



Noise Certification Workshop

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SESSION 4: DOCUMENTATION

HISTORY OF NOISE CERTIFICATION DOCUMENTATION

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SUMMARY

This paper addresses the history of the noise certification documentation, starting with the creation of the noise certificate in 1969. Noise documentation has evolved over the years. Some practical problems with the administrative implementation of the noise certificate are highlighted.

1. INTRODUCTION

1.1 Aeroplanes and helicopters built today are required to meet the noise certification requirements as set by the certifying authorities. They are normally based on Certification Standards adopted by the Council of ICAO. These are contained in Annex 16 — *Environmental Protection*, Volume I — *Aircraft Noise* to the Convention on International Civil Aviation. This paper addresses the history and development of the administrative implementation of the noise certification system as addressed in Chapter 1 of Annex 16, Volume 1, Part II.

2. THE BEGINNING OF NOISE CERTIFICATION

2.1 The basis for the process of noise certification as we currently know it was laid in the Special Meeting on Aircraft Noise in the Vicinity of Aerodromes. This meeting took place in Montreal from 25 November to 17 December 1969.

2.2 When reading the report of this meeting¹ it is clear that the intent was to create requirements that should "... broadly, be similar to those in Annex 8 relating to airworthiness certification." This meant that at that moment the focus of noise certification was on the question whether or not an aircraft met the noise standard, and not so much on what the certificated noise levels were. In those days the certificated noise levels were not mentioned on the noise certificate!

¹ Report Of The Special Meeting On Aircraft Noise In The Vicinity Of Aerodromes, 1969, section 3.2.2.2 and Recommendation 3/2

2.3 It was recognized that certain aircraft would only meet the Standards with weight limitation. It was for that reason that it was specified that the document attesting noise certification should specify the maximum take-off and landing weights at which that aircraft met the limits. Also additional modifications, if any, incorporated for the purpose of compliance would be shown on the noise certificate.

2.4 A note in the administration section stated that: "The documents attesting noise certification may take the form of a separate Noise Certificate or a suitable statement contained in another document approved by the State of Registry and required by that State to be carried in the aircraft."

3. FURTHER DEVELOPMENTS

3.1 In 1976 the actual noise levels (that belong to a particular maximum take-off mass and landing mass) were added to the information on the noise certification document.² In 1993 Engine and Propeller data were added to the list of items to be included in the noise certificate.³

3.2 Over time this has evolved into a situation in which noise certification documents were issued at various different masses, not necessarily the maximum mass at which compliance had been demonstrated. The information on the configuration was often stated in a separate noise certificate and sometimes contained in the Airflight Manual (AFM).

3.3 At the same time noise certification data was more and more used by authorities for the purpose of controlling the noise climate around airports. The role of noise documentation moved from not only showing compliance but also to providing information on the actual noise levels.

4. PRACTICAL PROBLEMS

4.1 Although the majority of noise documents are correct, the lack of standardization in noise certification documentation has led to practical problems. Different authorities had different interpretations as to what should be mentioned on the noise documentation. This led to difficulties in the use of the noise documentation and may also have led to errors in the information on some documents.

4.2 Examples of problems are: listing the noise limits on the noise certificate instead of the certificated noise levels, missing information, unclear referrals to the AFM, inclusion of many (sometimes several hundreds) different noise configurations in the AFM .

4.3 It was unclear which information should be on board of the aircraft. Should all the information that was to be in the noise document also be on board of the aircraft or would it be sufficient to have only the statement that the aircraft complied with the noise certification requirements on board and could other information (including the actual noise levels) be kept elsewhere?

² CAN 4 report, section 2.5.1 and recommendation 3/1

³ CAEP 2 report, section 3.9, Attachment 3-A-1

4.4 Another development was the phenomenon of “Dual certification”. This is related to a situation in which more than one set of certificated noise levels were applicable to the same aircraft.

4.5 A special problem was the issue of temporary changes to aircraft. Formally the standard has no flexibility when, for instance, an aircraft has to operate for maintenance reasons in a deviating configuration for a short time. The effect on noise certificated levels would have to be determined and, if any, the noise documentation would have to be changed. Some States had a policy to allow temporary changes for a limited period of time (maximum 90 days) but this was not addressed in the Annex 16.

5. CONCLUSION

5.1 Since 1969 the administrative aspects of noise certification documentation have changed. There was a need to clarify and standardize the administrative system.

5.2 In 2001 CAEP/5 decided to include a work item on noise documentation to investigate the administrative systems and possibilities for standardization.

5.3 This work has led to proposals for clarification and standardization that were in CAEP/6 in February 2004.

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