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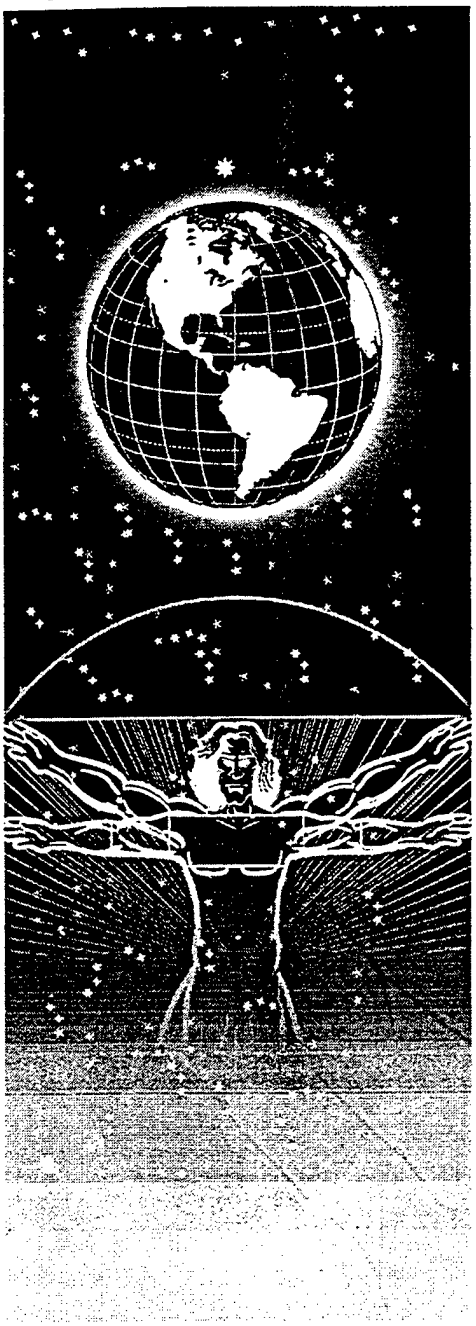

UNITED STATES AIR FORCE
ARMSTRONG LABORATORY

Federal Interagency Committee on Aviation Noise: 1994 Annual Report

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December 1997

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This technical report has been reviewed and is approved for publication.

ROBERT A. LEE
Chief, Noise Effects Branch

FOR THE DIRECTOR

LARRY T. KIMM, MAJOR, USAF, BSC
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13. ABSTRACT *(Maximum 200 words)*

The Federal Interagency Committee on Aviation Noise (FICAN) was formed in 1993 to provide forums for debate over needs for future aviation noise research and to encourage new development efforts in this area. All Federal agencies concerned with aviation noise are represented on the Committee, including the Department of Defense, the Department of the Interior, the Department of Transportation, the Environmental Protection Agency, the National Aeronautics and Space Administration, and the Department of Housing and Urban Development.

FICAN's 1994 Annual Report provides information on FICAN activities during calendar year 1994, including: four FICAN meetings, publication of a Report on Aviation Noise Research Conducted by U. S. Federal Agencies, a public forum, and attendance and staffing of an exhibition booth at the Third Annual Airports Council International - North America Conference.

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EXECUTIVE SUMMARY

The Federal Interagency Committee on Aviation Noise (FICAN) was formed in 1993 to provide forums for debate over needs for future aviation noise research and to encourage new development efforts in this area. All federal agencies concerned with aviation noise are represented on the Committee, including the U.S. Army, the U.S. Air Force, the U.S. Navy, the Department of Interior, the Department of Transportation, the Federal Aviation Administration, the U.S. Environmental Protection Agency, the National Aeronautics and Space Administration, and the Department of Housing and Urban Development.

To help coordinate ongoing and future federal initiatives, FICAN meets regularly and holds additional forums to obtain broader input from the public at large as well as from interested members of the technical community.

The Committee's activities in 1994 included:

- four FICAN meetings, held in November (1993), March, July, and October. The first meeting primarily addressed the administrative issues presented in the FICAN Letter of Understanding, signed by all member agencies; the second meeting focused on the research report and plans for the public forum; the third meeting was held immediately after the public forum, and thus addressed the issues raised at the forum; and the fourth meeting focused on the annual report (this document) and issues related to aircraft noise in parks and wilderness areas.

- publication of a *Report on Aviation Noise Research Conducted by U.S. Federal Agencies*, June 1994. The report presents information on the research programs underway at FICAN member agencies, including information on individual projects.

- a public forum, held in Atlanta, Georgia, 27 July 1994. The forum was held for a full day, and included presentations by FICAN members on the aviation noise research programs at federal agencies, as well as dialogue between researchers and the audience. Approximately 75 people attended the forum.

- attendance and staffing of an exhibition booth at the Third Annual Airports Council International-North America Conference, Toronto, 25-27 September 1994. FICAN's technical contractors attended the conference to distribute the research report and to discuss federal noise research with conference attendees.

At the conclusion of its first year, FICAN makes the following findings and recommendations:

- Interagency communication between researchers is worthwhile for a number of reasons: FICAN member agencies have very different missions, and it is important for researchers to understand individual agency goals and objectives in their research programs; little opportunity is afforded agency researchers to discuss the projects ongoing at their own or other agencies; interagency participation has great potential to

reduce or eliminate redundancy of research, to provide for increased collaboration, and to pool the talents of various agency scientists, and thus to result in more efficient use of federal funds. FICAN intends to meet quarterly in 1995.

- The public forum is a valuable mechanism for soliciting input from interested members of the aviation profession and community members. FICAN has taken action on several issues raised at the public forum, namely: FAA has initiated an assessment of general aviation noise reduction research, member agencies have outlined their research and policy procedures more clearly, FICAN has invited the National Institutes of Health (NIH) to participate in its meetings and join FICAN, and FICAN has developed a liaison with the FAA's Land Use Compatibility Working Group. FICAN intends to hold another public forum in 1995.

- FICAN intends to publish a brochure describing its purpose and scope, as well as its activities.

- FICAN has recommended the formation of a working group of the Acoustical Society of America to be tasked with developing a standard for predicting noise-induced sleep disturbance.

- FICAN members are working with researchers to develop individual agency priorities for research to address issues regarding overflight noise in parks and wilderness areas.

1. INTRODUCTION

The Federal Interagency Committee on Aviation Noise (FICAN) was formed in 1993 to provide forums for debate over future research needs to understand, predict, and control better the effects of aviation noise, and to encourage new development efforts in these areas.

This report summarizes the work accomplished by the Committee during 1994 (beginning with the first FICAN meeting in November 1993).

1.1 Background

In 1992, the Federal Interagency Committee on Noise (FICON) published its findings in a report entitled *Federal Agency Review of Selected Airport Noise Analysis Issues* (FICON, 1992). Among its findings, the Committee identified a need to increase research on the basic elements of aircraft noise assessment methods including (1) a reexamination of Day-Night Average Sound Level (or DNL) as the primary metric for describing aircraft noise, (2) an evaluation of the dose-response relationship between DNL and its effect on people (quantified as percent of people highly annoyed), and (3) the appropriateness of the noise criteria used to define compatibility with different land uses.

To foster the research, FICON recommended that a new federal interagency committee be formed with a mandate to provide forums for debate of future research needs and to encourage new development efforts in these areas. Specifically, the FICON report stated that "a standing federal interagency committee should be established to assist agencies in providing adequate forums for discussion of public and private sector proposals, identifying needed research, and in encouraging the conduct of research and development in these areas" (FICON, 1992).

1.2 FICAN Members

Each of the federal agencies conducting significant research on aviation-related noise is represented on FICAN. In addition, other agencies that are not currently conducting research but have broad policy roles with respect to aviation noise issues (such as HUD and EPA) are represented on the committee. The FICAN membership list is presented in Exhibit 1.

Participating member agencies have signed a Letter of Understanding, which defines the purpose, scope, membership, process, and products of FICAN, and formally documents the commitment of the participating agencies. This Letter of Understanding is reproduced in Appendix A.

Exhibit 1. FICAN Members

Member	Department/Agency Represented
Mr. Thomas L. Connor, Chair	Department of Transportation/Federal Aviation Administration
Ms. Pat Haman	Environmental Protection Agency
Dr. Wesley Henry	Department of the Interior/National Park Service
Mr. Arnold Konheim	Department of Transportation/Office of the Secretary
Major Robert Kull (resigned 10/94)	Department of Defense/U.S. Air Force
Mr. Robert Lee (eff. 10/94)	Department of Defense/U.S. Air Force
Mr. Jim Littleton	Department of Transportation/Federal Aviation Administration
Dr. George Luz	Department of Defense/U.S. Army
Mr. Ken Mittelholtz	Environmental Protection Agency
Dr. Jake Plante	Department of Transportation/Federal Aviation Administration
Dr. Clemans A. Powell	National Aeronautics and Space Administration
Mr. Joel Segal	Department of Housing and Urban Development
Dr. Kevin Shepherd	National Aeronautics and Space Agency
Mr. Alan Zusman (eff. 10/94)	Department of Defense/U.S. Navy

1.3 FICAN Scope

The FICAN Letter of Understanding defines the following scope for the Committee:

- provide a clearinghouse for federal aircraft noise research and development;
- develop recommendations on research and development and noise assessment issues;
- serve as a focal point for public/private/government questions and recommendations on aviation noise research and development;
- conduct public conferences on a periodic basis to exchange information on research and development findings, conclusions, and new aviation topics of public concern; and
- establish a network of sources for the accumulation and distribution of technical information on aviation noise to public/private/government entities.

FICAN does not conduct or directly fund any research. Individual agencies control the direction and funding of their own research programs. FICAN serves as a forum for members to discuss research findings, identify topics requiring research, and solicit the public's concerns about aviation noise effects. It is expected that FICAN efforts will lead to expanded coordinated and cooperative research efforts among individual agencies and will result in more efficient use of federal funds.

2. FEDERAL AGENCY RESEARCH PROGRAMS

All federal agencies undertaking significant aviation noise research are represented on FICAN. FICAN member agencies share a common goal of addressing aviation-related noise, but each individual agency has its own mission, and agency research programs are designed to carry out those missions. The ultimate purpose and underlying mission for agency research, therefore, is critical to understanding the motivation for individual projects and the context in which that research is carried out.

The program goals and mission for each agency are discussed below. For those agencies with policy-making branches, a description of the process by which research is translated into policy is included.

2.1 Air Force

Noise research for the Air Force is conducted under the purview of Armstrong Laboratory. The mission of the Laboratory's environmental noise program is to maintain the Air Force's ability to conduct flight operations at its airfields, military training routes and operations areas, weapons ranges, and other controlled and restricted airspace. This is accomplished by preventing or controlling encroachment of airfields and ranges, implementing aircraft mission realignment actions and acquiring and maintaining airspace. Performance of this mission is dependent on the ability to describe and assess, in a timely and defensible manner, the magnitude and impact of subsonic and supersonic noise.

In order for the Air Force to better predict aircraft noise and sonic booms and the potential impact on the environment, the Armstrong Laboratory maintains the Noise Effects Branch at Wright-Patterson Air Force Base, Ohio. This organization is responsible for developing predictive noise models, measuring noise and sonic booms, and understanding the effects of noise and sonic booms on the environment. This requirement fulfills the need of the National Environmental Policy Act of 1969.

2.2 Army

The central question of Army noise research is to define the psychological rules by which people add up the perceptions of individual single event levels (SELs) into a single percept of "high annoyance". The Army noise research program focusses primarily on social surveys of people exposed to aircraft, traffic and weapons noise; research on annoyance as measured in buildings of varying construction. The Army also is conducting research into mitigating the annoyance of helicopter noise.

Within the Army, research on environmental noise is incorporated into policy in two ways: (1) revisions of Chapter 7 of Army Regulation (AR) 200-1, Environmental Protection and Enhancement, and (2) Participation by Army experts in standards setting groups such as the American National Standards Institute (ANSI) and the International Standards Organization (ISO). Because the negotiations for changes to standards take longer than revisions of an Army regulation, the findings from research are likely to be incorporated into AR 200-1 before they are institutionalized in a standard.

2.3 Environmental Protection Agency

Section 1500.2(f) of the National Environmental Policy Act (NEPA) instructs federal departments and agencies to "use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment."

In 1982 the EPA's Office of Noise Abatement and Control was closed for budgetary reasons. Subsequently, the EPA's involvement with noise issues has been largely limited to issues related to NEPA review and comment under Section 309 of the Clean Air Act (CAA).

Section 309(a) of the CAA states, "The [Environmental Protection Agency (EPA)] Administrator shall review and comment in writing on the environmental impact of any matter relating to duties and responsibilities granted pursuant to this Act or other provisions of the authority of the Administrator, contained in any .... newly authorized federal projects for construction and any major federal agency action ..." Pursuant to the NEPA and Section 309 of the Clean Air Act, EPA reviews and comments on proposed major federal actions that significantly affect the quality of the human environment.

Additionally, the EPA is authorized to develop and submit recommendations to the Federal Aviation Administration regarding noise produced by aircraft and aircraft-related activities under the Noise Control Act of 1972 and the Quiet Communities Act of 1978.

The EPA participated in the Federal Interagency Committee on Noise (FICON), which reviewed federal policies governing the assessment of airport/air facility noise impacts. As a result of the FICAN recommendations, EPA has developing a guidance manual for EPA staff who provide scoping and review comments on NEPA documents.

2.4 Federal Aviation Administration

Goal 9 of the FAA Strategic Plan (FAA, 1993) calls for the agency to provide strong leadership in mitigating the adverse impact of aviation. The first objective under that goal is to reduce the impact of aircraft noise by 80 percent (based upon population) by 2000, through an optimal mix of new aircraft noise certification standards, operational procedures, and technology. Under the mandate of the National Environmental Policy Act, the Noise Control Act, CFR 14 Parts 36 and 150, FAA's research program addresses the environmental consequences of FAA's actions and identifies procedures and technologies to reduce aircraft noise.

A major activity is the FAA/NASA long-term research program to investigate the state of technology to reduce aircraft noise from airframe and engines as part of the Advanced Subsonic Aircraft Technology Initiative. The NASA section of this report provides more details on this program (Section 2.6). FAA's role in the program is to understand the technology under consideration and to help guide the program toward solutions that are technologically practicable and economically reasonable. Along with program elements to identify manufacturing technologies to reduce noise, the

community noise impact program element will assess operation noise reduction possibilities and identify methods to minimize community noise impact.

The FAA's community noise impact program has close ties to another part of the agency's research program to promote advances in the state-of-the-art technologies to assess and abate aviation environmental effects. The approach to improve and expand upon existing environmental assessment capabilities includes an integrated system of analytical tools, guidelines and training regimens to apply to the assessment of the environmental impacts of agency actions.

FICAN serves as a forum for members to discuss research findings, identify topics requiring research, and solicit the public's concerns about aviation noise effects. FAA envisions that FICAN will lead to expanded coordination and cooperative research efforts among individual agencies and, thus, result in more efficient use of federal funds for aviation noise research. FAA also anticipates that the recommendations and findings of FICAN will become part of an integrated system of analytical tools, guidelines and training regimens to apply to the assessment of the environmental impacts of agency actions including airport development, aircraft operating strategies, air traffic management and airspace design. As an example, the agency is currently revising FAA Order 1050 to include the recommendations of the Federal Interagency Committee on Noise (FICAN) which was the predecessor to FICAN. In conjunction with new guidelines, the agency is enhancing the computer models used in airport noise analysis. The enhancements include use of demographic and topographic data bases along with computational processes for additional supplemental noise analyses as recommended in the FICON report.

