

Helicopter Noise

Since more than a decade, Anotec has been involved in helicopter noise projects, both for research and certification. Anotec has all capabilities to provide you with a turn-key solution for the noise certification of your helicopter. Extensive flight test campaigns have been performed with a variety of helicopter models. We have available a comprehensive noise measurement system which enables us to capture in detail the specific characteristics of the highly directive helicopter noise. With our in-house developed state-of-the-art helicopter noise prediction models we can support our customers in all noise related challenges they may face, from the low-noise design of their rotorcraft, the development of low-noise flight procedures, to noise impact studies of heliports.

Flight Tests

We have performed flight tests for a wide range of purposes:

- Noise certification in accordance with **ICAO** Annex 16 Ch. 8 & 11.
- Verification of helicopter noise prediction models
- Generation of a comprehensive database for noise modelling
- Verification of engine noise reduction technology
- Verification of active noise control technology
- Determination of noise during hover
- Feasibility studies
- Interior noise

All these projects have relied on the Anotec mobile laboratory, consisting of high-end measurement systems. Our multiple noise stations have been designed for fast field deployment and can be used in microphone grids covering hundreds of meters, without cables. This allows us to measure in a cost-effective manner the highly directive noise characteristics of helicopters.

Low Noise Design

For rotorcraft our in-house Helicopter Noise Tool Chain (**SARA**) and its state-of-the-art modules can be used to design optimum noise solutions for the main and tail rotor and for the engine. If needed a multi-disciplinary design optimization (i.e. beyond only noise control) can be conducted with our specialized rotorcraft technology partners.

Low Noise Flight Procedures

One of the most promising ways to reduce helicopter noise impact on the ground is by means of dedicated low-noise flight procedures. With our in-house developed tools and our extensive noise databases, we can design these low-noise procedures, tailor-made for your specific situation. Flight tests can be performed to validate these procedures or to gather additional information required for fine-tuning.

We can provide training for pilots to raise their awareness and to accurately fly the designed low-noise procedures.

Impact Studies of Heliports

We have several state-of-the-art helicopter noise models available to perform noise impact studies of heliports. These models use databases containing actually measured noise data for a wide range of helicopters and flight procedures. At Anotec these models are used by aerospace engineers and aircraft noise experts, thus ensuring unrivaled accuracy.

In specific situations it is considered appropriate to validate the predicted noise impact of a heliport by means of measurements. To this end we have available our **IBANET** noise and track monitoring system, that can be deployed to perform continuous measurements during short or longer periods.

