" airspace and shall not be equal in thickness.

(c) Double-glazed windows shall employ fixed sash or efficiently weather-stripped, operable sash. The sash shall be rigid and weather-stripped with material that is compressed airtight when the window is closed so as to conform to an air infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM-E-283-65-T.

(d) Glass shall be sealed in an airtight-manner with a nonhardening sealant of soft elastomer gasket or gasket tape.

(e) The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal specifications: TT-S-00227, TT-S-00230 or TT-S-00153.

NEW SECTION. SECTION 94. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1237 Exterior doors. (a) Doors other than as described in this section shall have a laboratory sound transmission class rating of a least STC 33; or

(b) Double door construction is required for all door openings to the exterior. The doors shall be side-hinged and shall be solid core wood or insulated hollow metal door at least 1-3/4" thick, separated by a vestibule or enclosed porch at least 3 feet in length. Both doors shall be tightly fitted and weather-stripped.

(c) The glass or double glazed sliding doors shall be separated by a minimum 1/2" airspace. Each sliding door frame shall be provided with an efficiently airtight weather-stripping material specified in Section 1236(c).

(d) Glass of all doors shall be at least 3/16" thick. Glass of double sliding doors shall not be equal in thickness.

(e) The perimeter of door frames shall be sealed airtight to the exterior wall construction (framing) as indicated in Section 1236(e).

(f) Glass in doors shall be sealed in an airtight nonhardening sealant or in a soft elastomer gasket of glazing tape.

NEW SECTION. SECTION 95. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1238 Roofs. (a) Combined roof and ceiling construction other than as described in this section and Section 1239 shall have a laboratory sound transmission class rating of at least STC-49; or

(b) With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of 1" composition board, plywood or gypsum board sheathing topped by roofing as required.

(c) Open beam roof construction shall follow the energy insulation standard method for batt insulation, except use 1" plywood decking with concrete or clay tiles as roofing material.

NEW SECTION. SECTION 96. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1239 Ceiling. (a) Gypsum board or plaster ceiling at least 5/8" shall be provided where required by Section 1238, above. Ceiling shall be substantially airtight with a minimum of penetrations. The ceiling panels shall be mounted on resilient clips or channels.

(b) Glass fiber or mineral wool insulation at least R-30 shall be provided above the ceiling between joists.

NEW SECTION, SECTION 97. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1240 Floors. The floor of the lowest occupied rooms shall be slab on fill or below grade.

NEW SECTION, SECTION 98. There is added to Appendix Chapter 12, Division II, Sound Transmission Control, of the Uniform Building Code, a new section to read as follows:

UBC 1241 Ventilation. (a) A ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors or other opening to the exterior. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with 1" thick coated glass fiber, and shall be at least 10 feet long with one 90 degree bend.

(b) Gravity vent openings in attics shall be as close to minimum code in number and size, as practical. The openings shall be fitted with transfer ducts at least 6 feet in length containing internal 1" thick coated fiberglass sound-absorbing duct lining. Each duct shall have a lined 90 degree bend in the duct that there is no direct line-of-sight from the exterior through the duct into the attic.

(c) Bathroom, laundry, and similar exhaust ducts connecting the interior space to the outdoors, shall contain at least a 10-foot length of internal sound-absorbing duct lining. Exhaust ducts less than 10 feet in length shall be fully lined and shall also meet the provisions of Section 1218(c). Each duct shall be provided with a lined 90 degree bend in the duct such that there is no direct line-of-sight through the duct from the venting cross-section to the room-opening cross-section. Duct lining shall be coated glass fiber duct liner at least 1" thick.

(d) Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a self-closing baffle plate across the exterior termination which allows proper ventilation. The duct shall be provided with a 90 degree bend.

~~NEW SECTION, SECTION 99. There is added to the Uniform Building Code Standards a new section to read as follows:~~

~~UBC Standard 9-4 Installation of sprinkler systems in one and two family dwellings and manufactured homes. The installation of sprinklers systems in Group R-3 Occupancies required in this code shall be in accordance with the Standard for the Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes, N.F.P.A. 13 D - Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes, 1994 Edition.~~

~~NEW SECTION, SECTION 100. Section 108.1 of the Uniform Mechanical Code is hereby repealed, and the following is substituted:~~

~~UMC 108.1 General. The building official is hereby authorized and directed to enforce all the provisions of this code, except the fuel gas piping requirements contained in Chapter 22 of Appendix B. Fuel-gas piping shall be enforced by the director of public health. For such purposes the building official and public health director shall have the powers of a law enforcement officer with right to entry and serving of notice and orders.~~