Federal Aviation Administration Order 1050, "Policies and Procedures for Considering Environmental Impacts", implements the National Environmental Policy Act of 1969 (NEPA) and the related orders, statutes, and regulations. The order establishes the procedures for the preparation of Environmental Impact Statements (EIS's) and Findings of Noise Significant Impact (FONSI's) and for preparing and processing environmental assessments of FAA actions. The objective of the order is to clarify, for FAA Headquarters, Regional and field personnel the NEPA process in terms of planning, procedures, content and format, and public participation.

The NEPA environmental review process is most concerned with environmental activities related to the "natural world", such as air and water quality and the effects of the human environment. Impact categories include noise, socioeconomic, land uses and transportation among many others. Order 1050 presents information and guidance on the assessment of the effects for all environmental categories. Guidance includes specific data gathering and assessment responsibilities along with the threshold of significance on the maximum/minimum level of effect. In the aircraft noise category, the order provides guidance on required and supplementary noise measures, threshold of significance increase, and identification of potential effects to assess including community annoyance, sleep disturbance and speech interference.

FAA's Office of Environment and Energy (AEE) is responsible for the overall review of FAA compliance with the provisions of Order 1050. AEE provides assistance as necessary to offices, services, regions and centers in developing guidelines and procedures for their program areas. This office is the focal point for all aviation-related environmental programs within the agency and

represents the agency on FICAN. AEE is charged with formulating long-range objectives and priorities for aircraft noise and engine exhaust emissions research and development programs. The return on investment is measured by the agency's actions to diminish aviation environmental impacts while also removing constraints upon aviation system growth. Better means of assessing aviation noise impacts will lead to better agency decisions on the aviation system and reduce environmental constraints on airport and system capacity.

Accordingly, FICAN products will be formally transmitted to the appropriate policy officials within the participating agencies, who in turn will initiate appropriate policy changes, either as independent agency actions or as a result if interagency policy coordination. Such coordination will occur on an ad hoc basis when appropriate, based on FICAN products.

2.5 Department of Housing and Urban Development

The Department of Housing and Urban Development maintains a liaison with other federal agencies on research and demonstration activities related to noise and its effect upon housing and land use. The Department's concern with noise as a major source of environmental pollution can be traced back to the objectives of the Housing Act of 1949 which established a national goal to provide "a decent home and a suitable living environment for every American family". In 1961, the Federal Housing Administration's appraisal guidance material identified noise as an issue to be considered in property appraisals in order to meet the requirements of the Housing Act of 1949. A subsequent concern about noise was voiced in the Housing and Urban Development Act of 1965 which requested HUD to "determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the economic depreciation in the values of their properties following the construction of airports in the vicinity of their homes." This included a study of feasible methods of insulating such homes from the noise of aircraft.

24 CFR Part 51 Subpart B "Noise Abatement and Control" established Departmental standards, requirements and guidelines for all HUD housing and community development programs. The regulation encourages the control of noise at its source in cooperation with other federal agencies; encourages land use patterns for housing and other noise-sensitive urban needs that will provide a suitable separation between them and major noise sources; generally prohibit HUD support for new construction of noise-sensitive uses on sites having unacceptable noise exposure; provides a policy on the use if structural and other noise attenuation measures where needed; provides policy to guide implementation of various HUD programs; and recognizes the use the Day-Night Average Sound Level (DNL) to describe noise.

The basic document to implement the noise regulation (24 CFR Part 51B) is the *Noise Guidebook* (HUD, 1985). The Guidebook contains desktop methods for calculating noise levels from aircraft, highways and railroads. It also encourages the HUD field offices and its clients to rely on the Federal Aviation Administration, airport operators and the Department of Defense for aviation noise data and for land use conformity practices.

2.6 National Aeronautics and Space Administration

NASA's noise reduction program is a major part of NASA's Advanced Subsonic Technology Initiative Program which began in October 1993 to develop technology to ensure that the U.S. aviation industry is prepared to meet the demands placed on the aviation system by growing traffic volume and safety requirements. The goal of the program is to provide noise reduction technology readiness to allow unrestrained market growth, provide increased U.S. market share, and insure compliance with international environmental requirements. The current program plan spans a seven year period. The program approach is designed to develop noise reduction technology in cooperation with U.S. industry and the FAA to enhance growth and competitiveness, while maintaining high efficiency. The technology areas included in the program are engine noise reduction, nacelle aeroacoustics, engine/airframe integration, interior noise reduction, and flight procedures to reduce airport community noise.

The objective of the program will be achieved via systematic development and validation of noise reduction technology. The timing of the technology development will be consistent with the anticipated timing of recommendations for increased stringency in noise standards. There has been a strong coordination among government, industry and academia in the planning of this noise reduction program. This close coordination will continue during the execution of the program to effectively transfer the noise reduction technologies to the U.S. industry.

To achieve the goals of the program, NASA has established an objective of 10 dB noise reduction relative to 1992 technology. This goal will be achieved by a team of industry, university, and government technologists working within a well-established noise technology infrastructure. The Noise Reduction program objective will be achieved by combined noise reduction improvements in the engine, aircraft system, and in aircraft operations. The five elements of the noise reduction program are directed toward three desired technology results: engine design for noise reduction, aircraft system noise minimization, and community noise impact minimization.

In addition to the Advanced Subsonic Technology Noise Reduction Program, NASA is supporting and conducting noise research applicable to helicopters, general aviation airplanes, and future aviation systems, such as tiltrotor aircraft and high speed (supersonic) civil transports.

NASA does not develop national noise policy. It participates in policy development at other agencies primarily by providing research and advising agency policymakers. Formal advice generally is transmitted through comments on actions such as Notices of Proposed Rulemaking (NPRM).

2.7 National Park Service

The objective of the National Park Service's Aircraft Overflight Research Program has been to answer the major questions posed by Public Law 100-91, the National Park Overflight Act. The two major questions are as follows:

- Is there a proper minimum altitude which should be maintained by aircraft when flying over units of the National Park System? (Subsidiary questions tie to impacts of

overflights on on-ground users, impairment of visitor enjoyment, injurious effects of overflights on natural and cultural resources, and values associated with aircraft flights over parks); and

- Have the Special Federal Aviation Regulations (SFAR 50-2) that regulate the airspace over the Grand Canyon succeeded in substantially restoring the natural quiet in that park?

The Secretary of the Interior submitted a report to the Congress in the fall of 1994. In part, that report concluded the following:

> Aircraft overflights can cause impacts to park resources and values. For certain visitors, for visitors engaging in certain activities, and for certain areas, there is a very real potential for overflights to impact parks' natural and cultural resources, visitor experiences, and solitude and tranquility – the very fabric of many national parks. A systematic framework for addressing those problems is a first step; it should be flexible enough to address the unique airspace/park use issues identified in this report. NPS priorities should be used to effectively focus problem-solving efforts. At the same time, aviation confers benefits to parks and to some park visitors. The NPS needs the assistance of the FAA and the Department of Defense so that the scarce resources of natural quiet and airspace can be most effectively conserved for the common good and benefit of the American public, while also preserving the benefits provided by aviation. All of the involved agencies have very different missions with little tradition for working together for effective solutions. This needs to change, and there is some evidence that this is possible (NPS, 1994).

The current focus of research conducted by the NPS is to develop a methodology to solve aircraft overflight problems at park service units. The NPS Manger's Survey and Visitor Survey indicate that there could be as many as 50 to 100 units of the park system where overflight problems are likely or certain to exist. NPS managers have consistently identified 30 to 40 parks as priorities for research and problem solving.

3. FICAN MEETINGS

During 1994, FICAN met four times, as follows:

- 19 November 1993
- 13 March 1994
- 28 July 1994
- 13 October 1994

Mr. Thomas L. Connor, FICAN Chairman, facilitated each meeting. Meeting agendas were prepared and distributed prior to the meeting date. Minutes were taken at each meeting and distributed to Committee members subsequently. Agendas and minutes for each meeting are presented in Appendix B. Correspondence generated from meeting discussions also is provided in Appendix B.

The first meeting was held on 19 November 1993 at FAA Headquarters in Washington, D.C. This meeting was primarily devoted to administrative issues, particularly discussing FICAN's purpose, Committee membership, scope, proceedings, and other issues presented in the Letter of Understanding. At that meeting, Mr. Tom Connor (FAA) was elected Committee Chairman; the Committee also agreed to retain a contractor to provide administrative assistance.

The second meeting was held on 13 March 1994, also at FAA Headquarters. The two major topics of discussion at the second meeting were the preparation of the research report, including its contents and format, and discussion of the public forum (its format, location, target audience, etc).

The third FICAN meeting was held on 28 July 1994, in Atlanta, Georgia, following the public forum. The meeting was devoted to a review and analysis of the public forum, including issues related to the organization of the forum (format, schedule, etc.), as well as to content (technical issues raised, policy implications, questions requiring follow-up). The Committee also initiated discussion of its annual noise report and brochure and approved plans for attendance at the Airports Council International-North America (ACI-NA) conference in Toronto. Mr. Dan Johnson, representing the Acoustical Society of America (ASA), was invited to address FICAN concerning participation in acoustics standards setting bodies, such as ASA committees on noise. FICAN discussed the issue of sleep interference at some length and recommended that ASA establish a working group to develop a standard for predicting noise-induced sleep disturbance. This issue is discussed further in Section 7.1.

At the fourth meeting, held on 13 October 1994 at FAA Headquarters, FICAN's contractors briefed the Committee on the informational booth they staffed at ACI-NA; the Committee also discussed the annual report in further detail. Regarding technical issues, Mr. Nicholas Miller (Harris Miller Miller & Hanson Inc.) and Mr. Jim Fields presented their findings on overflight issues in the national parks system and their proposed programs for additional research. FICAN members discussed individual agency concerns and perspectives concerning the National Park Service findings. The parks and wilderness overflight issue is discussed in more detail in Section 7.2.

Although the Committee had originally intended to meet on a semiannual basis, members agreed that as many as four meetings per year would be useful.

4. RESEARCH REPORT

One of the first tasks FICAN undertook was the publication of a single, comprehensive report documenting the status of noise research efforts conducted throughout FICAN member agencies.

The document, entitled *Report on Aviation Noise Research Conducted by U.S. Federal Agencies*, identified fifty-nine projects on aviation noise[1]. Areas of study include: investigation of new criteria for determining land use compatibility, examination of community reactions to aircraft noise, perception of aircraft noise and how it is affected by background noise, acoustic issues associated with rotary wing aircraft, noise effects on animals, development and improvement of computer models, noise reduction technologies, improved public information, and structural damage effects.

Among these topics, the greatest focus of current aviation noise research is on community reactions to aircraft noise, noise reduction technologies, noise effects on animals, and new or improved computer models. The following list summarizes the projects discussed in the report:

- In order to understand better community reaction to noise, the Army is conducting several investigations on annoyance, the Air Force and NASA are conducting research on sleep interference, and the Air Force is examining the feasibility of a prospective epidemiologic study of the effects of aircraft noise exposure on human health.

- To improve noise reduction technologies, NASA has commenced an Advanced Subsonic Technology Initiative, a primary objective of which is to achieve a 10 dB reduction in aircraft noise exposure by the year 2000 compared to 1992 baseline levels. Air Force research in advanced technology is directed toward applications of active sound cancellation techniques to engine test cells, flight demonstration projects, and earplug design.

- Regarding the effects of noise on animals, the Air Force and the Army are exploring noise effects on domestic, grazing, and wild animals, as well as on poultry and birds of prey; of special interest are the effects of overflights in Military Operating Areas (MOAs) and along Military Training Routes (MTRs).

- Finally, a number of FICAN member agencies are developing new noise models and improving existing models for predicting both long-term and short-term exposure, as well as exposure from unconventional operations, such as Military Training Routes and sonic booms. These and other topics are discussed in more detail in the sections that follow.

At the close of 1994, approximately 500 copies of the report have been distributed to researchers, members of the aviation community, and members of the general public. Parties outside the U.S. have

1 Additional projects of a significantly more technical nature also are underway at several agencies. They were not included in the report.

shown interest in the report as well. The report is available through the FAA's Office of Environment and Energy, (202) 267-3579.

The report has been well received by technical and lay audiences alike. Readers have particularly appreciated detailed information on specific research projects (including project contacts) and agency research program summaries. Several readers have requested that FICAN publish a bibliography of technical reports (by agency); such a bibliography is provided as Appendix C to this document. There also have been several requests to update the research report on a regular basis; the Committee will consider this request in 1995.

5. PUBLIC FORUM

One of the principal purposes outlined in the FICAN Letter of Understanding is to provide "adequate forums for discussion of public and private sector proposals (for aviation noise research)." Specifically, the scope states that FICAN will "conduct public forums on a periodic basis to exchange information on R&D findings, conclusions and new aviation noise topics of public concern."

To that end, FICAN conducted a public forum on 27 July 1994 at the Richard Russell Federal Building, Atlanta, Georgia. The meeting site and date were selected to attract attendees of the National Organization to Insure a Sound-controlled Environment (N.O.I.S.E.) conference, which was held in Atlanta later that same week. Letters were sent to all N.O.I.S.E. members, American Speech and Hearing Association (ASHA) members, and other interested parties, inviting them to participate in the public forum. The letter is included in Appendix D. In addition, a Federal Register announcement was made, advertisements were submitted to local newspapers, and the forum was announced in the *Airport Noise Report*, a widely read aviation trade journal.

Sixty-two people signed the attendance sheet presented in Appendix D. It is estimated that an additional 15 to 20 people attended the forum but did not sign the attendance sheet.

The agenda for the public forum is presented in Appendix D. The agenda was designed to allow enough time for researchers to present relatively detailed descriptions of their research programs and individual projects, while at the same time to provide maximum interaction between presenters (researchers) and forum attendees (members of the aviation community and general public). Therefore, presentations were grouped by major topic area, with comments and discussion permitted at the conclusion of each session.

A number of issues were raised during the course of discussions at the public forum. The major issues are discussed below:

- *Metrics*: Several attendees brought up the issue of alternative or supplemental noise metrics to the Day-Night Average Sound Level (DNL). Apparently agencies need to develop clearer guidance for the use of metrics to supplement DNL. Also, some people still do not think DNL an appropriate measure of aviation noise exposure.

- *General aviation and commuter noise issues:* It was clear from various discussions that many people feel the issue of general aviation and commuter noise is not being adequately addressed by researchers. Comments to that effect were made by community members, airport noise officers, and members of the general aviation community. In response, the FAA has developed a general aviation noise reduction program, discussed in Section 7.3.

- *Research vs. policy:* A significant portion of the meeting was spent discussing policy issues and explaining that FICAN is a group whose mission is research, not policy. However, several members of the audience were not satisfied with that explanation. FICAN members agreed they would develop a response in the annual report that

characterizes the relationship between research and policy (i.e., that researchers provide technical input to policy makers), and would be more specific about how policy decisions are made and by whom. This information is provided in the discussion of agency research programs, Chapter 2.

- *Health and social science research:* Several audience members remarked on the need for additional social science and psychology research, suggesting that FICAN invite participation by the National Institutes of Health (NIH). In response, FICAN has contacted NIH and invited them to attend FICAN meetings.

- *Compliance with noise abatement procedures:* Several attendees indicated their perceived disregard of noise abatement procedures by pilots and stated a need for better enforcement mechanisms. FICAN members responded that FAA research is underway to build statistical uncertainties into the noise models, and the USAF is undertaking a study of the feasibility of radar tracking of military aircraft.

- *Representation of general public at FICAN:* A number of attendees requested that FICAN consider expanding its role to include non-agency members or to form an Advisory Group or Steering Committee to FICAN. Tom Connor, FICAN Chairman, responded at the meeting that FICAN membership is limited to federal agencies, according to the Letter of Understanding. However, guests have been invited to address the Committee at FICAN meetings. Furthermore, the Committee did not think it necessary to alter the current process until such time as it no longer provides FICAN with significant input.

- *Land use compatibility:* Several land use discussions made it clear that FICAN needs to communicate with the land use working group regarding its ongoing efforts in revising the land use compatibility guidelines. In response, FICAN has developed a liaison with that group.

