

Procedure for the Calculation of Airplane Noise
in the Vicinity of Airports

RATIONALE

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ABSTRACT

This Aerospace Information Report (AIR) describes procedures for calculating sound exposure levels at ground locations resulting from operations of jet and propeller driven airplanes in the vicinity of an airport. The procedures assume that reference noise and performance data are available for each airplane involved. The fundamental element of the procedures is a method for calculating the A-weighted sound exposure level (SEL) that would be produced, on average, by any specific airplane when performing any specified operation. Procedures are given for calculating sound exposure levels for individual airplane operations and for the average sound level produced by the cumulative effect of a series of different airplane operations, normally expressed in terms of day-night average sound level (DNL) averaged over an appropriate long time period.

The principal purpose of using the procedures recommended in this AIR to calculate contours of equal average sound level is to assist in land-use planning around airports. Contours of equal sound level may be constructed by connecting lines through individual points of constant sound level. While the procedures of this AIR describe the computation of sound levels at any point in the vicinity of an airport, the procedure for calculation of contours is computer-program dependent and is not a part of this AIR.

PREPARED BY
SAE COMMITTEE A-21, AIRCRAFT NOISE

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