



EUROPEAN CIVIL AVIATION CONFERENCE

RECOMMENDATION ECAC/24-1 NOISE CHARGES AND REBATES

Whereas according to the ECAC Environmental Policy statement, ECAC was required to “*study the feasibility of stimulating the use of quieter aircraft on European airports through a system of environmental financial measures (including charges and/or taxation), and develop criteria for application of such measures by Member States/European airports ensuring fair competition between equal technology*”,

Whereas the twenty-first Plenary Session (Triennial) of ECAC adopted in its work programme 1998-2000 the development of a transport aircraft noise classification system, for use in calculating noise charges and rebates, as a priority item,

Bearing in mind that economic instruments for noise abatement around airports will be better understood and more efficient, ensuring a better transparency and predictability, if based on common principles,

Noting that in order to stimulate the use of quieter aircraft most transport aircraft noise classifications presently used for the calculation of noise charges will have to be updated before the completion of the Chapter 2 phase-out,

Having regard to ICAO Assembly Resolutions A32-17 (Appendix F), and A32-8 (Appendix H) and ICAO Council Statements to Contracting States on Charges for Airports and Air Navigation Services (Doc 9082/5),

The Conference recommends

Article 1

Definitions

In this Recommendation:

Noise charges: means specific noise levies, related to noise costs, for instance for financing noise mitigation measures and/or for encouraging the use of quieter aircraft.

Noise rebates: according to ICAO principles, charges should be based on underlying costs or should be revenue neutral. Thus, apart from charges directed to specific noise costs, noise charges should be balanced by noise rebates in order to be globally revenue neutral (see **Attachment**).

Perceived noise energies: the noise levels of an aircraft at departure (L_d) and at arrival (L_a) being expressed in EPN decibels (definitions in Annex 16, Volume 1 of the Chicago Convention) and calculated as in Article 4; the related noise energies are equal to 10 antilog L_d and to 10 antilog L_a .

Article 2

Adoption of a common framework for the calculation of noise charges

ECAC Member States should ensure that the necessary steps are taken so that the calculation of noise charges in the airports of their territories are eventually based on the criteria specified in Articles 3, 4 and 5 and explained in the **Attachment**.

Article 3

Proportionality of noise charges to noise impacts

The noise charge for an arrival and a departure should be the sum of two values which vary as the perceived noise energies, as defined in Article 1, at arrival and at departure. Unit noise charges at arrival and at departure should reflect the relative impacts of arrivals and departures for populations around the airport.

Article 4

Characterization of noise levels at arrival and at departure

For the calculation of the perceived noise energies:

- the noise level L_a at arrival is the certificated noise level at approach as defined in Annex 16, Volume 1.
- the noise level at departure L_d is the average of the certificated noise levels at the lateral and at the flyover reference noise measurement points as defined in Annex 16, Volume 1.

Article 5

Maximum variation of noise charges

The ratio of the maximum noise charge to the minimum noise charge corresponding to a given period of time is limited to twenty (20).

Article 6

Information to the Public □

In order to ensure that the concept of noise productivity is well understood, authorities and airports may wish to provide supplementary information about the noise characteristics of aircraft, in terms of noise emissions per passenger or tonne of cargo, particularly for aircraft with a maximum take-off mass above 34 tonnes.

Article 7

Evaluation

An evaluation of the implementation of this Recommendation shall be presented to the next Plenary Session (Triennial) of ECAC.

ATTACHMENT

METHOD FOR CALCULATING NOISE CHARGES AND REBATES

Calculation of noise charge

The noise charge for one arrival and one departure is:

$$C = Ca \cdot 10^{[(La - Ta)/10]} + Cd \cdot 10^{[(Ld - Td)/10]}$$

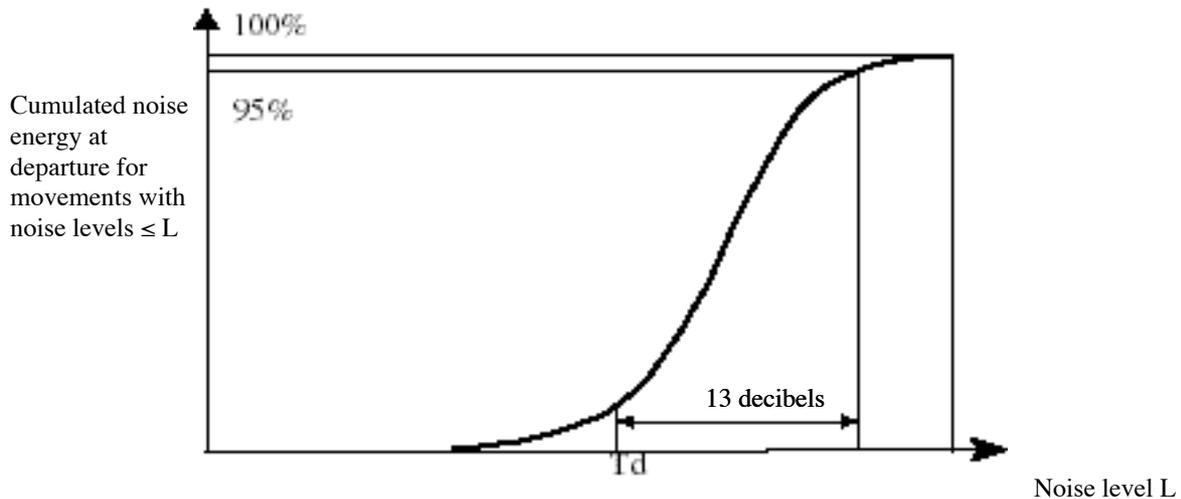
where:

Ca and Cd are the unit noise charges at departures and arrivals for the considered airport¹. They reflect the relative importance of noise emissions at departures and at arrivals for the impacted population;

La is the certification noise level at approach;

$Ld = (Lf + Ll)/2$, Lf and Ll are the certification noise levels at the flyover and lateral measurement points; and

Ta and Td are noise thresholds at departures and at arrivals corresponding to categories of relatively quiet aircraft for the considered airport. These thresholds are fixed around 13 decibels below upper thresholds corresponding to 95 % of the noise energy emitted at the airport as indicated on the graph.



¹ Ca or Cd can be zero.

Calculation of a noise rebate

According to the principle that charges should be based as closely as possible on underlying costs, there should be specific noise charges for financing noise mitigation programmes and other noise charges should be compensated by noise rebates in order to be revenue neutral.

This revenue neutrality can be achieved separately at departure and at arrival. For instance, at departure the noise charge or rebate could be for the aircraft i

$$C_{d,i} = C_d \cdot [E_{d,i} / N \cdot \sum E_{d,j}]$$

where

C_d is the unit charge (or rebate) for departure at the considered airport;

$E_{d,i}$ is the relative noise energy at departure for the aircraft which is considered; and

N and $\sum E_{d,j}$ are the forecast number of departures and the forecast cumulated noise energy at departure during the year which is considered.

$C_{d,i}$ can be positive or negative. In this latter case it is a **noise rebate**. Such incentive schemes with charges and rebates are already operational in several European countries.