These issues are summarized in Exhibit 2.

Individuals were invited to fill out comment forms provided at the forum or to submit comments to the contractor at a subsequent date. The comment form also provided check-off boxes for people to indicate if they wished to receive a FICAN *Report on Aviation Noise Research Conducted at U.S. Federal Agencies* or to be added to the FICAN mailing list. Twenty-three people submitted comment/request forms. Of these, 11 made comments which appear in Appendix D. Five individuals submitted comments to FICAN; these also appear in Appendix D.

In response to the FAA's work on the Expanded East Coast Plan, the FAA received 144 copies of a form letter from residents and other interested parties in Staten Island, concerning the issue of pysco-social research on the effects os noise on humans. The complete text of that letter is provided in Appendix D.5.

Exhibit 2. Issues Raised at Public Forum

Issue Raised at Public Forum	FICAN Response
Use of supplemental noise metrics	Individual agencies now implementing FICON guidance
General aviation and commuter aircraft noise	General Aviation Noise Reduction Research Program initiated by FAA
Research vs. policy	FICAN annual report contains discussion of individual agency policy development procedures
Health and social science research	NIH invited to join FICAN
Compliance with noise abatement procedures	Research underway to improve accuracy of flight profile data in airport noise computer models
Representation of general public on FICAN	Retain current process and reassess annually
Land use compatibility	Federal Land Use Working Group informed of issue

6. PROFESSIONAL SOCIETY PARTICIPATION

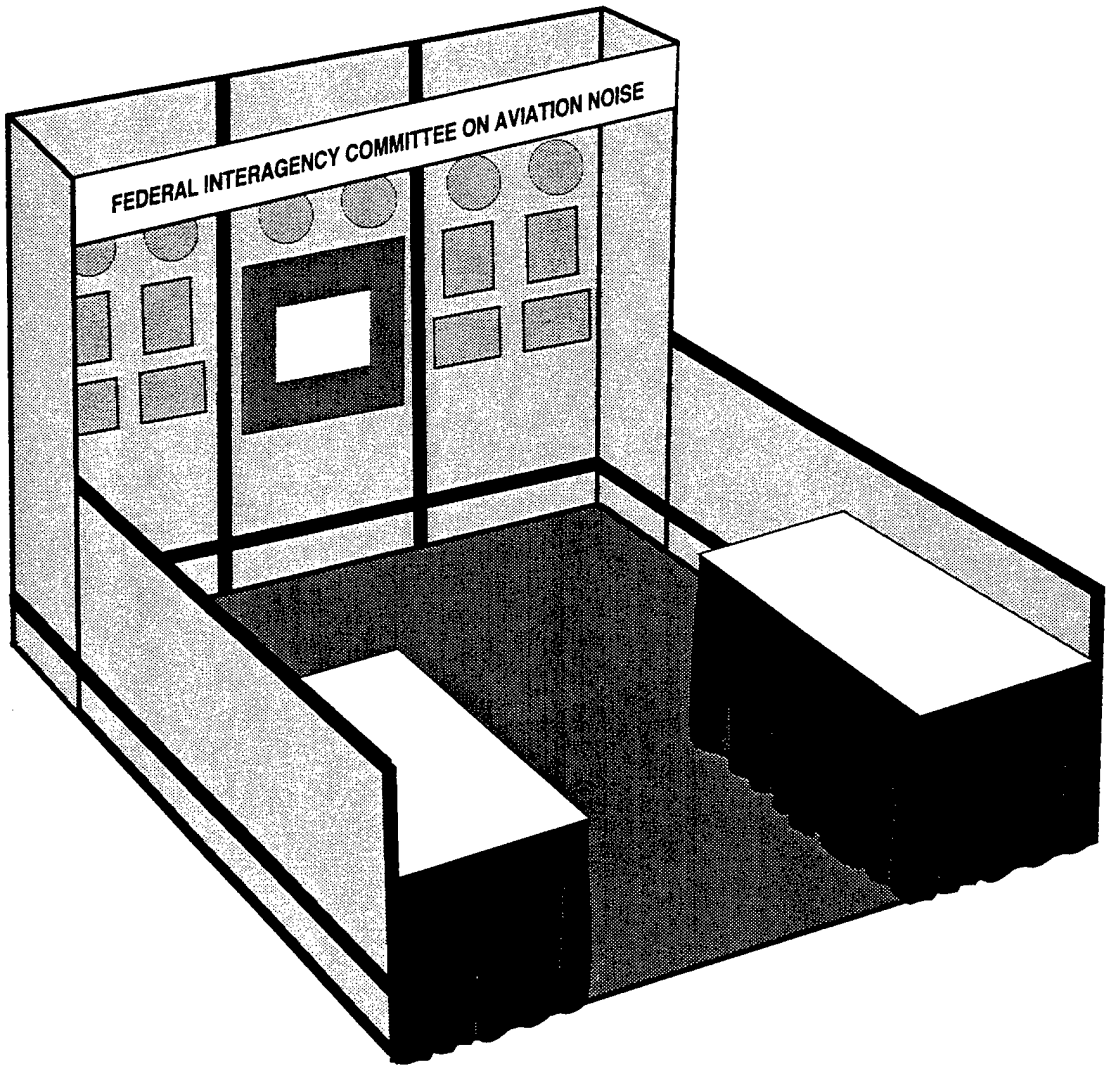
At its second meeting, FICAN decided to produce an informational booth for display of FICAN materials at technical and industry conferences. The committee decided to test the effectiveness of the informational booth at the Airports Council International-North America Conference (ACI-NA) in Toronto (25-27 September 1994). This conference attracts primarily airport operators, contractors and other aviation professionals. Approximately 1,800 people attended the conference. The exhibit hall for this conference typically holds booths for 100 or more vendors, firms and other groups interested in showing their products and services.

FICAN's contractor, Harris Miller Miller & Hanson Inc. (HMMH), developed the layout and graphics materials for the booth. A sketch of this layout is shown in Exhibit 3. HMMH staff members attended the conference as representatives to FICAN. They distributed copies of the *Report on Aviation Noise Research Conducted at U.S. Federal Agencies,* discussed aviation issues with conference attendees, and represented FICAN at the Environmental Affairs Committee meeting.

The real value of FICAN's participation in the conference was publicity–ACI-NA represents a group of relatively senior level airport professionals who work directly with airport noise issues. Increasingly, those people are aware of FICAN's role in federal aviation noise research programs. FICAN agreed that there would probably be limited value in repeating the presentation to the same audience (i.e., ACI-NA's 1995 conference), but that it worked well as a means of introducing FICAN to an important target group.

Participation at a professional conference in 1995 remains an issue for discussion with FICAN.

Exhibit 3. Layout of FICAN Booth at ACI-NA Conference



7. FINDINGS AND RECOMMENDATIONS

Through the course of its four meetings, public forum, and aviation conference attendance, FICAN has made progress on research in a number of different areas. These findings are discussed below.

7.1 Noise-induced Sleep Disturbance

At its third meeting, FICAN members discussed the issue of noise-induced sleep disturbance at some length. The particular discussion was held in a more general context of FICAN participation and guidance in acoustical standards setting organizations. Nevertheless, the group formulated specific questions for ASA to consider in developing a standard for predicting noise-induced sleep disturbance:

- Is the current sleep disturbance curve, adopted in 1992 by the Federal Interagency Committee on Noise (FICON, 1992), still valid, or should a new dose-response curve based on recent field studies by the British Civil Aviation Authority, the USAF, and NASA be developed?

  The British study concluded that aircraft noise at very high levels at night had little effect on sleep. The study findings and preliminary results of the USAF study, which are similar, could be used as the basis for arguing that aircraft noise at night should not be treated as more annoying than aircraft noise during the day.

- Should outdoor or indoor noise measurements be used to determine exposure levels for sleep disturbance?

- Should threshold criteria be based on outdoor or indoor noise levels?

- What is the most appropriate noise metric to use for criteria–metrics such as SEL (Single Event Level) and L_{max} (Maximum sound level), which look at the noise impact of individual aircraft flyovers, or metrics such as L_{eq} (Equivalent Sound Level) and DNL (Day-Night Average Sound Level), which give average data, or some other metric?

- Should the onset rate (how quickly the noise level rises to its maximum level) be factored into the exposure criteria?

- What is the most appropriate measure for the prediction of sleep disturbance (actual awakenings, sleep stage changes, EEC/EKG measures, or actimeter measures which gauge body movement) in assessing the impact of changes in aircraft operations?

- Should background noise be addressed, and if so, how should it be taken into account?

FICAN submitted a formal request to ASA regarding the formation of a working group to address the issues of developing a standard for predicting noise-induced sleep disturbance from aircraft. This

letter is presented in Appendix B. ASA approved the request, and formation of the working group is under way; it will be chaired by Dr. Paul Schomer, of the U.S. Army.

7.2 Aircraft Overflights of Parks and Wilderness Areas

At its fourth meeting, FICAN members discussed individual agency perspectives and issues regarding research on the effects of aircraft overflights on national parks and wilderness areas. A brief summary of that discussion is presented below; more detail is provided in Appendix B.4.

The central issue of the research on noise in national parks and wilderness areas is how to identify, analyze, and minimize consistently existing and potential impacts from airspace use over natural resource lands. There are often conflicts in the mandates of the different federal agencies involved. For example, land management agencies, such as the National Park Service (NPS), are charged with preserving natural resources and recreational opportunities (which can be internally contradictory); the mission of agencies dealing with airspace, such as the FAA, is to provide an efficient and safe transportation network for commercial, military, and recreational users. The solution must be a cooperative land/airspace management program in which all interested parties can participate, using an agreed-upon methodology. An example of such a methodology is the FAA's FAR Part 150 Program.

The conclusions of the NPS research on dose-response in several units of the park system are the following:

- Aircraft sound levels compared to non-aircraft sound levels are important in NPS settings, but virtually unmeasurable with current instrumentation technology.
- Many important variables are correlated with individual sites, including non-aircraft sound levels, aircraft sound levels, and aircraft type.
- Visitor sensitivity by site needs to be determined.

The next step in the research is to develop a proposed methodology, including the criteria, quantitative tools and implementation. Further research could be directed in either of two ways: to fill in dose-response information for other park settings (horizontal investigation), or to apply the existing but limited dose-response methodology to an actual park problem and work towards a solution (vertical investigation). Such a methodology would need to be flexible, fair, and efficient to meet the needs of all interested parties. It would also need to meet the following three objectives: (1) the identification and quantification of existing or potential impacts, (2) an analysis of alternatives, and (3) a means to monitor implementation. The methodology would need to identify measurement methods, impact criteria, computational methods, resource land use information, and airspace use information.

One other key issue is obtaining more data on reactions to aircraft overflights in NPS units. There are several goals for new research on overflight noise: (1) to determine the relative impact of aircraft noise on different types of activities, e.g., sightseeing, short hikes, backcountry hikes; (2) to determine the relative effectiveness of L_{eq} and Percent of Time Audible as predictors of response; (3) to determine a dose-response relationship for low-altitude jet aircraft (primarily military training), and (4) to

determine differences in response for different aircraft types, namely rotorcraft, high-altitude jets, and low-altitude jets.

The "error bands" in the recent NPS data were large because there is insufficient data. They can be narrowed by increasing the types of study areas, the number of study areas, the number of site-days for which data are collected, etc. Each of these options, however, could significantly increase the cost of further defining the dose-response relationship. Specific suggestions to minimize cost are: to manipulate the noise environment by scheduling overflights; to study more predictable noise events; to reduce the size and skill level of the study team; to adjust the on-site program using real-time results; and to consider sites with buildings.

FICAN members discussed individual agency concerns and priorities for research in this area. The FAA is concerned with the potential loss of navigable airspace. FICAN members have agreed to identify study objectives for each agency and to prioritize them based on the individual agency's interpretation of the importance of study objectives. This task will be accomplished in 1995.

7.3 General Aviation and Commuter Aircraft Noise

Section 308 of the Federal Aviation Administration Authorization Act of 1994 requires the FAA and NASA to jointly conduct a noise study and report the results to Congress. This study shall identify technologies for noise reduction of propeller-driven airplanes and rotorcraft. The goal of the study is to determine the status of research and development now underway in the area of noise reduction technology for propeller-driven airplanes and rotorcraft, and to determine whether a research program to supplement existing research activities is necessary.

The FAA and NASA have developed a plan for conducting the required study and completing the Report to Congress. The plan's major elements include an assessment of current noise reduction technology for propeller-driven airplanes and rotorcraft, a review of the study findings with appropriate groups, and preparation of the Report to Congress.

The FAA and NASA are now in the process of determining the status of research and development now underway within NASA in the area of noise reduction technology for propeller-driven airplanes and rotorcraft.

Participation of federal agencies will be invited through FICAN.

7.4 FICAN Agenda for 1995

At the conclusion of its first year, FICAN makes the following recommendations and findings concerning the Committee and its activities:

- FICAN meetings provide opportunities for interagency communication that is worthwhile for a number of reasons: FICAN member agencies have very different missions, and it is important for researchers to understand individual agency goals and objectives in their research programs; there is little opportunity afforded agency

researchers to discuss the projects ongoing at their own, or other agencies; interagency participation has a great potential to reduce or eliminate redundancy of research, to provide for increased collaboration, and to pool the talents of various agency scientists. FICAN intends to meet quarterly in 1995.

- The public forum is a valuable mechanism for soliciting input from interested members of the aviation profession and community members. FICAN intends to hold a second public forum in 1995.

- FICAN intends to publish a brochure describing its the purpose and scope, as well as its activities. It is intended that this brochure will be widely distributed to interested parties seeking general information on FICAN.

8. REFERENCES

Federal Aviation Administration, Vol. 2: Strategic Implementation Plan

Federal Interagency Committee on Noise (FICON). 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues.* Washington, D.C.: FICON.

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National Park Service. September 12, 1994. *Report to Congress: Report on Effects of Aircraft Overflights on the National Park System.* Washington, D.C.

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APPENDIX A. FICAN LETTER OF UNDERSTANDING

LETTER OF UNDERSTANDING

FEDERAL INTERAGENCY COMMITTEE

ON

AVIATION NOISE

BACKGROUND:

On March 16, 1993, representatives of the agencies that participated on the Federal Interagency Committee on Noise (FICON) met and agreed to establish a standing committee to be known as the Federal Interagency Committee on Aviation Noise (FICAN). This Letter of Understanding (LOU) defines the purpose, scope, membership, process and products of the FICAN, and formally documents the commitment of the participating agencies.

The Department of Defense (DOD), the Federal Aviation Administration (FAA), and the National Aeronautics and Space Administration (NASA) are the primary agencies responsible for addressing aviation noise impacts through general R&D activities. From time to time, Congress also authorizes agencies such as the National Park Service and the Forest Service to conduct specific aviation noise R&D projects. Each agency is funded to independently carry out its R&D program. Agencies such as the Department of Veteran Affairs and Housing and Urban Development draw on aviation noise R&D products in formulating certain policies. Other agencies including the Environmental Protection Agency, the Council on Environmental Policy, the Council on Historic Preservation and the Department of Justice have mission requirements that require cognizance of aviation noise R&D products.

PURPOSE:

The FICON issued its report in August 1992. One of the FICON recommendations is to *"Increase research (R&D) on methodology development and on the impact of aircraft noise. To foster this, a standing Federal interagency committee should be established to assist agencies in providing adequate forums for discussion of public and private sector proposals, identifying needed research, and in encouraging the conduct of R&D in these areas."*

The purpose of FICAN is to provide the permanent aviation noise R&D forum envisioned in the FICON recommendation.

