

STATEMENT OF DALE E. MCDANIEL, DEPUTY ASSISTANT ADMINISTRATOR FOR POLICY, PLANNING AND INTERNATIONAL AVIATION, FEDERAL AVIATION ADMINISTRATION, BEFORE THE HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY, SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS, CONCERNING RESEARCH AND PLANNING ACTIVITIES TO REDUCE AIRCRAFT NOISE. September 27, 1990.

Mr. Chairman and Members of the Subcommittee:

I welcome the opportunity to appear before you today to discuss our research and planning activities to reduce aircraft noise. Joining me today is James Densmore, Director of the Office of Environment and Energy.

The FAA recognizes that aircraft noise is a concern in many communities throughout the United States. We estimate that 3.2 million people currently reside in areas where noise levels exceed the standard for compatible land use. This represents a significant decrease from 1970, when an estimated 7 million people in the United States lived in such areas. We believe that by the year 2010 this number will decrease to just over 1 million.

These dramatic gains result almost exclusively from the introduction of quieter aircraft. We completed the phase out of the noisiest, Stage 1, aircraft in 1986. The aviation industry is well underway in transitioning from Stage 2 to Stage 3. Already 40 percent of the U.S. fleet is Stage 3. When an all Stage 3 fleet is achieved existing technology will have been exhausted. That technology was developed in FAA and NASA supported programs

ten to twenty-five years ago. There is no proven Stage 4 technology, but research continues.

Secretary Skinner has pledged Federal leadership in finding and implementing workable solutions to the aviation noise problem. As a result, the FAA and NASA Administrators have agreed to develop a cooperative noise reduction technology development program. This is rapidly taking shape as a multi-year, comprehensive effort, primarily directed at higher bypass ratio engines and at lower-drag aircraft on which to install them.

Realistically, even if this research is successful, we cannot expect quieter aircraft in the fleet until well into the next century. That means communities must find new and creative ways to better manage land use around airports, while avoiding operational constraints which limit the capacity of existing airports and threaten our ability to add new capacity.

While we will continue to work with NASA and others, it should be made clear that it will not be easy to develop significantly quieter aircraft engines. Further noise reduction is technically a very difficult challenge. Our research emphasis will be placed on reducing fan noise generation since future engine ducts are expected to have less volume available for inserting noise abatement materials. Research into lowering combustion noise will also be given a high priority since new combustor designs are

expected to have both higher temperatures and higher velocities. We will also be exploring ways (both design and materials) to reduce airframe noise by lowering drag. The benefits to be gained are two fold, lower drag aircraft will use less thrust and thus both reduce engine noise and improve fuel economy.

Technical planning is already underway and studies have been initiated to evaluate the limits of current technology. Further noise reduction presents a difficult challenge. However, most experts agree that significant results are attainable.

In light of concerns raised by EPA, as well as members of this Subcommittee in your April oversight hearing, with the DNL metric, we awarded a contract in June of this year to examine the possible need for supplemental measures. In addition, we have agreed with EPA that five long-term issues need further study. They are:

- o the extent of impacts outside 65 Ldn that should be reviewed in an environmental impact statement;
- o the manner in which noise impacts are determined, including whether aircraft noise impacts are fundamentally different from other transportation noise impacts;
- o the manner in which noise impacts are described;

- o the range of FAA-controlled mitigation options (noise abatement and flight track procedures) analyzed; and
  
- o the relationship of the Airport Noise Compatibility Program (Part 150 process) to the Environmental Impact Statement (EIS) process, including ramifications to the EIS process if they are separate, and exploration of the means by which the two processes can be handled to maximize benefits.

In addition to EPA, we will be working closely with DOD, HUD, VA, Justice and CEQ. A copy of the June 15 letter from the FAA Deputy Administrator to the EPA Deputy Administrator outlining the scope of the agreement between the two agencies has been provided to Subcommittee staff. The letter also outlined several interim measures pending the results of the long-term study. Significant among them are the inclusion of single event analysis in Draft or Final EIS's for several airports, including Baltimore-Washington International. The letter also detailed the types of information to be included in a single event analysis.

We still believe that DNL is the best available indicator of aviation noise annoyance. It has proven remarkably successful since being adopted ten years ago as the national standard. But if there are changes to that standard which would improve its usefulness that is even better. One concern, though, is that we

not move away from a standard approach to a series of different measures at individual airports.

In addition to our cooperative noise technology program with NASA and our new working agreement with EPA, the FAA Office of Environment and Energy (AEE) is actively involved in initiatives for aircraft noise abatement. By means of development of advanced methodologies for the assessment of environmental impacts, AEE serves as the FAA's technical focal point for analysis, evaluation, policy, training, research and engineering on aviation-related environmental matters. Through the continuous support and improvement of computer tools, such as the Integrated Noise Model (INM), we are able to remain in the forefront of the state-of-the art of airport noise analyses. Improvements to INM, which has been shipped to over 600 users in 30 countries, include those in speed, operation, census interface, and graphical displays.

AEE is also responsible for insuring compliance with the National Environmental Policy Act of 1969 as well as establishing technical noise standards by providing policy and technical guidance to our Aircraft Certification Directorates. Funding through AEE to the Transportation Systems Center, a Department of Transportation engineering systems facility in Cambridge, Massachusetts, is used in part to evaluate the extent to which aircraft manufacturers are incorporating existing noise abatement technology in current

production aircraft. To ensure that noise data analysis is done in accordance with FAA regulations, AEE also provides funding for the validation of the noise certification data analysis procedures used by aircraft manufacturers and acoustical consultants. Attached to my prepared statement is a listing of all of our RE&D noise related projects funded since fiscal year 1988 to date.

In addition to our research efforts, we also provide funding for noise abatement programs. Since the authorization of the Airport Improvement Program (AIP) in 1982, over \$26.3 million has been granted to airport sponsors to develop noise compatibility plans and \$848.6 million to carry out recommendations in the plans. As you know, under AIP, a minimum of 10 percent of available funds is set aside for noise compatibility planning and program implementation. The largest share of these funds is used for acquiring noise impacted land adjacent to airports. The other major implementation strategy is soundproofing of schools and residences.

Finally, Mr. Chairman I would like to update the Subcommittee on the status of RE&D Advisory Committee Noise Working Group. As you will recall, in April during your oversight hearing, Mr. Del Balzo, the Executive Director for System Development and I were asked about the formation of an advisory committee on airport noise abatement. The RE&D Advisory Committee has responded with the formation of the Noise Working Group (NWG). The NWG is

chaired by Mr. Jonathan Howe of the National Business Aircraft Association (NBAA). Other members are Seig Poritzky, Airport Operators Council International; David Hilton, Gulfstream Aerospace Company; Norris Haight, Douglas Aircraft; John Little, Boeing Aircraft; and Jim Muldoon, New York/New Jersey Port Authority. Its first meeting, to develop a charter and organize an agenda, is scheduled for November 5 at the NBAA office, here in Washington, D.C.

In closing Mr. Chairman, I would like to reemphasize the FAA's commitment to an aggressive and proactive research program for aircraft noise abatement. While this is only my second appearance before you, I am aware of this Subcommittee's longstanding support for our research, engineering and development programs, and I would like to thank you. We look forward to a continued close working relationship with the Members of this Subcommittee and its staff as we address the many difficult issues involved in abating aviation noise.

That completes my prepared statement. We would be pleased to respond to any questions you may have.