~~The building official shall have the power to render interpretations of this code and to adopt and enforce rules and regulations supplemental to this code as may be deemed necessary in order to clarify the application of the provisions of this code. Such interpretations, rules and regulations shall be in conformity with the intent and purpose of this code.~~

~~NEW SECTION, SECTION 101. Section 108.3 of the Uniform Mechanical Code is hereby repealed, and the following is substituted:~~

~~UMC 108.3 Right of entry. The right of entry shall be in accordance with the procedures specified in Title 23 of the King County Code.~~

City of Des Moines



SOUND TRANSMISSION CONTROL REQUIREMENTS

The City is divided into two sound transmission control areas. Area 1 (all portions of the city north of South 252nd Street or its extension) is a 35 decibel reduction zone. Area 2 (all of the city south of South 252nd Street) is a 30 decibel reduction zone. These areas are based DMMC 14.08.280.

This informational handout is a summary of the City of Des Moines Sound Transmission Control Ordinance. Section 1 describes the construction requirements for buildings constructed in Area 1 that must meet the requirement of 35 decibel reduction. Section 2 provides the same information for buildings constructed in Area 2.

SECTION 1

Exterior Walls in Area 1

1. Exterior walls, other than as described in this section shall have a laboratory sound transmission class rating of at least STC-40; **(OR)**
2. Masonry walls having a weight of at least seventy-five (75) pounds per square foot, do not require a furred (stud) interior wall. At least one surface of the concrete block walls shall be plastered.
3. Stud walls shall be at least four inches (4") in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish. Due to energy code requirements, a 2" X 6" wall would be appropriate in order to obtain the R-19 minimum insulation requirements.
 - A. Continuous composition board, plywood, O. S. B. board or gypsum board sheathing at least one inch (1") thick shall cover the exterior side of the wall studs. The thickness of the exterior sheathing includes the thickness of the sub-sheathing only. The thickness of the exterior wall finish (or siding) is not included.
 - B. Sheathing panels shall be butted tightly and covered on the exterior with an approved building wrap. Building paper must be overlapping.
 - C. Insulation material of a type approved by the Building Official, (listed), and rated not less than R-19 shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs.
 - D. The interior surface of the exterior walls shall be of gypsum board or plaster at least five-eighths (5/8") thick, installed on the studs. The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer or stucco. If the exterior wall finish is siding on sheathing, the interior gypsum board or plaster shall be fastened resiliently to the studs or double thickness must be used.

Exterior Windows in Area 1

Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-38; (OR)

1. Windows shall be double glazed with panes at least three-sixteenths inch (3/16") thick. Panes of glass shall be separated by a minimum one-half inch (1/2") airspace, and shall not be equal in thickness.
2. Double glazed windows shall employ fixed sash or efficiently weatherstripped, operable sash. The sash shall be rigid and weatherstripped with material that is compressed airtight when the window is closed so as to conform to an air infiltration test not to exceed one-half (1/2) cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T.
3. Glass shall be sealed in an air-tight manner with a non-hardening sealant or a soft elastomer gasket or gasket tape.
4. The perimeter of the window frames shall be sealed air-tight to the exterior wall construction with a sealant conforming to one of the following Federal Specifications: TT-S-00227, TT-S-00230, or TT-S-00153, or other materials approved by the Building Official, (listed).

Exterior Doors in Area 1

Doors other than as described in this section shall have a laboratory sound transmission class rating of at least STC-33; (OR)

1. Double door construction is required for all hinged door openings to the exterior. Such doors shall be side hinged and shall be solid core wood or insulated hollow metal at least one and three-fourths inch (1-3/4") thick separated by an airspace of at least three inches (3") from another door, storm door. Both doors shall be tightly fitted and weatherstripped.
2. The glass of double glazed sliding doors shall be separated by a minimum one-half inch (1/2") airspace. Each sliding frame shall be provided with an efficiently airtight weatherstripping material as specified in (d) above.
3. Glass, over two (2) square feet in area, of all doors, shall be at least three-sixteenths (3/16") thick. Glass of double sliding doors shall not be of equal thickness.
4. The perimeter of door frames shall be sealed airtight to the exterior wall construction (framing) as described in section (d) above.
5. Glass in doors shall be sealed in an airtight non-hardening sealant or in a soft elastomer gasket or gasket tape.

Roofs in Area 1

Combined roof and ceiling construction on other than as described in this section and the section on ceilings shall have a laboratory sound transmission class of STC-49; (OR)

1. With an attic or rafter space at least six inches (6") deep, and with a ceiling below, the roof shall consist of one inch (1") composition board, plywood or gypsum board sheathing topped with an approved roofing material.

