

(7) Proposed Category C could be met by only two types of existing aircraft, one of which is unavailable while the other is prohibitively expensive.

Bell Helicopter Textron (91) states that the FAA's noise analysis incorrectly assumed that there is no lateral attenuation of aircraft sound. The effect of this false assumption is great considering that if the sound exposure levels attributed to aircraft were even 5 dB less, then up to six additional aircraft would be in compliance with the proposed Category C noise efficiency criteria.

#### *FAA Response*

While this SNPRM replaces the three noise efficiency categories proposed in the Noise Limitations NPRM, the currently proposed quiet technology designation is based upon the same rationale and criteria. The FAA criteria for "reasonably achievable" quiet technology requirements include what is technologically practicable, economically reasonable, appropriate to the aircraft type design, and, in the final analysis, environmentally beneficial. The FAA also set forth the following attributes for any quiet technology designation. Specifically, the designation should:

- Be based on aircraft noise certification (14 CFR part 36);
- Judge fixed- and rotary-wing aircraft on a common basis;
- Correlate with aircraft performance and operation at GCNP;
- Offer basis for incentives; and
- Be manageable.

Noise levels obtained from aircraft noise certification represent the highest quality of data available. The flight tests are conducted under controlled conditions with an FAA representative or designee in attendance to witness the test setup and test activities. Data obtained during these flight tests are corrected to standard reference conditions as prescribed in 14 CFR part 36. The certification tests are designed to acquire noise levels representing the noisiest flight configurations for small propeller-driven airplanes and helicopters. FAA believes that this is appropriate for the GCNP situation as the certification flight configurations are also the noisiest configurations that could be used over the park. Thus, the sightseeing aircraft can be judged equally, fairly, and without the concern that the noise levels are undervalued.

The airport community has many years of experience using the certificated noise levels. FAA publishes these levels in Advisory Circular (AC) 36-1, "Noise Levels for U.S. Certificated and Foreign Aircraft." The current

version of this AC is 36-1G, dated August 27, 1997. These data have been used to establish use restrictions, curfews, and noise budgets at some airports in the country. The certificated noise levels are not only available in the advisory circulars, which are updated and published periodically, but the levels are readily available to the aircraft owners from aircraft flight manuals (AFM).

The quiet technology designation based on certificated noise levels is proposed not only because of the long-standing precedent, but also because it eliminates the need for someone to make such measurements in the field. Years of experience with using data obtained from airport noise monitoring systems have shown that noise levels obtained under uncontrolled conditions are highly variable. This problem can only be overcome by obtaining very large samples of measured data to reduce the statistical uncertainty. Thus, FAA believes that a quiet technology designation based on measured data taken at GCNP would be economically unreasonable and susceptible to statistical error.

Unfortunately, there is no single method applicable to all aircraft for determining the certificated noise level. Depending on date of application for type certificate and whether the aircraft is a helicopter or small propeller-driven airplane, the noise level could have been obtained from one of four different tests. With measurements taken for different flight operations, at three different altitudes, and in three different units of noise, it is not possible to directly compare certificated noise levels obtained for helicopters with those of small propeller-driven airplanes. As reported in the study, "Methodology to Categorize the Noise Efficiency of Air Tour Aircraft in GCNP," FAA developed a procedure for: (1) extrapolating from the controlled conditions of a certification test to the operating conditions at GCNP and (2) converting levels to a common noise unit, thus making it possible to judge airplanes and helicopters on a common basis under conditions that pertain to air tour operations over GCNP. As a result of the study, FAA found that it is possible to extrapolate from the certification conditions applicable to helicopters and small propeller-driven airplanes to produce a consistent set of noise levels under conditions similar to those at GCNP.

FAA finds that the noise efficiency concept, which was proposed in the Noise Limitations NPRM and re-proposed in this SNPRM, albeit modified to designate quiet technology,

exhibits all of the desired attributes for the quiet technology designation. The concept is technically sound as it takes into account aircraft design, flight configuration, acoustic characteristics, productivity, and economic reasonableness. As the concept is based upon the certificated noise levels, the FAA is able to judge the noise of the commercial sightseeing aircraft consistently, fairly, and without the additional cost and technical problems found in field monitoring. In concert with related actions with respect to the airspace and air tour operations, the quiet technology designation can be an effective means toward substantially restoring natural quiet at GCNP.

The FAA notes that this SNPRM is essentially a definition of quiet technology taking into account the technological capabilities of aircraft available in the used marketplace, including the existence of aircraft type design modifications to reduce noise levels. As this action merely defines quiet technology but does not impose any requirements, the FAA does not expect any economic impact on the operators of GCNP air tours. The FAA seeks comments before moving to future related rulemaking in consultation with the NPS and in coordination with an advisory group composed of general aviation, commercial air tour operations, environmental concerns, and Native American interest.

#### *5. Phase Out of Less Noise Efficient Aircraft*

A number of commenters addressed the proposal to phase out noisier aircraft to further reduce noise impacts in GCNP. As described in the Noise Limitations NPRM, less noise efficient aircraft would have been gradually phased out starting in the year 2000 with the phase out of Category A aircraft and continuing through to the end of 2008 at which point all Category B aircraft would be phased out and only Category C aircraft would remain. The phase out would have limited future use of less noise efficient aircraft in GCNP and would also have provided an incentive for the use of the most noise efficient aircraft.

This SNPRM only proposes to define the quiet aircraft technology designation. The quiet technology designation is predicated on the notion that the use of larger, relatively quieter aircraft (on a per seat basis) is helpful in reaching the goal of substantial restoration of natural quiet through a combination of reduction of noise at the source and reduction in the number of tour operations. Under the provisions of section 804 of the Air Tour Act, all