SCOPE:

The FICAN provides the necessary technical forum for participating agencies to coordinate aviation noise R&D. Other sources of noise will be considered only in relation to aviation noise; i.e., ambient noise and the comparison of impacts of other noise sources with aviation noise. The FICAN will:

- Provide a clearinghouse for Federal aircraft noise R&D;
- Develop recommendations and priorities on needed R&D and noise assessment issues;
- Serve as a focal point for public/private/government questions and recommendations on aviation noise R&D;
- Conduct public conferences on a periodic basis to exchange information on R&D findings, conclusions and new aviation noise topics of public concern; and,
- Establish a network of sources for the accumulation and distribution of technical information on aviation noise to public/private/government entities.

MEMBERSHIP:

Each participating agency will provide appropriate technical representation to all FICAN proceedings. The chair will rotate among the participating agencies on a periodic basis to be determined in initial FICAN proceedings. Any Federal agency may become a FICAN member upon execution of this MOU by a duly authorized official. Each participating agency agrees to provide administrative support commensurate with its level of participation in FICAN either directly, or by contributing funding for a central administrative support contract.

PROCEEDINGS:

The FICAN will maintain a formal agenda of activities scheduled no less than six months into the future. The chair agency will maintain and administer the schedule of activities. The FICAN will periodically hold public meetings (at least annually) to receive recommendations for future R&D efforts and to report on FICAN activities. Working groups comprised of FICAN representatives and other member agency employees or contractors will be formed to address specific issues. Working group products will be fully coordinated among all member agencies before release as a FICAN product.

The FICON Report Recommendation 3.7, Research and Development contains a specific list of issues (attached) recommended for the initial agenda of the FICAN. In addition to this list of issues and recommendations generated from the public sector, each member agency may at any time propose additional issues for the FICAN agenda.

PRODUCTS:

The FICAN products will be in the form of reports, studies, analyses, findings, and conclusions. All products will be fully coordinated with member agencies prior to release or issuance.

In order to insure optimum consistency in Federally sponsored aviation noise R&D, each member agency agrees to apprise FICAN of all ongoing or planned efforts and to coordinate projects where appropriate.

APPENDIX B. AGENDAS, MINUTES AND CORRESPONDENCE

B.1 1st FICAN Meeting: 19 November 1993

Federal Interagency Committee on Aircraft Noise

(FICAN)

Washington, DC

November 19, 1993

Meeting Minutes

1. Attendance

1.1 The meeting began at 0900h with 10 persons present (see Table 1). Dr. Wes Henry, DOI/NPS, arrived at 1300h for the afternoon session. Two other FAA employees, Robert Hixson (AEE-300) and Lynne Pickard (APP-600), dropped in for parts of the meeting.

1.2 As this was the initial FICAN meeting, the first order of business was introductions around the table. Some of the pertinent collateral duties of the attendees are as follows:

- Memberships on ANSI, ASTM, ICBEN, NATO CCMS, and SAE A-21
- Chairman of ICBEN Group on animals and noise
- Manager of FAA RE&D Chapter 9, Environment and Energy
- Manager of Element 5, Community Noise Impact, of the FAA/NASA Subsonic Noise Reduction Research Program

2. Agenda

2.1 T. Connor distributed copies of a revised meeting agenda (Figure 1) to which was added new Item X, "Publicity." The attendees reviewed and approved the agenda with the addition VI, "After FICON?", which was suggested by K. Mittelholtz. T. Connor also announced the intention to have two breaks plus lunch during the day-long meeting and planned to close the meeting at 1600h.

2.2 T. Connor provided some general background to the creation of FICAN as a result of the Federal Interagency Committee on Noise (FICON) activities. He also offered his definition of FICAN as a group of concerned federal agencies that meets periodically to: (1) discuss and review aircraft noise research, (2) solicit public concerns, and (3) try to turn these concerns into research projects. The attendees generally agreed to this definition.

3. Ground Rules

3.1 T. Connor then directed the attendees to the his six-page presentation (to be referred to as FICAN/P-1). The first page identifies "who we are" at the present time. T. Connor indicated that the Advisory Committee on Historic Preservation (ACHP) had been invited but had yet to respond to at least two inquiries from FAA. USAF had taken responsibility on behalf of DOD to execute the letter of understanding (LOU), but had

FICAN Meeting of Nov. 19, 1993
List of Attendees

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Figure 1
Agenda

I. Introductions

II. Agenda
1. Review
2. Approve

III. Ground Rules
1. Membership
1. Chairmanship
2. Advisors
3. Meeting Schedule/Sites
4. Presentations/Papers
5. Meeting Minutes
6. Administrative Cost Contributions

IV. Letter of Understanding (LOU)
1. Review
2. Signing Status

V. Status of R&D Activities
1. DoD?
2. DOI/NPS?
3. DOT/FAA
4. EPA?
5. NASA?

VI. After FICON?

VII. Process for Public Input
1. Proposals
   a. Annual Workshop(s)
   b. Sessions at Annual Meetings of ASA, SAE A-21, and/or NOISE
2. Discussion
3. Decision

VIII. Research Issues
1. FICON Recommendations
2. Brainstorm
3. Discussion
4. Priorities

IX. Action Plan

X. Other
1. Publicity - Ann Kohut, ANR

XI. Next Meeting

XII. Close

yet to do so at the time of this first meeting. R. Kull identified himself as the probable DOD alternate and indicated that Lt. Col. Hamilton (SAF, Pentagon) is the probable member from DOD. The members felt it is appropriate for DOD to have more than one member to representative each of the Services if they so choose. DOT has two members; T. Connor of FAA, and A. Konheim of OST. For example, G. Luz could probably be DOD member from USA. It is DOD's decision. T. Connor noted that both HUD and VA had indicated that they could not commit time and resources as required to execute the LOU, but they were interested in participating on an informal process. J. Segal confirmed HUD's intention on participation. T. Connor asked if the attendees could identify any other Federal agencies as potential FICAN members. There were none. During the afternoon session, W. Henry stated that he was the DOI member to FICAN. As a result of the discussion at the meeting, Table 2 contains the updated FICAN membership status.

Table 2

FICAN Membership Status

Invited	LOU	Member	Alternate	First Meeting
ACHP	????	????		????
CEQ	Declined	NA		No
DoD	????	????	Maj. R. Kull	Yes (USA & USAF)
DOI	Signed	Dr. W. Henry		Yes (NPS)
DOT	Signed	T. Connor A. Konheim	Dr. J. Plante	Yes (FAA & OST)
EPA	Signed	K. Mittelholtz		Yes
HUD	Declined	(informal)		
NASA	Signed	Dr. C. A. Powell	Dr. K. Shepherd	Yes (LaRC)
VA	Declined	(informal)		

3.2 Turning to page 2 of FICAN/P-1, the members then discussed who will attend FICAN meetings. The members agreed to the definitions of member and alternate. T. Connor stated that he thought of himself as the defacto chairman. At the end of FICON, FAA took on the task of forming FICAN and the job fell to him. T. Connor indicated that he did not campaign nor volunteer for the job. If someone else would like the job, he would be glad to turn it over. There were no volunteers. The members agreed that during this evolutionary period for FICAN the chairmanwill serve a two-year term. At the end of the term, the chair will rotate and the membership will decide upon the length of term of office. As a result of a question by A. Konheim, the chairman agreed to look into the issue of whether the attendance of outside advisors violates any rules for Federal advisory committees [TASK]. The general sense of the discussion of this point indicated that advisors attendance at FICON meetings was not a problem and should not be for FICAN.

3.3 The membership then addressed other administrative matters (see page 3 of FICAN/P-1). The members agreed to the description of meeting length, site, minutes and presentations. While all of the members desired for not more than semiannual meetings, they saw the need to provide for FICAN meetings on an as needed basis. When asked if we are planning to prepare annual report for release next November, the chairman replied that the members will hold that discussion after we have decided upon the process for public input under agenda item VII.

3.4 More than one member asked how we plan to reach consensus, especially on issues that agencies may have strong disagreement. The members who had participated on FICON liked how the consensus process without voting worked in FICON. T. Connor and K. Mittelholtz both stated that their respective agencies had very strong disagreements going into FICON and were able to reach consensus on all major issues. G. Luz mentioned that he knew an expert on conflict resolution and mediation who may be useful to FICON at a later point, especially when dealing with the public. The chairman stated that he did not see the need for a voting process and he hoped that the group would work hard to achieve consensus on the tough issues without resorting to issuing minority reports. The members generally agreed that the Federal government should speak with one voice.

3.5 The membership agreed to the need for a support contractor for the tasks as outlined on page 3 of FICAN/P-1. The chairman's choice of Harris, Miller, Miller & Hanson, Inc (HMM&H) was also thought to be a good one. Many members stated that funding contributions from their agencies would be extremely difficult. The chairman replied that he understood this difficulty, but contributions are necessary. A. Powell offered that a portion of the FAA funding to the NASA Subsonic Jet Noise Research Program could be appropriated for FICAN support. The chairman stated that his plan was to execute the contract as quickly as possible using FAA and FAA/NASA funds and that he would then return to each member to solicit reimbursement contributions.

4. LOU

4.1 The chairman then distributed copies of the LOU and referred the members to page 4 of his presentation. The members proceeded to review the purpose, scope, membership, proceedings, and products session of the LOU. R. Kull then asked what is the definition of clearinghouse as described under the scope. In his initial reading of the LOU scope, he was concerned that "clearinghouse" was meant as a formal review step in the publication of technical reports by any FICAN member. He then offered and the members agreed to the Webster's definition of clearinghouse as a central agency for the collection, classification, and distribution of information.

4.2 The chairman admitted that he was confused by a phrase in the Proceedings section that calls for a formal agenda of activities scheduled no less than 6 months into the future. Does that apply to FICAN meetings or the public sessions? The chairman stated that he would ask the authors what they meant by that phrase. [TASK]

4.3 The chairman noted that FICAN membership entails both a signature on the LOU and contribution for administrative support. R. Kull observed that the LOU has place for only one signature and not for signatures of all members. He would have liked to have a copy that was signed by all so that he may refer to it as part of related activities. The members agreed that trying to get all signatures on one LOU would probably be a logistic nightmare. As the next best thing, the chairman agreed to distribute copies of the LOU signature pages to all members. **[TASK]**

5. Status of R&D Activities

5.1 Using overhead transparencies and handouts (FICAN/P-2), R. Kull presented the status of USAF Armstrong Laboratory activities in aviation noise field. Maj. Kull is in charge of the Noise Effects Branch which is currently conducting research in the following areas:

- Aircraft noise modeling: NOISEMAP, ROUTEMAP, MOAMAP, etc.
- Aircraft Noise Effects on Humans: onset rate, periodicity, sleep disturbance, etc.
- Aircraft Noise Effects on Domestic Animals
- Aircraft Noise Effects on Wildlife
- Sonic Boom Effects on Structures
- Other: Interactive Sound Description System (ISIS), cumulative noise effects, effectiveness of Part 150 and AICUZ

5.2 When asked, R. Kull responded that many of the effects study concentrated on reactions to low altitude/high speed military jet operations. R. Kull also promised to add FICAN members to their technical report mailing lists. **[TASK]**

5.3 G. Luz was next to talk about research underway at the USA Corps of Engineers Research laboratory (CERL). In the helicopter area, CERL is performing activities dealing with annoyance, sound propagation, update to "Fly Neighborly" measurement and analysis effort, and barrier effects. On the wildlife effects issue, USA takes the approach of reacting to public concerns in particular areas and responding with on spot measurements.

5.4 J. Plante then made a presentation (FICAN/P-3) on FAA's current efforts in noise prediction modeling. He spoke of the imminent release of Integrated Noise Model (INM) Version 4.11 and described INM 5.0, Heliport Noise Model (HNM) 2.2, Enroute Aviation Noise Model (EANM), and the Noise Impact Routing System (NIRS).

5.5 A. Powell then presented the FAA-NASA Subsonic Noise Reduction Technology Program (FICAN/P-4). He began with an overview of the entire Advanced Subsonic Program moving to the goals of the Noise Reduction Program. He described the elements and program timelines. He summarized the Community Noise Impact Element and identified the subelements. A. Powell closed by stating that NASA is looking for

input to the program to help them formulate and refine the community noise impact research.

5.6 By this time W. Henry had arrived and agreed to describe NPS activities. He began his talk with the promise to provide the membership with a list of NPS's technical reports in this area. He briefly described the upcoming Report to Congress which will be a two volume set; one addressing the Grand Canyon and other a system-wide report. The other reports include the following:

- Dose-response study at Grand Canyon and Hawaii Volcanoes National Parks
- White paper (by Grant Anderson of HMM&H) on altitude and noise propagation
- Cultural resource impacts
- Noise measurements
- Wildlife bibliography

6. After FICON?

6.1 T. Connor reported that after FICON, Congress mandated FAA to produce a report on the social, economic and health effects of aviation noise. Since the time schedule did not allow for any real research the report reflects what is already known in these areas. Mr. Connor stated that the report is in final review and he will distribute copies to the members after its submittal to Congress. He also distributed copies of a summary table of public responses to the docket on the social, economic, and health effects. The table contained a count of number of presponses that fell into groups, such as, 'Agree with FAA,' Disagree,' 'Complaint,' etc. Mr. Connor indicated that the majority of the comments came from a single community near Detroit Metro Airport who were complaining about a local problem that really had nothing to do with the subject of the report to Congress. Others saw the distribution of public comments as a sign of the disconnect between the Federal government and the public on aviation noise.

6.2 T. Connor also briefly described FAA's ongoing effort to revise Order 1050.1, Policies and Procedures for Considering Environmental Consequences of FAA Actions, which includes incorporation of the FICON recommendations. K. Mittelholtz asked if this order will be coordinated with other agencies? Both T. Connor and B. Hixson responded that he would have to speak to Bill Albee, manager of AEE's Policy Division (AEE-300). Mr. Mittelholtz also asked about update to FAR Part 150. B. Hixson responded with a brief description of the schedule and status.

7. Process for Public Input

7.1 The chairman began the discussion of the process for public input using the fifth chart of his presentation. He explained that he tried to capture the range of possibilities by identifying the pertinent factors like whom to invite, what kind of forum, how many per year, where, and how are FICAN members to be involved. He also indicated that the

Acoustical Society of America (ASA) had asked how they could help the Federal government in this area.

7.2 A. Konheim believes that something like a public hearing would not work. He does not see benefits and does not believe that we would obtain any new information. The chairman offered the idea of a workshop by invitation as a way to target the right audience. K. Mittelholtz stated that we need to solicit the general public as a whole.

7.3 At this point, G. Luz questioned interpretation of the Congressional language that essentially mandated FICAN. He thought it talked about a public forum for policy making. Others replied that the final language looks very much like that in the LOU. We were mandated to establish a standing committee to provide public input into aviation noise research.

7.4 Both G. Luz and W. Henry offered ideas on techniques that have been used successfully in dealing with conflict and confrontation. W. Henry briefly described a document called "Transactive Planning." NPS has used this method on volatile issues involving many parties with as many differing opinions. Dr. Henry will provide a copy for distribution to the membership. [TASK] G. Luz talked about two people who have much experience in mediating conflict, Prof. Mark Dunning and Mr. David Pritzer of the U.S. Administrative Conference. Mr. Luz would check into their availability to talk to FICAN if the need arises.

