

Acoustics Capabilities

AeroAcoustics has been conducting acoustic tests nationally and internationally for over two decades. We offer state-of-the-art systems to facilitate rapid and accurate results. Select areas of expertise in acoustics follow.

FAR Part 36 Certification and Flyover Noise Tests

We have completed over 150 FAA certification programs and foreign regulatory approvals for all aircraft categories.

- Appendix B for Transport Category Aircraft
- Appendix G for Small Aircraft
- Appendix H for Large Helicopters
- Appendix J for Small Helicopters

Our staff members include FAA approved Acoustical and Flight Analyst Designated Engineering Representatives (DER).



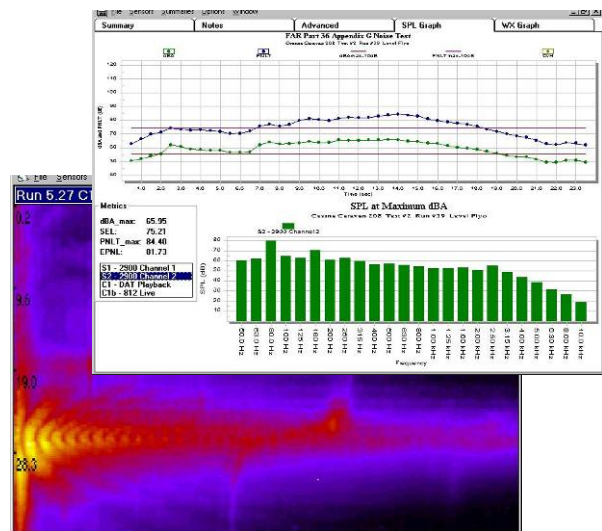
Instrumentation

Our state-of-the-art instrumentation is optimized for quick setup and efficient, quality operations. It includes all acoustic and meteorological instrumentation needed for any test type. Proprietary software for in-field noise metric computations permits accelerated compliance assessment. We can also provide data acquisition systems on-board the aircraft—optimized to present real time data pertinent to a test type. These systems are tightly integrated to facilitate rapid and accurate tests.

Analytical Methods for Equivalencies and No Acoustic Change

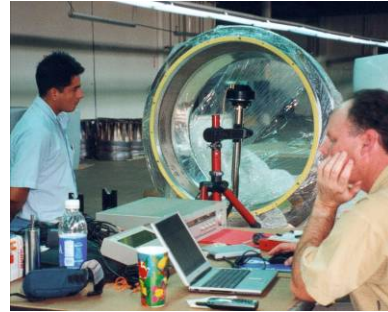
In many cases there is no need to conduct an expensive test. We can assist you in determining whether a test is required, and if not, prepare compliance with “no acoustic change” requirements of FAR 21.93(b).

The noise impact from aircraft or engine configuration changes can be assessed using prediction methods that isolate contributions from component sources, such as the airframe or jet noise.



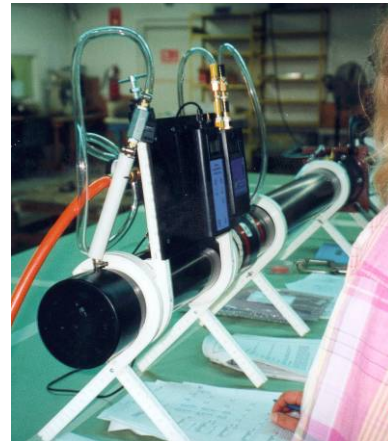
Impedance Tests of Acoustical Material per ASTM 1050-90

Using innovative analysis techniques, automated testing, ideal for Quality Control, allows specification of original or replacement materials for acoustical linings. In situ tests on aircraft or on component or assembled parts permit quick field assessment of impedance.



Flow Resistance Tests of Acoustical Material per ASTM C522-87

Fully automated testing allows us to determine the airflow resistance of materials, such as acoustical lining face-sheets. Tests can be conducted for certification, for research and development purposes, or as a Quality Control tool.



Differential GPS

An important aspect of FAR Part 36 flyover noise tests is to determine aircraft space position. Unlike others, our FAA approved DGPS system determines aircraft space position in real time (no post test processing required), permitting quick completion of tests with more accurate results.



Static Noise Ground Tests

Conducting static noise tests at outdoor stands is a potentially important element of noise certification for a family of aircraft. Our test experience, along with our static-to-flight noise prediction software, approved by the FAA, reduces the amount of time required to achieve regulatory approval.

Community Noise

Extending from aircraft and airports to wind turbines, assessing compliance with community noise standards is achieved using proprietary software and industry accepted tools such as the INM. Aircraft noise abatement departure and landing procedures can be recommended and documented in industry standard formats. Wind turbine noise measurements are conducted to the latest International Electrotechnical Commission (IEC) standard.



FAR Part 36 Reference Performance

An integral part of noise certification is the aircraft performance during takeoff and landing. Noise data acquired during tests is normalized in order to determine the certification noise level when the aircraft is taking off or landing at these reference aircraft performance conditions. AAI utilizes proprietary FAA approved software to develop performance for small and large transport, helicopters, and airplanes.



Noise Suppression Hardware Technology

Proprietary methods are utilized to develop hardware for aircraft/engine noise attenuation and suppression.

Hardware is targeted at specific noise components such as acoustical linings for fan/turbine noise sources, mixing devices for jet noise, and performance enhancements for aerodynamic noise sources.