2. Open beam construction shall follow the energy insulation standard method for batt insulation, except use one inch (1") plywood decking with concrete or clay tiles.
3. **Composition board shall mean asphaltic impregnated board or an approved sound board.**
4. Window or dome skylights shall have a laboratory sound transmission class rating of at least STC-38. Skylight assemblies that consist of 1/4" tempered glass, 1/2" air space and a laminated panel consisting of 1/8" tempered glass, .03" (three mils) laminate and 1/8" tempered glass will be accepted in lieu of the tested assembly.

Ceilings in Area 1

1. Gypsum board or plaster ceilings at least five-eighths inch (5/8") thick shall be provided. Ceilings shall be substantially airtight with a minimum of penetrations. **The ceiling panels shall be mounted on resilient clips or channels.**
2. Insulation material of a type approved by the building official, (listed), and rated not less than R-30 shall be provided above the ceiling between joist.

Floors in Area 1

The floor of the lowest occupied rooms shall be slab on fill or below grade, over a fully enclosed basement or crawl space. All door and window openings in a fully enclosed basement shall be tightly fitted.

Ventilation in Area 1

The Washington State Code on Ventilation and Indoor Air Quality shall prevail. The following items shall be included. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least twenty (20) gauge steel, which shall be lined with one inch (1") thick coated glass fiber, and shall be at least five feet (5') long with one (1) ninety degree bend.

Gravity vent openings in attics shall be as close to code minimum in number and size, as practical. The openings shall be fitted with transfer ducts at least six feet (6') in length containing internal one inch (1") thick coated fiber glass sound-absorbing duct lining. Each duct shall have a lined ninety degree bend in the duct such that there is no direct line of sight from the exterior through the duct into the attic.

Bathroom, laundry and similar exhaust ducts connecting interior space to the outdoors shall be provided with a ninety degree bend in the duct such that there is no direct line of sight through the duct from the venting cross section to the room opening cross section. Duct lining shall be coated glass fiber duct liner at least one inch (1") thick.

Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a self-closing damper across the exterior termination which allows for proper ventilation.

SECTION 2

Exterior Walls in Area 2

1. Exterior walls, other than as described in this section shall have a laboratory sound transmission class rating of at least STC-35; (OR)
2. Masonry walls having a weight of at least forty (40) pounds per square foot, do not require a furred (stud) interior wall. At least one surface of the concrete block walls shall be plastered.
3. Stud walls shall be at least four inches (4") in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish. Due to energy code requirements, a 2" X 6" wall would be appropriate in order to obtain the R-19 minimum insulation requirements.
 - A. Continuous composition board, plywood, O. S. B. board or gypsum board sheathing at least three-quarter inch (3/4") thick shall cover the exterior side of the wall studs. The thickness of the exterior sheathing includes the thickness of the sub-sheathing only. The thickness of the exterior wall finish (or siding) is not included.
 - B. Sheathing panels shall be butted tightly and covered on the exterior with an approved building wrap. Building paper must be overlapping.
 - C. Insulation material of a type approved by the Building Official, (listed), and rated not less than R-19 shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs.
 - D. The interior surface of the exterior walls shall be of gypsum board or plaster at least one-half inch (1/2") thick, installed on the studs. The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer or stucco. If the exterior wall finish is siding on sheathing, the interior gypsum board or plaster shall be fastened resiliently to the studs or double thickness must be used.

(Please see attached Fire Stopping detail for requirements and options if using resilient channel in the exterior wall.)

Exterior Windows in Area 2

Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-33; (OR)

1. Windows shall be double glazed with panes at least one-eighth inch (1/8") thick. Panes of glass shall be separated by a minimum one-half inch (1/2") airspace.
2. Double glazed windows shall employ fixed sash or efficiently weatherstripped, operable sash. The sash shall be rigid and weatherstripped with material that is compressed airtight when the window is closed so as to conform to an air infiltration test not to exceed one-half (1/2) cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T.
3. Glass shall be sealed in an air-tight manner with a non-hardening sealant or a soft elastomer gasket or gasket tape.

4. The perimeter of the window frames shall be sealed air-tight to the exterior wall construction with a sealant conforming to one of the following Federal Specifications: TT-S-00227, TT-S-00230, or TT-S-00153, or other materials approved by the Building Official, (listed).