7.5 After more discussion, the consensus was to hold a one day public forum to discuss federal research in the aviation noise fields. Invitation will be by a mailing list that G. Luz will compile [TASK] and by Federal Register notice. To help focus the discussion, FICAN will prepare a package describing current and planned research activities of the members. The envisioned steps are as follows:

1. Each member prepares descriptions of current and planned research
   a. due 3 months from first meeting
   b. one page per project
   c. common format
      1) agency
      2) mandate/reasons why
      3) background
      4) objective
      5) description
      6) timeframe
      7) products/applications
3. FICAN Review
4. Distribute/Invite
   a. to mailing list
   b. Federal Register notice which contains meeting notice, announcement of availability, and openning of docket for public comments

5. Public Forum
   a. Potential Sites
      1) ASA Annual Conference, June 5-9, in Cambridge, MA
      2) NATO CCMS Workshop, May 16-20, Baltimore, MD (probably too soon)
   b. Content
      1) Morning session devoted to members describing research activities
      2) "Open mike" during afternoon session by reservation and with time limit
      3) Meeting Record to be built from written comments (keep docket open for period of time after public forum) to include in the annual report

7.6 FICAN will meet in 3-4 months to discuss the research package and to complete plans for public forum.

8. Research Issues

8.1 Now that the members have a general idea on the form for public input, the chairman asked if FICAN should identify research priorities at this time. R. Kull, A. Powell, and a few others pointed out that their research projects are all the highest priority. The chairman countered that funding decisions dictate priorities and that sometimes we have to make tough decisions not to continue on some projects because lack of funding. The projects that are not funded may be of most importance to the public The members agreed to W. Henry's suggestion that the cover letter to accompany the research description package should address priorities and ask for the public's input.

8.2 K. Mittelholtz then asked when is FICAN going to discuss land use compatibility criteria. The chairman indicated and the other members agreed that the land use compatibility table is not the responsibility of FICAN because it is not a research activity, but a policy decision based upon some knowledge of the noise impacts. K. Mittelholtz strongly felt that someone should look into revising the compatibility tables and if not FICAN then who? The general opinion of the other members is that FICAN is not the appropriate group and FICON no longer exists.

8.3 L. Pickard then wanted to talk about noise effects on historic structures. She mentioned the problems FAA has with the Advisory Council on Historic Preservation (ACHP) on this issue. However, she could not offer any specifics on what ACHP thinks are the effects issues. The chairman stated that it was premature to begin in-depth discussions of any aviation effects issue at this organizational meeting. The members agreed that any such discussion will come out during the process for public input.

9. Publicity

9.1 Before the meeting Ann Kohut of the Airport Noise Reporter had called T. Connor to inquire about the upcoming FICAN meeting. Mr. Connor stated that the primary purpose of the first meeting was to discuss process for public input along with covering administrative matters as required at an initial meeting. He also sent her a copy of the

LOU. Ms. Kohut stated her intent to call back after the meeting to find out what happened.

9.2 The chairman asked how should FICAN respond to her further inquiry. The members agreed that we should describe this first meeting as organizational. In addition, the chairman should outline the proposed process for public input in general terms and indicate to her that the process will become more crystallized at next meeting.

[Note: After some days of "phone tag," Ann Kohut contacted T. Connor on December 3 to discuss the meeting. He identified himself as the chairman and listed the member agencies. When asked to name each member, he questioned why that was necessary and then responded that the list of members is not yet official as we await selection and identification by a few of the member agencies. He generally described the process for public input including the creation of a mailing list. A few days later, Charles Price of N.O.I.S.E. sent a letter requesting placement on the FICAN mailing list.]

10. Next Meeting

10.1 Members agreed to hold the next meeting 3 to 4 months after this first meeting in Washington. An FAA conference room would do just fine.

11. Close

Table 3
Assignments

cd. Hamilton

Task		Assigned to	Status
1/1	DOD executes FICAN LOU	~~R. Kull~~	
1/2	Look into the issue of whether the attendance of outside advisors violates any rules for Federal committees.	T. Connor	Done
1/3	Ask the authors of the FICAN LOU what they meant in the Proceedings section about the 6 months timeline.	T. Connor	Done
1/4	Distribute copies of LOU signature pages to members.	T. Connor	Done
1/5	Add FICAN members to AL/OEBN technical report mailing lists.	R. Kull	Done
1/6	Provide a copy of "Transactive Planning" for distribution to the membership.	W. Henry	?
1/7	Compile a mailing list for distribution of research package and invitation to public forum.	G. Luz	Done — to Hamilton
1/8	Prepare descriptions of current and planned research projects as detailed in Sec. 7.5. (Hamilton Report)	All members	Done
1/9	Schedule time and place (in Washington) for next meeting.	T. Connor	Done

B.2 2nd FICAN Meeting: 28-29 March 1994

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Federal Interagency Committee on Aviation Noise
(FICAN)
Washington, D.C.
28-29 March 1994
Minutes of Meeting

1. ATTENDANCE

1.1 The meeting began at 0900h with 10 persons present. Attendees are listed in Table 1. Mr. Ken Mittleholz (EPA) was present for the 2nd day of the meeting.

Name	Agency Represented
Mr. Thomas L. Connor	DOT/FAA
Dr. George Luz	DoD/USArmy
Ms. Pat Haman	EPA
Mr. Joel Segal	HUD
Major Robert Kull	DoD/USAF
Dr. Clemens A. (Andy) Powell	NASA
Mr. James Littleton	DOT/FAA
Dr. Jay Plante	DOT/FAA
Mr. Ken Mittleholz	EPA
Mr. Robert Miller	HMMH/Contractor
Ms. Mary Ellen Eagan	HMMH/Contractor

1.2 Since several people at the meeting had not attended the organizational FICAN meeting, brief introductions were made. T. Connor introduced HMMH, the contractors hired to provide administrative and technical support for FICAN.

2. AGENDA

2.1 T. Connor distributed copies of the proposed meeting agenda (Figure 1). The attendees reviewed and approved the agenda, with no additions.

2.2 T. Connor distributed copies of the minutes of the first FICAN meeting (19 November 1993), and directed the Committee's attention to action items identified in those minutes.

3. LETTER OF UNDERSTANDING (LOU)

3.1 T. Connor distributed copies of a brief statement clarifying some of the Proceedings set forth in the LOU. There were no further questions on the matter.

3.2 T. Connor asked members to review a table indicating current status of signing of the Letter of Understanding (LOU). He indicated that CEQ, VA and HUD had declined to participate, in part due to a lack of funding. R. Kull indicated that funding is not the major issue, and should not be a deterrent to signing the LOU. J. Segal stated that he would confer with HUD, and report back to the Committee on whether or not HUD would reconsider signing the LOU [TASK]. T. Connor indicated that he would contact the VA regarding their status [TASK]. The Committee agreed that the status of CEQ remains unclear.

4. ACTION ITEMS FROM PREVIOUS MEETING

4.1 Item 1/1: R. Kull indicated that he had not yet been able to contact Col. Hamilton regarding signing the LOU.

4.2 Item 1/2: Done. T. Connor indicated that attendance of outside advisors does not violate Federal rules regarding Committees.

4.3 Item 1/3: Done. See Item 3.1 above.

4.4 Item 1/4: Done.

4.5 Item 1/5: Done. R. Kull indicated that FICAN members had been added to the AL/OEBN technical report mailing list.

4.6 Item 1/6: Unresolved. This action item was intended for Dr. Wes Henry (DOI/NPS) who was not at the meeting. T. Connor indicated that he would follow up with W. Henry [TASK].

4.7 Item 1/7: Done. G. Luz forwarded the compiled data to HMMH, who will prepare the final mailing list/labels [TASK].

4.8 Item 1/8: Draft project descriptions received from all agencies conducting research except DOI/NPS. T. Connors stated that he would follow up with W. Henry [TASK].

4.9 Item 1/9: Done.

5. N.O.I.S.E. PROPOSAL

5.1 T. Connor distributed copies of a letter from Charles Price of the National Organization to Insure a Sound-controlled Environment (N.O.I.S.E.), as well as a draft response he had prepared (Attachments). The Committee discussed the response. P. Haman suggested the reply should clarify FICAN's role with respect to research - specifically, that FICAN does not fund research directly. R. Kull stated that the objectives for public participation should be made clear: (1) to inform the public of ongoing research, and (2) to receive input for consideration on people's concern regarding aviation noise. T. Connor suggested that the structure of the public forum should be designed to maximize public input. G. Luz reiterated three FICAN purposes: (1) to report research, (2) to solicit input from the public, and (3) to allow agencies to share information, and thereby eliminate redundancy in research.

5.2 T. Connor proposed that he would revise the draft response to C. Price to include the discussions above. He offered to prepare a revision by the following day. [TASK]

6. PUBLIC FORUM PROCESS

6.1 T. Connor distributed three items: (1) a proposed agenda for the public forum, (2) a proposed Federal Register announcement regarding the public forum, and (3) a list of summer technical conferences for possible FICAN attendance.

6.2 The Committee discussed possible locations and dates for the public forum. B. Miller suggested that the Committee should consider the audience that it wanted to reach through the process (who is the "public"?). He submitted that the NOISE membership includes a wide variety of interests, including elected officials, airport noise officers, as well as members of the interested public. T. Connor suggested that the FICAN public forum might be held in conjunction with the NOISE summer conference (late July, Atlanta, GA), that is, just before or after the NOISE conference. M. Eagan offered to research details of the NOISE conference for the next day [TASK]. G. Luz suggested that FICAN consider sending representatives to a federally sponsored training course on public meetings (such a course has been given to Army officials in the past).

6.3 The Committee discussed the format of the Federal Register announcement. P. Haman suggested that multiple announcements might reach a wider audience. For example, some people who regularly read announcements placed by the EPA might miss the announcement if it were submitted by FAA. She offered to investigate the possibilities of submitting multiple announcements [TASK].

6.4 The Committee agreed that distribution of an invitation to the public forum would be appropriate, once arrangements have been finalized. G. Luz forwarded mailing list information to M. Eagan, who will compile FICAN mailing list [TASK]. The Committee also agreed that a press announcement should be released to technical publications [TASK].

6.5 The Committee discussed the proposed public forum process and agenda. B. Miller suggested that the proposed schedule, which indicated a public comment period at the end of the day, might be difficult for some people to accept, particularly if they did not have an entire day to spend at the forum. He suggested that public comment might be taken throughout the day, in conjunction with relevant technical topics. The Committee discussed this approach and agreed to make presentations at the public forum by technical topic (following the outline in the FICAN report), rather than by agency, recognizing that certain agencies dominate various research topics (e.g., the USAF conducts the majority of research on noise effects on animals). It was agreed that public comment would be received on technical topics after agency presentations on those topics. People wishing to make public comment would need to indicate so prior to the meeting date; however, a general/open comment period would be made available as time permits.

6.6 The Committee discussed whether or not to retain a court reporter and/or tape recorder for the forum. T. Connor suggested that he would prefer informal notetaking to a formal stenographer.

6.7 The Committee also discussed the possibility of retaining an outside moderator to run the public forum. B. Miller said that the major advantage of such a person would be the perceived objectivity of someone not involved in any of the research. Alternatively, he suggested that he could be moderator. HMMH agreed to investigate this issue [TASK].

6.8 The Committee discussed the need for a sign-in/comment area at the public forum, which will be attended by a FICAN member. R. Kull suggested that the Committee could use a public display booth owned by the USAF. The booth could be reconfigured to include FICAN information, including graphics, and reports could be distributed from the booth. R. Kull agreed to investigate this issue [TASK]; other FICAN members will supply color agency logos to R. Kull by 1 June [TASK].

7. RESEARCH DESCRIPTION PACKAGES

7.1 T. Connor stated that everyone should have received a copy of the Draft FICAN report, prepared by HMMH. He emphasized that the report was a very rough draft, due to the limited time available to prepare it. His general comments indicated that there was significant input needed from the agencies, and further clarification needed on some specific projects.

7.2 The Committee discussed the overall structure of the report, and developed the following proposed Table of Contents:

Chapter 1: Executive Summary
Chapter 2: Introduction
Chapter 3: Program Reviews, by Agency
Chapter 4: Research Summary
Appx A: Detailed Project Descriptions
Appx B: Glossary of terms

Regarding the introduction, the Committee agreed that the report should explain the purposes of FICAN (see item 5.1) and the Letter of Understanding; it should also list member agencies and representatives, as was provided in the FICAN report.

Each agency agreed to prepare an agency overview describing the goals and objectives of the agency's research program, so as to put the program in context with the strategic plan of the agency [TASK]. Members agreed that individual projects would be more likely to be understood in the context of an overall research scheme.

T. Connor stated that the section presenting research summaries should follow the same basic structure as the draft report, building on the topic-related table developed by HMMH.

The Committee reviewed the format of the project descriptions, and agreed to provide the following information for each project:

- title,
- sponsoring agency,
- coordinating agency,
- point of contact,
- purpose,
- schedule,
- product(s), and
- findings, if any.

7.3 The Committee then reviewed each project description provided in the draft report. Specific comments on those projects are not provided here; however, they were noted by agency representatives for inclusion in the final report, as appropriate. Members agreed to provide revised project descriptions to HMMH by 15 April [TASK].

[Note: The meeting broke for the evening at this point. The Committee re-convened at 0830h on 29 March. T. Connor distributed a revised response to N.O.I.S.E. Members approved the letter, with

minor changes. T. Connor indicated he would send the revised letter [TASK]. He also reported that he had spoken to C. Price of N.O.I.S.E., who was enthusiastic to hear the FICAN proposal to hold the FICAN public forum in conjunction with the N.O.I.S.E. conference. The Committee agreed to hold the public forum on 27 July, in Atlanta. HMMH will make arrangements [TASK].]

8. ACTION PLAN

8.1 M. Eagan reported the proposed FICAN schedule required to meet the public forum date of 27 July:

Item	Date
Revised project descriptions to HMMH (FICAN)	15 April
Draft report to FICAN (HMMH)	1 May
Comments on draft report to HMMH (FICAN)	15 May
Input for public information booth to R. Kull (FICAN)	1 June
Final report to printer (HMMH)	8 June
Federal Register Announcement (FAA, EPA)	8 June
Press release (HMMH, FAA)	8 June
Invitation to public forum (HMMH)	8 June
Public forum	27 July

9. OTHER

9.1 T. Connor indicated that Ann Kohut, of the Airport Noise Report (ANR), had called for names of FICAN members, and plan for public forum. He informed her that he would provide that information at the conclusion of this meeting and when arrangements had been made [TASK].

9.2 B. Miller suggested that FICAN members also consider attending one or two conferences to solicit input from the technical community. Several members (Luz, Powell) indicated that they planned to attend ASA meetings in June (Boston); however, it did not appear likely that the report would be available for that meeting. B. Miller suggested that the annual ACI-NA meeting would provide a good opportunity to collect input from a variety of airport officials and consultants. M. Eagan suggested that FICAN could provide a

booth in an exhibition hall at this meeting, and collect comments (through a comment sheet or survey). HMMH agreed to pursue options in this area [TASK].

9.3 K. Mittleholz indicated that EPA was about to release an internal guidance document on noise for regional personnel (309 reviewers) to use in reviewing environmental documents. He expected to have the document ready in 2-3 weeks, and was seeking input on technical issues from FICAN [TASK].

9.4 P. Haman suggested that FICAN members should alert appropriate committees/ members of Congress regarding the public forum [TASK].

10. NEXT MEETING

10.1 T. Connor suggested that the next FICAN meeting be held following the public forum, in Atlanta, 28 July. Members agreed. HMMH will make arrangements [TASK].

10.2 T. Connor suggested that a possible conference call could be held on 30 May, if needed, to discuss details on the final report.

