

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</u>	<u>Maximum ANEL*</u>	<u>Percent Reduction*</u>
Base Period	74.53	0%
1991	74.35	4%
1992	74.17	8%
1993	73.88	14%
1994	73.59	19%
1995	73.28	25%
1996	72.97	30%
1997	72.66	35%
1998	72.31	40%
1999	71.96	45%
2000	71.60	49%
2001	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=

$$10 \times \text{Log} \frac{\text{ED} \times [\text{Antilog}(\text{SEL}_A/10) + \text{Antilog}(\text{SEL}_B/10) + \text{Antilog}(\text{SEL}_C/10)]}{86,400}$$

b. Partial PCNEL for Arrivals=

$$10 \times \text{Log} \frac{\text{EA} \times [\text{Antilog}(\text{SEL}_D/10)]}{86,400}$$

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 EP₁, EP₂, EP₃, & EP₄ 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