

Certification provisions prescribed in 14 CFR part 36, and listed in AC 36-1F, since it is possible for aircraft to be reconfigured and flown differently than AC 36-1F. The FAA should make sound measuring equipment available at Las Vegas and Grand Canyon for determining actual flyover sound levels in the tour "cruise configuration." If Category A aircraft can be retrofitted to Category B it should be encouraged since such a conversion would be more easily implemented than direct conversion to Category C.

Clark County (62) states that the NPRM will unreasonably and arbitrarily burden air tour operators and the Las Vegas tourist economy. However, if the FAA based its categorization of aircraft on noise performance, rather than on certification, and provided options for compliance flexibility, there would be significantly less burden on tour operators, airborne visitors, and the economy of the Las Vegas area. Clark County states that it conducted a study of actual ambient and aircraft noise in GCNP in an attempt to validate FAA's methodology and found that using certification data, as a basis does not accurately represent aircraft noise levels in the GCNP, because it does not account for actual atmospheric and operational conditions in the GCNP. As a result, the FAA has placed aircraft in the noisier A or B categories that should belong in the B or C categories. Clark County states that the NPRM provides no means for operators to comply with the performance standards through the use of retrofitted equipment, quiet operating procedures, or other enforceable steps to reduce noise. This is at odds with the federal government's increasing attempt to use performance standards and provide compliance flexibility to reduce regulatory burden.

An airline transport pilot (40) states that the noise propagation of a propeller driven airplane is largely dependent on the design and speed of its propeller. Design and speed are responsible for a greater share of the decibel level discernible in the hearing range than exhaust output, wing shape, loading of the airplane, cowl and airframe vibration, or accessory operation (*e.g.*, flap extension, gear drag and parasitic friction). Since the design and speed factors affect all aircraft operating in the Grand Canyon a simple change, for example, operating a Cessna 207 at 2300 RPM instead of 2400 or 2500 RPM, can affect whether an aircraft should be placed in one category or another, if the categories are defined by noise values.

Lake Mead Air (26, 53) states that the decibel range for quiet Category C helicopters starts at 80 dB whereas the

fixed-wing threshold is 69 dB. If 80 dB meets Category C standards for helicopters it should also meet Category C standards for fixed-wing.

Eagle (54) states that its F27 aircraft would not be covered under the NPRM. Size (48 passenger), noise tests, and decibel adjustments do not take the F27 into consideration.

Professional Helicopter Pilots Association (85) states that the existence of aircraft capable of achieving the lower sound levels is still in the developmental stage such that only one manufacturer has any such helicopters available which have the performance capability for air tour operations. As a result the NPRM is premature and should not be implemented until technology improves.

The Grand Canyon River Guides (GCRG) (50) state that helicopters, which are generally accepted to be the most obnoxious of aircraft and carry fewer people, should not fall into Category B, but should be put into Category A.

Twin Otter (45) states that it is appropriate to take into account both the flyover sound level and aircraft passenger seating capacity in establishing which models qualify as Category C aircraft because a single Vistaliner replaces two flights with the nine passenger Cessna 402/Piper Chieftain, nearly three flights in the seven passenger Cessna 207 and four flights in the 4-5 passenger Bell Jetranger.

Twin Otter adds that the Beechcraft C-99 and the Piper Chieftain could be retrofitted with four bladed props, as have the Vistaliners, thus converting them to Category C aircraft.

Air Vegas (57) believes that its 15 Beechcraft C-99 aircraft should be deemed Category C since it utilizes the same basic power plant, the PT-6, as the Caravan and the Vistaliner, and has been modified for sightseeing operations to include extra windows. The average price for these aircraft, configured to meet Air Vegas specifications, is in excess of \$1,300,000. These aircraft are adequately available and have proven to be cost effective. Furthermore, the FAA studies, which placed the Beechcraft C-99 into Category B, were based on max RPM level 2200 RPM. If the RPM is reduced to 1900 (a reduction of 14 percent), there is an equal reduction of 14 percent in the dB level of the propeller, thus 68.2 dB. Air Vegas operations specifications require pilots to maintain propeller RPM at 1900 and with this power setting a Beechcraft C-99 is well below the Category C cutoff of 78 dB for a 15 passenger aircraft. Air Vegas believes there should be an

incentive for decreasing the percent of time audible for the aircraft. Because of the higher speeds achievable by the Beechcraft C-99, as compared to the Vistaliner, the C-99's have an impact for less time.

Scenic Airlines (74) states that the deHavilland DHC-6-300 Twin Otter with quiet propellers and the Cessna 208 (A & B models) must be classified as quiet aircraft technology (Category C). Furthermore, in developing Sound Exposure Level (SEL) dB limits, consideration must be given to the speed of an aircraft. Since disruption of natural quiet is measured in terms of "Time of exposure" the faster of two aircraft with the same dB output should be shown as the quieter.

The Grand Canyon Trust (72) states that by defining the aircraft categories in terms of sound exposure level per passenger seat, the FAA obscures the fact that some Category C aircraft (*e.g.*, the Vistaliner) are noisier than some Category A or B aircraft. The Trust further states that unless a cap is established on the number of operations Category C can fly, ultimately there will be no advantage to conversion to certain Category C aircraft. Therefore, the Trust's additional comments assume that such a cap will be implemented.

Clark County (62) states that the FAA should set default noise levels and GCNP noise categories for the aircraft operating in GCNP using methodologies that accurately reflect conditions in GCNP and should validate the noise levels through field-testing. If this were done, some aircraft, such as the Beechcraft C-99 would actually meet Category C standards.

Eagle (54), King (56), and Vision (61) state that the FAA's formulation of the aircraft categories in the NPRM is arbitrary and capricious for the following reasons:

(1) The FAA fails to justify its placement of the dividing line between categories and has not consulted operators on this issue before establishing the categories.

(2) Use of part 36 test results is not appropriate.

(3) The proposed 4-dB distinction between Category A and Category C is inappropriate since it attempts to draw distinctions that cannot be discerned by most humans.

(4) Distinctions between categories fail to account for the effect of speed on aircrafts' "noiseprint."

(5) Tests that serve as a certification basis do not simulate actual operating conditions.

(6) Categories discriminate against propeller-driven airplanes.