11. CLOSE

ASSIGNMENTS

Task		Assigned to
3-1	Look into HUD signing LOU, with understanding that no funding is required for participation in FICAN.	J. Segal
3-2	Contact VA re: participation in FICAN	T. Connor
4-1	Provide a copy of "Transactive Planning" for distribution to the membership	W. Henry
4-2	Prepare FICAN mailing list	HMMH
4-3	Discuss project descriptions with NPS	T. Connor
5-1	Prepare revised draft response to N.O.I.S.E. (C.Price)	T. Connor
6-1	Research details of N.O.I.S.E. conference	M. Eagan
6-3	Look into possibility of submitting multiple Federal Register announcements of FICAN public forum	P. Haman
6-4	Prepare press announcement	HMMH
6-5	Look into possibility of moderator for public forum	B. Miller
6-6	Research re-configuration of USAF display booth	R. Kull
6-7	Forward agency logos (color) to R. Kull	All
7-1	Prepare agency overviews for FICAN report	All
7-2	Provide revised project descriptions to HMMH by 15 April	All
7-3	Make arrangements for public forum (27 July)	HMMH
9-1	Pursue options regarding attendance at technical conferences	HMMH
9-2	Review EPA guidance document on noise	All
9-3	Alert Congress regarding public forum	All
10-1	Make arrangements for next FICAN meeting (28 July)	HMMH

Federal Interagency Committee on Aircraft Noise

(FICAN)

Second Meeting, March 28-29, 1994

Agenda

I. **Introductions**

II. **Agenda**
   1. Review
   2. Approve

III. **Letter of Understanding (LOU)**
   1. Signing Status

IV. **Action Items from Previous Meeting**

V. **N.O.I.S.E. Proposal (Charles Price's letter attached)**
   1. Discuss
   2. Compose reply (interim reply attached)

VI. **Process for Public Input**
   1. When?
   2. Where?
   3. Federal Register Announcement (draft attached)
   4. Invitation Letter
   5. Structure of Public Forum (proposed schedule attached)
      a. Discuss
      b. Approve

VII. **Research Description Package**
   1. Review
   2. Discuss
   3. Revise
   4. Approve

VIII. **Action Plan**

IX. **Other**
   1. Publicity - Ann Kohut, ANR

X. **Next Meeting**

XI. **Close**

B.3 3rd FICAN Meeting: 28 July 1994

Federal Interagency Committee on Aviation Noise
(FICAN)
Atlanta, GA
28 July 1994
Minutes of Meeting

1. ATTENDANCE

1.1 The meeting began at 0900h with 10 persons present. Attendees are listed below.

Name:	Agency Represented:
Mr. Thomas L. Connor	DOT/FAA
Dr. George Luz	DoD/USArmy
Mr. Ken Mittleholz	EPA
Major Robert Kull	DoD/USAF
Dr. Clemens A. (Andy) Powell	NASA
Mr. James Littleton	DOT/FAA
Mr. Ken Mittleholz	EPA
Mr. Robert Miller	HMMH/Contractor
Ms. Mary Ellen Eagan	HMMH/Contractor
Mr. Dan Johnson	ASA Noise Committee (Guest)

1.2 Brief introductions were made for the benefit of Mr. Johnson, who had been invited to address the Committee (see item 3).

2. AGENDA

2.1 T. Connor distributed copies of the proposed meeting agenda (Figure 1). The attendees reviewed and approved the agenda, with no additions.

3. FICAN & ASA

3.1 T. Connor explained that the Acoustical Society of America (ASA) Standards Committee had approached him regarding FICAN's interest in noise standards. Mr. Connor suggested

that Mr. Johnson address the group at this meeting. He introduced Dan Johnson, the Chairman of the ASA Standards Committee. Mr. Johnson explained that he was addressing FICAN to plead his case for better communication between federal agencies and standards-setting bodies, including the ASA, ASTM and ISO. As background for the Committee, Mr. Johnson reviewed the standards committees and subcommittees, noting that ASA generally is the focal point for U.S. coordination. However, he indicated that ASA has a technical group working with ISO, which currently is developing a community noise standard. Mr. Johnson noted a need for general support from federal agencies, and a particular need for funding for U.S. scientists to attend standards committee meetings. He indicated that ASA would be interested in attending occasional FICAN meetings regarding standards, but did not feel it appropriate at this time to request membership on FICAN.

3.2 T. Connor clarified that membership in FICAN is limited to federal agencies, according to the LOU. However, guest attendance by ASA, if appropriate, certainly can be continued. He went on to say that he believes FICON fell short in its final report by not providing guidelines for the use of supplemental metrics, which are increasingly being used in environmental documentation. The FAA currently is faced with developing these guidelines, and could use help from the research community. Mr. Johnson replied that he could see two approaches to dealing with this issue: (1) a new working group could be established within ASA to review metrics (this would require a written request to ASA; it is usually implemented when a Chair for the working group is found), or (2) FICAN could coordinate with Dr. Schomer's ASA Community Noise Working Group. He further stated that he believed that ISO standards were being developed under pressure from EC.

3.3 As a specific example, the Committee discussed the need for a working group on sleep disturbance. It was pointed out that the research conducted on sleep disturbance had used different metrics for each study, making comparison of results difficult. R. Kull said that peer review by such a working group could be useful in the design of research projects; for example, peer review before the U.K. sleep disturbance study might have resulted in the use of more consistent metrics. A. Powell pointed out that the results of NASA's ongoing sleep disturbance research might suggest that no further study of the issue is needed at this time; however, he thought it would be helpful to have a working group available to make suggestions on the direction of research, even if the working group did not develop a full standard.

3.4 The Committee agreed to recommend to ASA that they form a working group to address the issue of sleep disturbance. R. Kull volunteered to draft a letter to ASA with this recommendation [TASK]; G. Luz agreed to volunteer to ASA as Chairman of the working group [TASK]. G. Luz further indicated that the minutes should reflect the orderly process of the steps taken in the specific example of sleep disturbance: (1) the USAF funded a literature study of all known research, (2) the USAF study provided an interim

recommendation, (3) FICON included the interim recommendation in its report, (4) additional research was conducted by USAF/NASA, and (5) the results of the study will be applied and interpreted through the standards/working group process. D. Johnson indicated that he would follow up with FICAN on the possible mechanism (i.e., which subcommittee should be approached) for establishing a peer review group.

4. FICAN DISPLAY BOOTH

4.1 T. Connor asked R. Miller to brief the committee on the status of the booth HMMH will be preparing and attending at the Airports Council International - North America (ACI-NA) Conference in Toronto (25-28 September 1994). R. Miller indicated that the ACI-NA conference organizers will be providing a somewhat rigid booth structure; HMMH intends to develop appropriate graphics materials to affix to the walls of the booth (they will be covered in a velcro material). He indicated that HMMH would like some guidance from FICAN as to the message(s) to be conveyed by the booth.

4.2 R. Kull indicated, first, that he would like the ACI-NA booth developed in such a way that the material could be re-used at subsequent conferences, etc. R. Miller indicated that HMMH would do so [TASK]. R. Kull said that he thought the booth should convey the following: (1) that federal agencies are working together to address the problem of aviation noise; (2) that FICAN serves as the clearinghouse for those federal agencies; and (3) a general idea of some of the aviation noise research projects underway at the agencies. T. Connor indicated that a point should be made to solicit input from the public, airport representatives, etc.

4.3 Committee members agreed that the booth should contain a central photograph which conveys the idea of noise and people, surrounded by other graphics, and a mission statement (taken from the LOU). Members suggested various projects and/or graphics which should be included in the display. Members agreed to provide materials to HMMH by 19 August [TASK]; HMMH will prepare a draft layout for the booth for committee review by 1 September [TASK].

4.4 R. Miller added that the supply of reports likely would be exhausted once requests from the public forum had been completed; he suggested an additional printing might be in order for Toronto. The Committee agreed to print an additional 600 copies [TASK]. R. Kull added that at some point he would like FICAN to develop a "slick" brochure which conference attendees could take away with them. HMMH agreed to try to develop draft brochure by mid-September; however, it is unlikely the brochure could be completed for the ACI-NA meeting [TASK].

5. PUBLIC FORUM POST-MORTEM

5.1 T. Connor opened the discussion by saying that, overall, he thought the public forum was a great success. He thought there was very little that could be improved upon, but that the next forum should have more descriptive or focussed topic headings, and that some logistics could be improved a bit (e.g., roving microphone for audience participation). He added that he felt the Committee had received valuable feedback from the audience, and wondered how this feedback might be improved. G. Luz suggested that FICAN might consider an alternate meeting format whereby attendees would break into smaller discussion groups to increase the dialogue between conference attendees and researchers. These groups would then report back to the entire gathering at the conclusion of their discussions. T. Connor suggested that FICAN might explore such alternatives after reviewing the comment forms from the public forum.

5.2 The group agreed that there certainly should be future FICAN public forums. Discussion centered on whether or not subsequent forums should be more focussed (i.e., limited to fewer topics), and what the kinds of groups FICAN should try to draw in to additional forums. Committee members agreed that the diversity of people at the Atlanta forum was good: there were some knowledgeable professionals, as well as relatively uninformed residents, aviation planners and community activists; members also agreed that this diversity of representation had been a key factor in launching some of the more lively discussions. Several members of the Committee expressed the opinion that FICAN should not necessarily continue to meet in conjunction with N.O.I.S.E.; members agreed that, while N.O.I.S.E. provided a wide diversity of interests, that group did not represent *all* who might be interested in attending a FICAN public forum. The group also decided that future forums should be geographically distributed to provide greater opportunities for people throughout the country to attend, and suggested that the next forum be held either in the Midwest or on the West Coast. R. Miller agreed to research conferences scheduled for next year [TASK].

5.3 The group summarized the key issues raised at the public forum:

- *Metrics*: Need to develop guidance for the use of metrics to supplement DNL. Also, it is clear some people still do not think DNL an appropriate measure of aviation noise exposure.

- *General aviation and commuter noise issues:* It was clear from various discussions that many people feel the issue of general aviation and commuter noise is not being adequately addressed by researchers. Comments to that effect were made by community members, airport noise officers and members of the general aviation community.

- *Research vs. policy:* T. Connor was compelled to spend a great deal of time at the public forum explaining that research is FICAN's mission, not policy. However, it seemed that several members of the audience were not satisfied with his explanation. The Committee agreed they should develop a response in the annual report that characterizes the relationship between research and policy (i.e, that researchers provide technical input to policy makers), and be more specific about how the policy decisions are made, and by whom.

- *Health and social science research:* Several audience members remarked on the need for additional social science and psychology research, and went so far as to suggest that FICAN invite participation by the National Institutes of Health. T. Connor was not sure that NIH would have resources available to participate in FICAN, but would make inquiries [TASK].

- *Compliance with noise abatement procedures:* Several attendees indicated their perceived disregard of noise abatement procedures by pilots, and stated a need for better enforcement mechanisms. T. Connor indicated that he would like to build statistical uncertainties into the noise models. R. Kull added that the USAF is undertaking a study of the feasibility of radar tracking of military aircraft.

- *Representation of general public at FICAN:* T. Connor reiterated that FICAN membership is limited to federal agencies, according to the LOU. However, invited guests would certainly be welcome, as D. Johnson had been at the current meeting. A. Powell discussed the value of a diverse steering committee for the AST program, which includes C. Price (N.O.I.S.E.) and K. Robertson (DFW), who represent community and airport interests, respectively. The notion of a FICAN steering group was raised. T. Connor suggested that FICAN continue with its current format until it ceases to provide significant input.

- *Land use compatibility:* FICAN needs to communicate with the land use working group regarding its ongoing efforts in revising the land use compatibility guidelines.

6. FICAN ANNUAL REPORT

6.1 T. Connor started the discussion by stating that he hoped to release FICAN's annual report by the end of the year (December). The report should focus on the public forum, by describing the meeting format, issues raised, etc. The report also should incorporate and address the written comments collected at the forum. T. Connor also identified the need to address comments received from residents of Staten Island, NY, concerning the health effects of noise (these comments probably were prompted by the EECP, but FAA officials had decided they could be best addressed by FICAN). R. Kull suggested that the annual

report also should contain a bibliography of recent research reports produced by FICAN member agencies. Members agreed to provide that information to HMMH [TASK].

7. NEXT MEETING

7.1 T. Connor stated that he would contact members regarding possible dates for the next FICAN meeting, probably in October. Agenda discussions should include: (1) the annual report, (2) site of next public forum, and (3) research on overflight noise in National parks and wilderness areas.

8. ACTION PLAN

ASSIGNMENTS

Task		Assigned to
3-4	Draft letter to ASA requesting that they establish a working group to address sleep disturbance.	R. Kull
3-4	Volunteer to ASA to be Chairman of sleep disturbance working group	G. Luz
4-2	Develop FICAN booth materials	HMMH
4-3	Provide graphics materials for FICAN booth to HMMH by 19 August	All
4-3	Prepare layout of FICAN booth, and distribute draft to FICAN by 1 September.	HMMH
4-4	Arrange for 2nd printing of FICAN Status Report on Noise Research (600 copies)	HMMH
4-4	Draft FICAN brochure for possible use at ACI-NA (27 September)	HMMH
5-2	Research upcoming conferences for next public forum	HMMH
5-3	Invite NIH participation at FICAN	T. Connor
6-1	Provide bibliography material for annual report to HMMH	All

9. CLOSE

9.1 The meeting adjourned at 2:00 p.m.

Federal Interagency Committee on Aircraft Noise

(FICAN)

Third Meeting, July 28, 1994

Agenda

Time: 9:00 am to 3:00 pm
Location: Hyatt Regency Hotel, Atlanta

I. Introductions

II. Agenda
1. Review
2. Approve

III. FICAN and ASA
Guest: Dan Johnson

IV. FICAN Display Booth
1. Status
2. Use

V. Public Forum Post-mortem
1. Structure
2. Content
3. Public Input
4. Issues

VI. FICAN Annual Report
1. Schedule
2. Format
3. Content

VII. Next Meeting
1. Where?
2. When?
3. Issues?

VIII. Action Plan

IX. Close

B.4 4th FICAN Meeting: 13 October 1994

Federal Interagency Committee on Aviation Noise
(FICAN)
Washington, D.C.
13 October 1994
Minutes of Meeting

1. ATTENDANCE

1.1 The meeting began at 0900h with 11 persons present. Attendees are listed below. Mr. Jim Fields (Guest) joined the group at approximately 12:30 p.m.

Name:	Agency Represented:
Mr. Thomas L. Connor	DOT/FAA
Dr. George Luz	DOD/USArmy
Mr. Ken Mittelholz	EPA
Mr. Robert Lee	DOD/USAF
Mr. Alan Zusman	DOD/US Navy
Mr. James Littleton	DOT/FAA
Dr. Jay Plante	DOT/FAA
Ms. Pat Haman	EPA
Mr. Robert Miller	HMMH/Contractor
Ms. Mary Ellen Eagan	HMMH/Contractor
Mr. Nicholas Miller	HMMH, Guest
Mr. Jim Fields	Guest

1.2 Introductions were made for the benefit of new FICAN members: Mr. Bob Lee (replacing Major Bob Kull as the USAF representative) and Mr. Alan Zusman (US Navy representative). In addition, Mr. Nicholas Miller had been invited to address the group regarding issues of noise in National Parks and wilderness areas.

1.3 Members discussed the signing status of the Letter of Understanding with respect to DOD. Mr. Zusman agreed to follow up on when FICAN can expect a signature [TASK].

1.4 T. Connor distributed copies of the agenda There were no comments or changes.

1.5 T. Connor asked the group if there were any changes to the minutes of the last meeting (28 July, Atlanta). There were none.

1.6 T. Connor reviewed assignments from the last FICAN meeting:

(1) T. Connor distributed copies of the letter FICAN sent to Dan Johnson of the Acoustical Society of America (ASA), requesting that the ASA S-12 Committee consider forming a working group to address the issue of standards for noise-induced sleep disturbance. He said that Mr. Johnson had responded by telephone, informing T. Connor that Mr. Carl Pearsons had volunteered to chair a working group to address sleep disturbance issues. Mr. Johnson wanted to remind FICAN that these working groups typically operate on a "long time scale" and that the Committee should not expect immediate action. A formal/written response from ASA is expected.

(2) T. Connor made some inquiries at the National Institutes of Health, and has found a contact (Dr. Johnson) who may be interested in attending occasional FICAN meetings, particularly when health-related issues are discussed. T. Connor will continue to follow up with NIH [TASK].

(3) G. Luz distributed copies of a report entitled *Noise Around Oslo Airport Fornebu, A Sociological Survey*. The report gives initial results from a survey of community reactions to noise in the vicinity of Fornebu Airport, including health effects.

