



Noise Certification Workshop

Session 2: Aircraft Noise Certification

The ICAO Environmental Technical Manual

The Purpose of the Environmental Technical Manual (ETM)

The Manual's stated aim is...

- to promote uniformity of implementation of the technical procedures of Annex 16, Volume I
- to provide guidance such that all certificating authorities can apply the same degree of stringency and the same criteria for acceptance in approving applications for the use of equivalent procedures.

DOC 9501

- ICAO formally publishes the ETM as DOC 9501-AN/929
- The most recent (second) edition was published in 1995
- A new (third) edition has been approved and will be published very soon

Steering Group Approved Revision

- The Steering Group approved revision (SGAR) includes material which has been approved by WG1 and endorsed by the Steering Group (there have been 8 revisions)
- Its purpose is to make available new information to interested parties as soon as it has been agreed by the working groups, thereby eliminating the delay which would otherwise occur should its publication be limited only to post CAEP meetings
- SGAR/8 is the basis for the 3rd Edition of DOC 9501

It defines an equivalent procedure as...

→ ...a test or analysis procedure which, while differing from one specified in Annex 16, Volume 1, in the technical judgement of the certifying authority, yields effectively the same noise levels as the specified procedure.

It carries a “health warning”...

→ “The material included in this manual is for technical guidance only. The use of past examples of approved equivalencies does not imply that these equivalencies are the only acceptable ones, neither does their presentation imply any form of limitation of their application, nor does it imply commitment to further use of these equivalencies.”

The ETM includes Chapters on...

- Equivalent procedures for all categories of aircraft covered by Annex 16, Volume I
- Evaluation Methods
- Measurement and analysis equipment
- Control of computer software
- Guidelines for certification of tilt-rotor aircraft

Appendices covering...

- Calculation of confidence intervals
- Identification of spectral irregularities
- Adjustment of aircraft noise levels for effects of background noise
- Reference tables for manual calculation of EPNL
- Calculation of reference conditions for noise certification of small propeller driven aeroplanes
- Correction of test data taken at high altitude test sites
- Background information on the guidelines for noise certification of tilt-rotor aircraft

...and (now) an Appendix on Re-certification

- (Noise) re-certification is defined as
“Certification of an aircraft with or without a revision to its certification noise levels, to a Standard different to that to which it was originally certificated.”
- Noise re-certification shall be granted “on the basis that the evidence used to determine compliance is as satisfactory as the evidence associated with a new type design.”

The ETM Appendix on re-certification provides for...

- Criteria for assessing existing approved noise levels (Chapters 3 & 5 or FAR Part 36 Stage 3) as evidence of compliance with Chapter 4
- Guidelines for re-certification of “Chapter 2” aeroplanes to Chapter 4
- Guidelines for re-certification of “modified” aeroplanes

