

## **APPENDIX H NOISE MEDIATION ACTIONS**

The Seattle Tacoma Airport (Sea-Tac Airport) was the first airport in the country to use environmental mediation to develop aircraft noise reduction programs. This action involved stakeholders; including representatives of noise impacted areas, airlines, the Federal Aviation Administration (FAA), the Port of Seattle, Airline Pilots Association (ALPA), and other airport users; in a consensus-based process to develop new and innovative noise programs that would, instead of being geographically based, improve the noise environment for all. On March 31, 1990, the Sea-Tac Noise Mediation Committee reached an agreement on a package of noise reduction measures for Sea-Tac Airport. The package contained long and short term elements aimed at reducing aircraft noise by at least 50 percent by the year 2000. The elements of this noise mediation package are included in this appendix.

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**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**

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*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 diagramatic 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. Its 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:

For the <u>Calendar Year</u> Base Period	Maximum <u>ANEL*</u>	Percent <u>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  $\text{EP}_1$ ,  $\text{EP}_2$ ,  $\text{EP}_3$ , &  $\text{EP}_4$  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

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(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.