

Appendix B - Quiet Technology

Helicopter Quiet Technology

Helicopter manufacturers are developing new helicopter technology that generates lower noise emission levels. These new technologies address methods to reduce the tail rotor noise levels. Eurocopter currently offers two helicopters with lower noise emissions.

EC 130 B4

The EC 130 B4 single engine helicopter is the new 7-8 seat Eurocopter product. External noise emissions are 8.5 dBA lower than the maximum level authorized by the ICAO. This is achieved by the low noise "Fenestron" and the automatic control of the rotor RPM, a function which automatically optimizes the overflight noise signature without operational limitations.



EC 135 P1/T1



The EC 135 P1/T1 twin engine helicopter is capable of carrying 1 pilot and 6/7 passengers. External noise emissions are 7dBA lower than the maximum level authorized by the ICAO. Newest technology is applied such as a bearing-less main rotor (BMR), high performance main rotor blades and low noise ducted tail rotor (Fenestron).

These helicopters are estimated to be about 5 dBA quieter than the current Aerostars that are used by all of the major tour operators in Juneau. For example, if a site is currently exposed to an average maximum noise level of 60 dBA with the current technology, it would be about 55 dBA with the new technology. The 5 dBA improvement in single event noise level would also result in a reduction in other metrics as well, including the time above level and the DNL noise level. The audible duration of each event would be expected to be reduced by about 30%. The DNL noise level attributable to helicopter operations would also be about 5 dBA less.

This reduction would make a noticeable difference, but far less than the elimination of noise that would occur for most areas of Juneau with alternate heliports.

Flightseeing Aircraft

New, quieter technology for floatplanes was also evaluated. In general, the new Caravan turbo prop floatplane is estimated to be about 5 to 7 dBA quieter overall than the current fleet of Otters and Beavers. This reduction in noise is primarily associated with departure noise, which is the major source from these aircraft.

On August 23rd we measured the Caravan against Otters and Beavers. All the planes took off from the Juneau Harbor and flew the same path down the channel. The measurements showed that the Caravan was 7 dBA quieter than the Otters and Beavers when it followed normal flight procedures. When the Caravan followed a noise abatement flight path (lower climb rate, similar to the existing Otter climb rate), the noise levels were 11 dBA quieter than the current technology. The Caravan also has a more broad based noise spectra that is less annoying than the pure tones associated with the Otters and Beavers. At the Sandy Beach monitoring site, the Otters and Beavers averaged 73 dBA. The Caravan, without noise abatement, was 66 dBA. With noise abatement, the noise level was 62 dBA.