2. AIRPORTS COUNCIL INTERNATIONAL - NORTH AMERICAN CONFERENCE POST CONFERENCE ASSESSMENT

2.1 R. Miller and M. Eagan attended the Airports Council International - North America (ACI-NA) Third Annual Conference and Exhibit on behalf of FICAN. The conference was held in Toronto, from 2528 September 1994 [HMMH attended for 25-27 September]. R. Miller explained that HMMH made arrangements to set up a display booth in the exhibit hall for two days of the conference. Approximately 1800 airport professionals, consultants and elected officials (i.e., airport board members) attended the conference. HMMH distributed approximately 100 reports and survey forms and discussed airport noise issues with many conference attendees. R. Miller said that he believed that the real value of HMMH's attendance at the conference was publicity for FICAN -- ACI-NA represents a group of relatively senior level airport professionals who work directly with

airport noise issues. Increasingly, those people are aware of FICAN's role in federal aviation noise research programs. He added that there would probably be limited value in repeating the booth to the same audience (i.e., ACI-NA's 1995 conference), but that it worked well as a means of introducing FICAN to an important target group.

3. FICAN BROCHURE

3.1 HMMH distributed a draft conceptual layout for the group's review and comment. P. Haman suggested that any printed material bearing the EPA's logo should be environmentally acceptable -- soy ink, recycled paper, etc. Various members made suggestions regarding the layout, primarily with regard to the order of the panels. The Committee agreed that research topics covered in the brochure should be general so that the brochure would not require constant updates. HMMH agreed to pursue the layout, and provide a second draft to FICAN members with the minutes of the 4th FICAN meeting [TASK].

4. ANNUAL REPORT

4.1 At FICAN's July meeting (in Atlanta), the group discussed its annual report. The Committee discussed the format of the report further. T. Connor suggested that it be in standard "Report to Congress" format. The principal objective of the report is to discuss what FICAN has accomplished in its first year, including: the Atlanta public forum, the research report, definition of the roles and responsibilities of FICAN members with respect to both research and policy, and the four FICAN meetings. The report should also include a bibliography of research projects published since 1990 and ought to address comments received at the public forum as well as comments from Staten Island (NY) concerning the EECP. Committee members discussed the possible need to forward copies of the report to Congressional Members and/or Committees. FICAN members agreed to research recipients who follow their agency's actions [TASK].

4.2 There was some discussion by members concerning the policy statements they would need to prepare. Currently DOD has no written policy concerning the adoption of research results into practice, and the policy that exists is in flux. Other members suggested that the Army, the Air Force and the Navy should provide a joint statement emphasizing the relatively informal nature of the process at DOD. K. Mittelholz added that while EPA has an informal policy in the form of a Guidance Manual, there currently is no mechanism to incorporate research findings into policy directives.

4.3 The schedule for publishing the annual report by the end of the year will be tight. Committee members agreed to the following deadlines:

Task	Deadline
FICAN Members prepare bibliographies, forward to HMMH	15 November
FICAN Members forward policy statements to HMMH	15 November
HMMH Prepares DRAFT report, distribute to FICAN	28 November
FICAN reviews DRAFT report	5 December
HMMH delivers FINAL report to FICAN	31 December
FICAN members identify report recipients	31 December

5. NEXT PUBLIC FORUM

5.1 At its July meeting, FICAN agreed to hold a second public forum. T. Connor reminded the Committee that they had agreed that the location of the forum should be other than on the East Coast, and that FICAN should target an alternative audience to N.O.I.S.E. R. Miller stated that HMMH had investigated alternative conferences and settings, and suggested that the group consider holding its next forum in conjunction with the University of California Institute of Transportation Studies' Annual Airport Noise Program, which will be held 27 February - 1 March, 1995 in San Diego. This program consists of a two-day airport noise and land use compatibility symposium and a one-day airport noise management seminar. In 1994, the FAA's Land Use Compatibility Working Group met on a fourth day. M. Eagan suggested that the FICAN public forum would be a suitable substitute for that working group (which has completed its studies). Attendees at the conference include: airport noise officers, community activists, legal counsel, airline facilities managers, land use planners, state and federal aviation officials, airport planning consultants, and other aviation trade and promotional organizations.

R. Lee asked if the group had tried to target an audience of special interest groups focussed on parks and wilderness issues. T. Connor responded that it would be a good idea, but those people tend to be scattered throughout the country. A. Zusman offered to provide contacts for several groups he deals with on a regular basis, e.g. SkyGuard, Home on the Range, the Rural Alliance for Military Accountability [TASK]. K. Mittelholz suggested that FICAN try to schedule a forum at a meeting geared toward parks and wilderness audiences.

The Committee agreed that the San Diego conference seemed like a good target audience and that more effort should be made to recruit people concerned with parks and wilderness issues. HMMH will look into making arrangements for the forum [TASK].

5.2 The Committee discussed the format of the San Diego public forum. They reviewed recommendations made after the Atlanta forum: the discussion topics should generally be the same as in Atlanta, although they might be shortened somewhat; and discussion periods should be expanded.

M. Eagan stated that the slides prepared for the Atlanta forum are in good shape, and would require only minor revision for another forum. G. Luz restated his desire to use a professional meeting planner. R. Miller suggested that the individual HMMH had in mind could attend the meeting and critique it for the group afterwards. The Committee agreed that this is a good idea. HMMH will make arrangements [TASK].

6. OVERFLIGHT NOISE IN NATIONAL PARKS

6.1 T. Connor distributed copies of a draft report prepared by Jim Fields, entitled An Approach to Additional Study of Reactions to Aircraft Overflights in National Parks. He suggested that FICAN members review the report over the lunch break. The Committee then recessed for lunch.

6.2 T. Connor introduced Nick Miller of Harris Miller Miller & Hanson Inc. to present a summary of the National Park Service" Study of aircraft overflights. N. Miller distributed copies of overhead slides he had prepared for the group.

N. Miller started the discussion by posing the central issue of the NPS research: How can we consistently identify, analyze and minimize existing and potential impacts from airspace use over natural resource lands? He provided background on the issue, explaining that there are often conflicts in the mandates of different federal agencies. For example, land management agencies, such as the National Park Service, are charged with preserving natural resources and recreational opportunities (which can be internally contradictory); whereas the mission of agencies dealing with airspace, such as the FAA, is to provide an efficient and safe transportation network for commercial, military and recreational users. He said that the solution must be a cooperative land/airspace management program in which all interested parties can participate, using an agreed-upon methodology. An example of such a methodology is the FAA's FAR Part 150 Program.

N. Miller believes a methodology for parks would need to be flexible, fair and efficient to meet the needs of all interested parties. It would also need to meet the following three objectives: (1) the identification and quantification of existing or potential impacts, (2) an analysis of alternatives, and (3) a means to monitor implementation. The methodology would need to identify measurement methods, impact criteria, computational methods, resource land use information, and airspace use information.

N. Miller then presented an example of how such a methodology could be developed, using the park visitor dose-response survey from the Park Service's study. The goals of the survey were (1) to develop a relationship between aircraft overflight sound levels and visitor response, and (2) to provide a pragmatic tool for Park Service administrators to use in identifying and addressing noise problems at NPS units. The dose-response study has the following potential uses: to identify park sites having "significant" impact on visitors, to rank-order park sites in terms of impact on visitors, to evaluate the effectiveness of mitigation measures, and to evaluate the progress in reducing impacts. N. Miller presented data from the visitor dose-response study conducted at the Grand Canyon and Hawaii sites. The dose-response relationships were determined in terms of annoyance vs percent of time audible and annoyance vs Leq (1 hour) of audible aircraft. There are specific reasons for choosing each of these metrics: percent of time audible can be easily quantified by NPS personnel with minimal training and equipment, but cannot be computed using current modeling techniques; Leq can be computed, but would require a significant investment in training and equipment by the Park Service, and might not ultimately be a useful way of identifying problem areas.

The conclusions of the dose-response study are the following:

- Aircraft sound levels compared to non-aircraft sound levels are important in NPS settings, but virtually unmeasurable with current instrumentation technology.

- Many important variables are correlated with individual sites, including non-aircraft sound levels, aircraft sound levels and aircraft type.

- Visitor sensitivity by site needs to be determined.

N. Miller concluded his presentation by saying that the next step is to develop a proposed methodology, including the criteria, quantitative tools and implementation.

Further research could be directed in either of two ways: to fill in dose-response information for other park settings (horizontal investigation), or to apply the existing but limited dose-response methodology to an actual park problem and work towards a solution (vertical investigation).

6.3 J. Fields presented his approach to obtain more information on reactions to aircraft overflights in NPS units. He started by identifying several goals for new research on overflight noise: (1) to determine the relative impact of aircraft noise on different types of activities, e.g., sightseeing, short hikes, backcountry hikes; (2) to determine the relative effectiveness of Leq and Percent of Time Audible as predictors of response; (3) to determine a dose-response relationship for low altitude jet aircraft (primarily military training), and (4) to determine differences in response for different aircraft types, namely rotorcraft, high altitude jets, and low altitude jets.

He explained that the "error bands" in the NPS data were large because there is insufficient data. They can be narrowed by increasing the types of study areas, the number of study areas, the number of site-days for which data are collected, etc. Each of these options, however, could significantly increase the cost of further defining the dose-response relationship. Specific suggestions to minimize cost are: to manipulate the noise environment, by scheduling overflights; to study more predictable noise events; to reduce the size and skill level of the study team; to adjust the on-site program using real-time results; and to consider sites with buildings.

FICAN members discussed individual agency concerns and priorities for research in this area. T. Connor indicated that the FAA is concerned with the potential loss of navigable airspace. G. Luz pointed out that there are at least four SEL models currently available. J. Fields suggested that FICAN members identify study objectives for each agency, and prioritize them based on the individual agency's interpretation of the importance of study objectives [TASK].

7. OTHER ISSUES

7.1 T. Connor indicated that A. Zusman wanted to discuss ambient noise issues. However, since A. Zusman left at the noon break, the issue was tabled for the next meeting. J. Fields indicated that he was in the process of re-analyzing social survey data from 28 surveys of the differences in annoyance from ambient (primarily traffic) and "target" (primarily aviation) noise.

7.2 T. Connor presented the FAA's recently developed approach to deal with general aviation noise issues, and reminded the group that this issue came up at the public forum in Atlanta. There are several drivers to the program: general aviation noise is perceived as a growing problem throughout the country; propeller-driven aircraft are of concern in the ongoing work at park and wilderness areas; and FAA Authorization of 1994, Section 308, specifically identified the need for investigation of the status of noise reduction technology research and development for general aviation aircraft. The FAA's plan is to: (1) establish an FAA/NASA working group, (2) publish a Federal Register notice concerning the program; (3) assess the current technology and research in general aviation noise reduction technologies, (4) convene a team to review the results, and (5) prepare a report to Congress.

R. Lee indicated that the USAF is testing an active noise control system designed for a twin propeller aircraft that uses asynchronization of the propellers; researchers hope to realize a 5 to 6 dBA reduction in noise levels on the ground.

8. NEXT MEETING

8.1 The group agreed to hold the next FICAN meeting the day after the San Diego public forum, Friday, 3 March 1995. Issues for discussion would include a review of the public forum and the tabled ambient noise discussion (Item 7.1).

9. ASSIGNMENTS

9.1 Assignments are listed below.

Task		Assigned to
1-2	DOD sign Letter of Understanding	A. Zusman
1-5	Prepare 2nd Draft FICAN Brochure	HMMH
4-3	Prepare bibliographies, forward to HMMH	All - 16 November
4-3	Prepare policy statements, forward to HMMH	All - 16 November
4-3	Prepared Draft Annual Report, forward to FICAN	HMMH - 28 November
4-3	Prepare Final Annual Report, distribute to FICAN	HMMH - 31 December
4-3	Identify Annual Report Recipients	All - 31 December
5-1	Provide contacts for special interest groups concerned with wilderness issues	A. Zusman
5-1	Make arrangements for public forum in San Diego, 2 March 1995	HMMH
5-1	Make arrangements for public forum observer	HMMH
6-3	Identify/prioritize study objectives for research on response to overflights of national parks and wilderness, forward to J. Fields.	All

10. CLOSE

10.1 The meeting adjourned at 3:30 p.m.

NOTE: Copies of all distributed materials are available from HMMH.

Federal Interagency Committee on Aircraft Noise

(FICAN)

Fourth Meeting, October 13, 1994

Agenda

Time: 9:00 am to 3:30 pm
Location: Conference Room 5C at FAA Washington HQ

1. **Administration**
   a. Introductions
   b. Agenda
   c. Minutes of last meeting
   d. Task assignments
      (1) Letter to ASA -- T. Connor
      (2) NIH invitation -- T. Connor
2. **Airports Council International - North American Conference Post-mortem**
3. **FICAN Brochure**
4. **FICAN Annual Report**
   a. Format
   b. Content
   c. Bibliography
   d. Schedule
5. **Next Public Forum**
   a. Where?
   b. When?
   c. With Whom?
6. **Overflight Noise in National Parks and Wilderness Areas**
   a. Briefing on research plans -- USAF
   b. Discussion of completed research and findings
   c. Technical Issues?
   d. Conclusions and resolutions
7. **Other Issues**
   a. Background/ambient noise (A. Zusman)
   b. GA Noise Reduction Research
8. **Next Meeting**
   a. Where?
   b. When?
   c. Issues?
9. **Action Plan**
10. **Close**

B.5 FICAN Correspondence

U.S.Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

APR 8 1

Mr. Charles F. Price
Executive Director
NOISE
1225 Eye Street, N.W., Suite 300
Washington, DC 20005

Dear Mr. Price:

As I indicated in my interim response to your letter of February 8, the Federal Interagency Committee on Aviation Noise (FICAN) met on March 28-29 and one of the discussion items was your proposal. We agree with you that one of FICAN's major aims is to involve the public in the Federal government's noise effects research efforts. We concluded that our response to your proposal needs to clarify the role of FICAN.

FICAN will not conduct or fund any research. The individual Federal agencies control the direction and funding of their research programs. FICAN will serve as a forum for members to discuss research findings, identify topics requiring research, and solicit the public's concerns about aviation noise effects. We envision that FICAN will lead to expanded coordination and cooperative research efforts among individual agencies and, thus, result in more efficient use of Federal funds for aviation noise research.

The annual public forum, under development by FICAN, will provide the mechanism for direct discourse between the Federal researchers and interested public parties. The researchers will learn of the public's most pressing concerns about aviation noise and design research programs accordingly. Interested parties will gain first-hand details about ongoing and future projects, such as the U.S. sleep disturbance studies. As you and I discussed over the telephone on March 30, FICAN plans to hold the first FICAN public forum to coincide with the NOISE Conference in July. The committee believes this should be an effective way to reach the interested public. I will provide you with more details including the public announcement as soon as we have made the necessary arrangements.

Since the proposed July forum is our first, we also seek ways to improve it in the future. In the Federal Register that will announce the public forum and during the public forum itself, we will solicit ideas on how to conduct future forums. As you say in your letter, we want this forum to serve as the means to maximize public involvement.

Regarding the contract review issue, the Code of Federal Regulations (CFR) 48, Federal Acquisition Regulations (FAR) System, establishes the acquisition procedures for all Federal agencies. The FAR is a comprehensive directive covering all phases of acquisition. In summary, the Federal agency defines the scope of the research, selects contractors, and establishes milestones. The FAR also provides considerable guidance regarding the pre- and post-award functions of the technical officer (Federal researcher). FICAN and the associated public forums will help the Federal agencies both accommodate the public's concerns and maximize the value of their aviation noise research programs carried out under the Federal acquisition process.

We look forward to working with you and the other interested parties in creating an effective Federal aviation noise research program. While we are initially planning only one formal FICAN public forum per year, we will release information concerning FICAN activities in the interim should any noteworthy events occur.

