

Noise Measurements for Acoustic Development and Certification: Flight Test Conditions.

Osmin Delverdier

AIRBUS France, Integration Test Centre
316 Route de Bayonne P.O. BOX M6332
31060 TOULOUSE Cedex 9, FRANCE
e-mail: osmin.delverdier@airbus.com

Abstract: Acoustic flight tests for development and certification on aircraft families are performed for a long time in Airbus (over 30 years). These tests have a priority interest for AIRBUS due to noise pollution toward community; the noise measurements have to demonstrate the compatibility with the nuisance limitation of the regulations. They are operated according to the specific test program and complying to the Official regulation including ICAO annex 16, JAR 36, EASA CS-36 and FAR part 36.

Flights program conditions and Test means are necessary to perform the noise measurements. The schedule of flights according to the test program is Take-off flyovers and Approach conditions; for the both, aircraft have to comply with specific configurations (landing gears re-tracted, slats, flaps, engine rating...). Hardware point of view, dedicated test sites and test means are recommended to carry out acoustic measurements. Two geography bases are used as test sites today due to meteorological conditions and environment facilities: TARBES in France and MORON in Spain. Noise measurements system is located on the ground at stringent locations. Noise data are gathered by several beacons located on ground and sent via radio modem to a "noise" computer. From this later, results of global noise measurements according flight configurations are extracted. Meteorological and trajectography data are also necessary for taking into account climatic conditions (T°, H%, wind) and aircraft flight path positions during the tests.