Exterior Doors in Area 2

Doors other than as described in this section shall have a **laboratory** sound transmission class rating of at least STC-33; **(OR)**

1. Double door construction is required for all hinged door openings to the exterior. Such doors shall be side hinged and shall be solid core wood or insulated hollow metal at least one and three-fourths inch (1-3/4") thick, separated by an airspace of at least three inches (3") from another door, storm door. Both doors shall be tightly fitted and weatherstripped.
2. The glass of double glazed sliding doors shall be separated by a minimum one-half inch (1/2") airspace. Each sliding frame shall be provided with an efficiently airtight weatherstripping material as specified in (d) above.
3. Glass, over two (2) square feet in area, of all doors, shall be at least three-sixteenths (3/16") thick. Glass of double sliding doors shall not be of equal thickness.
4. The perimeter of door frames shall be sealed airtight to the exterior wall construction (framing) as described in section (d) above.
5. Glass in doors shall be sealed in an airtight non-hardening sealant or in a soft elastomer gasket or gasket tape.

Roofs in Area 2

Combined roof and ceiling construction on other than as described in this section and the section on ceilings shall have a **laboratory** sound transmission class of STC-44; **(OR)**

1. With an attic or rafter space at least six inches (6") deep, and with a ceiling below, the roof shall consist of three-quarter inch (3/4") composition board, plywood or gypsum board sheathing topped with an approved roofing material.
2. Open beam construction shall follow the energy insulation standard method for batt insulation, except use one inch (1") plywood decking with concrete or clay tiles.
3. **Composition board shall mean asphaltic impregnated board or an approved sound board.**
4. Window or dome skylights shall have a laboratory sound transmission class rating of at least STC-33. Skylight assemblies that consist of 1/4" tempered glass, 1/2" air space and a laminated panel consisting of 1/8" tempered glass, .03" (three mils) laminate and 1/8" tempered glass will be accepted in lieu of the tested assembly.

Ceilings in Area 2

1. Gypsum board or plaster ceilings at least five-eighths inch (5/8") thick shall be provided. Ceilings shall be substantially airtight with a minimum of penetrations.

2. Insulation material of a type approved by the building official, (listed), and rated not less than R-30 shall be provided above the ceiling between joist.

Floors in Area 2

The floor of the lowest occupied rooms shall be slab on fill or below grade, over a fully enclosed basement or crawl space. All door and window openings in a fully enclosed basement shall be tightly fitted.

Ventilation in Area 2

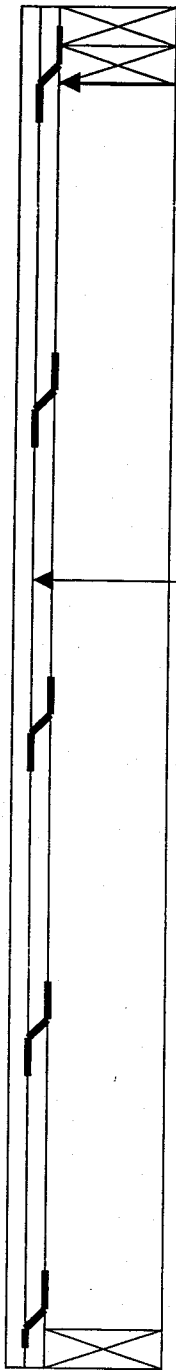
The Washington State Code on Ventilation and Indoor Air Quality shall prevail. The following items shall be included. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least twenty (20) gauge steel, which shall be lined with one inch (1") thick coated glass fiber, and shall be at least five feet (5') long with one (1) ninety degree bend.

Gravity vent openings in attics shall be as close to code minimum in number and size, as practical. The openings shall be fitted with transfer ducts at least six feet (6') in length containing internal one inch (1") thick coated fiber glass sound-absorbing duct lining. Each duct shall have a lined ninety degree bend in the duct such that there is no direct line of sight from the exterior through the duct into the attic.

Bathroom, laundry and similar exhaust ducts connecting interior space to the outdoors shall be provided with a ninety (90) degree bend in the duct such that there is no direct line of sight through the duct from the venting cross section to the room opening cross section. Duct lining shall be coated glass fiber duct liner at least one inch (1") thick.

Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a self-closing damper across the exterior termination which allows for proper ventilation.

FIRE STOPPING RESILIENT CHANNEL IN THE EXTERIOR WALL
AS PER UBC SECTION 708.2.2



1. Set top channel at the top plate line.

FIRE STOPPING OPTIONS

2. Mineral fiber strips at 10' on center vertically.
3. Run a vertical channel at 10' on center and fire caulk any openings.
4. Run vertical strips of 1/2" drywall at 10' on center.