

**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