Sincerely,

/S/ THOMAS L. CONNOR

Thomas L. Connor
FICAN Chairman

cc: AEE-1/2/300

AUG 18 1994

Dr. Dan Johnson
(Chair S-12, Noise)
C/O Biophysics Operations
EG&G Special Projects
P. O. Box 9100
Albuquerque, NM 87119

Dear Dr. Johnson:

The Federal Interagency Committee on Aviation Noise (FICAN) met on 28 July 1994 to discuss various topics of mutual concern to the participating agencies. Among the items discussed was the standardization of methodolgy and metrics for aircraft noise and resulting sleep disturbance. The FICAN agreed to request the Acoustical Society of American, S-12 Committee consider a working group addressing the issue of standards for noise induced sleep disturbance. Some of the issues that might be addressed by this S-12 working are the following:

a. Is the current sleep disturbance curve, adopted by FICON in 1992, still valid or should a new dose-response curve, based on recent CAA, USAF, and NASA field studies, be developed?
b. Should outdoor or indoor measurements be used to determine exposure levels?
c. Should threshold criteria be based on outdoor or indoor levels?
d. What is the most appropriate metric to use for criteria- SEL, Lmax, Lcq, Ldn, or some other metric?
e. Should on-set rate by factored into the exposure criteria?
f. What is the most appropriate measure for the prediction of sleep disturbance (i.e. actual awakenings, sleep stage changes, EEG/EKG measures, actimeter measures) in assessing the impact of changes in aircraft operations?
g. Should background noise be addressed, and if so, how should it be taken into account?

If S-12 establishes a working group for these important issues, some of the scientific personnel of the FICAN organizations would certainly be involved. I hope you can find a suitable person to serve as working group chair. I look forward to hearing your response to this request. Please feel free to call me at 202-267-3570.

Sincerely,

/S/

Thomas L. Connor

AEE-100:TCONNOR:njc:78933:08/18/94
wp.microsoftword:d:doc.Johnson

APPENDIX C. BIBLIOGRAPHY OF RESEARCH REPORTS

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APPENDIX D. PUBLIC FORUM AND COMMENTS

D.1 Public Forum Publicity

U.S.Department
of Transportation
Federal Aviation
Administration

800 Independence Ave., S.W.
Washington, D.C. 20591

June 10, 1994

On behalf of the Federal Interagency Committee on Aviation Noise (FICAN), I would like to invite you to attend our first public forum, which will be held on 27 July 1994, at the Richard B. Russell Building, 75 Spring Street, Atlanta, Georgia.

The main objectives of FICAN are: (1) to provide information to the public on aviation noise research projects conducted by Federal agencies, (2) to solicit input from the general public and technical community regarding the direction of Federal aviation noise research, and (3) to provide an opportunity for Federal researchers to share research goals and results. The public forum aims to satisfy the second of these goals.

The Atlanta site was selected with the intention of attracting members of the National Organization to Insure a Sound-controlled Environment (N.O.I.S.E.), which will be holding its annual conference in Atlanta concurrently. We hope that other members of the general public, aviation and technical communities can join us, as well.

We expect the format of the public forum to include brief presentations by agency researchers on the status of aviation noise research, followed by public comment. Commenters will be requested to notify the Committee by 15 July, in order to allow organizers sufficient time to schedule all presentations. We intend to structure the presentations and comment periods into the following subject areas: land use compatibility, community reactions to aircraft noise, perception of aircraft/background noise, rotary wing issues, noise reduction technologies, noise effects on animals, noise model developments, public information/education, and structural damage. More detailed information on the research projects will be available in the FICAN *Report on Aviation Noise Research Conducted by U.S. Federal Agencies*, copies of which will be available through the Federal Aviation Administration.

Further information on the FICAN public forum will be announced in the Federal Register on 8 June 1994. The report also will be available at that time. Please contact Mr. Tom Connor at (202) 267-3570 if you have any questions about the FICAN public forum, or would like to submit a comment at the meeting.

We look forward to your participation in the public forum.

Sincerely,

Thomas L. Connor

Thomas L. Connor
Chairman, FICAN

FICAN

Federal Interagency Committee on Aviation Noise

Public Forum on Federal Research to Address Aviation Noise Issues

The first annual FICAN public forum will be held on **July 27 in the main conference room at the Richard B. Russell Federal Building, 75 Spring Street, Atlanta, GA.** The public forum will consist of a morning and an afternoon session. The sessions will address the following topics:

Morning (9:00am - 12:00pm)	Afternoon (1:00pm - 5:30pm)
• Land Use Compatibility	• Noise Model Development
• Rotary Wing Issues	• Community Reaction to Aircraft Noise
• Structural Damage	• Perception of Aircraft Noise
• Noise Reduction Technologies	• Public Information
• Noise Effects on Animals	

Complete the following steps as appropriate.

1. If you would like to present oral comments at the FICAN public forum, please check the appropriate session and indicate the topic of interest in that session:

☐ Morning Topic: _____

☐ Afternoon Topic: _____

(You will be contacted on your assigned time slot.)

2. Check the following boxes as appropriate:

☐ Please send me a copy of the FICAN report.

☐ Please add my name to the FICAN mailing list.

3. Please fill in your name address and phone number(s):

Name: _____

Address: _____

_____

_____

Telephone: _____

Fax: _____

4. Mail or fax this form to:

Harris Miller Miller & Hanson Inc.
429 Marrett Road
Lexington, MA 02173
ATTN: Mary Ellen Eagan
Fax Number: 617-861-8188

U.S. Department of Transportation

News:

Office of the Assistant Secretary for Public Affairs
Washington, D.C. 20590

FOR IMMEDIATE RELEASE
Monday, July 18, 1994

FAA 22-94
Contact: Pat Cariseo
(202) 267-8521

AVIATION NOISE PUBLIC FORUM TO BE HELD IN ATLANTA

A federal interagency group will hold a public forum in Atlanta July 27 to exchange information on aircraft noise.

The forum represents the first nationwide session sponsored by the Federal Interagency Committee on Aviation Noise. The group, chaired by the Department of Transportation, includes the Department of Defense, the National Aeronautics and Space Administration, and the Department of Interior.

The committee was formed early last year to discuss public and private noise proposals, identify research areas, encourage noise research and promote noise-abatement technology. The government plans to hold other forums, similar to the Atlanta meeting, in other parts of the country.

At the Atlanta forum, government agencies will present their latest research on aircraft noise and the public is invited to provide information and make comments. The meeting will be held from 9 a.m. to 5 p.m. at the Russell Federal Building, 75 Spring Street.

"We will present the findings from about a hundred research studies on aviation noise," said FAA Administrator David R. Hinson. "The forum is an excellent opportunity to get information to the public on this complex issue. We also expect valuable comments from other aviation noise experts and the general public attending the meeting."

-more-

The research presented at the meeting will include aviation noise reduction technology and the impact of noise on people, animals and property. After each presentation, time will be allotted for audience questions. Public comments may be presented at the morning and afternoon sessions.

Those interested in commenting should contact the Federal Aviation Administration (FAA) no later than July 22 by writing or calling Thomas Connor, FAA Office of Environment and Energy, 800 Independence Avenue, S.W., Washington, D.C. 20591, (202) 267-3570.

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20036; (202) 833–9339. Any member of the public may present a written statement to the committee at any time.

Issued in Washington, DC, on June 2, 1994.

Dave Ford,

Designated Officer.

[FR Doc. 94–14293 Filed 6–10–94; 8:45 am]

BILLING CODE 4910–13–M

RTCA, Inc.; Special Committee 181, Fourth Meeting; Aviation Systems Design Guidelines for Open Systems Interconnection (OSI)

Pursuant to section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463, 5 U.S.C., Appendix I), notice is hereby given for Special Committee 181 meeting to be held June 20–24, starting at 9 a.m. The meeting will be held at the Red Lion Hotel, 300 112th Avenue, SE., Bellevue, Washington, DC; (P) 206–455–1300/Boeing Host: Dave Nakamura (P) 206–4552.

Specific Working Groups Sessions

June 20–21

Working Groups 1 and 3: Meeting space will be provided at the hotel for these sessions.

June 22–24 Plenary Agenda

Note: Committee officers working group chairman, and secretaries will meet at 0800 on June 22 prior to the plenary and again on June 24:

June 22 Morning

(1) Opening remarks/introductions;

(2) Review of the agenda;

(3) Approval of the summary of the third meeting, RTCA Paper No. 219–94/SC181–28 (previously mailed).

Note: Paper number was inadvertently left off of the mailed copy and has been added for filing and reference purposes.

(4) Committee reports: (a) P–RNAV AMJ Editorial Group—Geoff Burtenshaw (b) RTCA Technical Management Committee Briefing—Frank Alexander.

(5) Working Group Reports: (a) Working Group 2—Jim Terpstra (b) Containment Surface Sub-group—Frank Alexander.

Afternoon of June 22 and June 23

Working Group Meetings.

June 24 Morning

(6) Working Group Reports (Working Groups 1 and 3);

(7) Other business;

(8) Date and place of next meeting.

Attendance is open to the interested public but limited to space availability. With the approval of the Chairman, members of the public may present oral statements at the meeting. Persons wishing to present statements or obtain information should contact the RTCA Secretariat, 1140 Connecticut Avenue, NW., Suite 1020, Washington, DC 20036; (202) 833–9339. Any member of the public may present a written statement to the committee at any time.

Issued in Washington, DC, on June 2, 1994.

Dave Ford,

Designated Officer.

[FR Doc. 94–14294 Filed 6–10–94; 8:45 am]

BILLING CODE 4910–13–M

Federal Interagency Committee on Aircraft Noise Meeting Agenda

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of public forum.

SUMMARY: The FAA is issuing this notice to advise the public of a forum sponsored by the Federal Interagency Committee on Aircraft Noise (FICAN) to discuss aircraft noise issues.

DATES: The forum will be held on July 27, 1994, at the Richard B. Russel Building.

ADDRESSES: The forum will be held at 75 Spring Street, Atlanta, Georgia.

FOR FURTHER INFORMATION CONTACT: Mr. Thomas Connor, Manager, Technology Division (AEE–100), Office of Environment and Energy, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591, fax (202) 267–5594.

SUPPLEMENTARY INFORMATION: Notice is hereby given of a public forum sponsored by the Federal Interagency Committee on Aircraft Noise (FICAN) to be held on July 27, 1994.

On March 16, 1993, representatives of the agencies that participated on the Federal Interagency Committee on Noise (FICON) met and agreed to establish a standing committee to be known as FICAN. The standing interagency committee will provide a permanent aviation noise research and development (R&D) forum, which will assist agencies in providing adequate forums for discussion of public and private proposals, identify needed research, and encouraging R&D efforts in these areas.

The agenda for the meeting will include:

- Presentation of current and future aircraft noise research projects that are funded by the Federal members of FICAN.
- Public concern/discussion and comment period.

Attendance is open to the public, but will be limited to the space available. The public must make arrangements by July 15, 1994, to present oral statements at the forum. Arrangements may be made by contacting the person listed under the heading FOR FURTHER INFORMATION CONTACT. Sign and oral interpretation can be made available at the meeting, as well as an assistive listening device, if requested 10 calendar days before the forum. Written comments should be addressed to the person listed under the heading FOR FURTHER INFORMATION CONTACT. Comments must be received on or before August 12, 1994.

Thomas Connor,

Manager Technology Division, Office of Environment and Energy.

[FR Doc. 94–13918 Filed 6–10–94; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF THE TREASURY

Public Information Collection Requirements Submitted to OMB for Review.

June 2, 1994.

The Department of Treasury has submitted the following public information collection requirement(s) to OMB for review and clearance under the Paperwork Reduction Act of 1980, Public Law 96–511. Copies of the submission(s) may be obtained by calling the Treasury Bureau Clearance Officer listed. Comments regarding this information collection should be addressed to the OMB reviewer listed and to the Treasury Department Clearance Officer, Department of the Treasury, Room 2110, 1425 New York Avenue, NW., Washington, DC 20220.

Office of Thrift Supervision (OTS)

OMB Number: 1550–0025.

Form Number: OTS Form 1314 (Canceled) and OTS Forms 1584 (New) 1585 (New) and 1589 (Replaces OTS Form 1314).

Type of Review: Revision.

Title: Purchase of Branch Office(s)/Transfer of Assets and/or Liabilities.

Description: Information provided to OTS is evaluated to determine whether the proposed assumption of liabilities and/or transfer of assets transactions complies with applicable laws, regulations and policy, and will not have an adverse effect on the risk exposure to the insurance fund.

Respondents: Businesses or other for profit.

Estimated Number of Respondents: 135.

Estimated Burden Hours Per Respondent: 4 hours, 2 minutes.

Frequency of Response: Other (Information is submitted each time a transfer of assets and/or liabilities are proposed.)

Estimated Total Reporting Burden: 545 hours.

D.2 Public Forum Agenda

Federal Interagency Committee on Aviation Noise
(FICAN)
Public Forum on Federal Research to Address Aircraft Noise Issues

8:30 a.m. - 5:30 p.m.	**Sign-in Desk and Written Comment Drop Box**	
9:00 a.m. - 12:00 p.m.	**Morning Session**	
9:00 a.m. - 9:15 a.m.	Introduction/Opening Remarks	
	HMMH/R. Miller	
	FAA/T. Connor, Chairman	
	<u>Presentations on Current Federal Research Projects</u>	
9:15 a.m. - 9:45 a.m.	Land Use Compatibility	
	FAA/T. Connor	9:15 - 9:25
	Comments	
	C. Price	9:25 - 9:30
	H. Holden	9:30 - 9:35
	S. Spencer	9:35 - 9:40
	Questions	9:40 - 9:45
9:45 a.m. - 10:00 a.m.	Rotary Wing Issues	
	USA/G. Luz	9:45 - 9:55
	Questions	9:55 - 10:00
10:00 a.m. - 10:15 a.m.	Structural Damage	
	USAF/R. Kull	10:00 - 10:10
	Questions	10:10 - 10:15
10:15 a.m. - 10:30 a.m.	Break	
10:30 a.m. - 11:05 a.m.	Noise Reduction Technologies	
	NASA/A. Powell	10:30 - 10:45
	USAF/R. Kull	10:45 - 10:55
	Comments	
	S. Spencer	10:55 - 11:00
	Questions	11: 00 - 11:05
11:05 a.m. - 11:30 a.m.	Noise Effects on Animals	
	USAF/R. Kull	11:05 - 11:20
	Questions	11:20 - 11:30
11:30 a.m. - 12:00 p.m.	Public Comment Period	
12:00 p.m. - 1:00 p.m.	Lunch	

1:00 p.m. - 5:30 p.m.	**Afternoon Session**	
1:00 p.m. - 1:15 p.m.	Introduction/Comments HMMH/R. Miller	
1:15 p.m. - 2:00 p.m.	Noise Model Developments	
	USAF/R. Kull	1:15 - 1:20
	FAA/T. Connor	1:20 - 1:30
	Comments	
	K. Robertson	1:30 - 1:35
	D. Johnson	1:45 - 1:50
	S. Spencer	1:50 - 1:55
	Questions	1:55 - 2:00
2:00 p.m. - 3:00 p.m.	Community Reaction to Aircraft Noise	
	NASA/ A. Powell	2:00 - 2:10
	USA/G. Luz	2:10 - 2:20
	USAF/R. Kull	2:20 - 2:30
	Comments	
	C. Price	2:30 - 2:35
	S. Spencer	2:35 - 2:40
	S. Staples	2:40 - 2:45
	R. Hefner	2:45 - 2:50
	Questions	2:50 - 3:00
3:00 p.m. - 3:15 p.m.	Break	
3:15 p.m. - 3:45 p.m.	Perception of Aircraft Noise	
	FAA/ T. Connor	3:15 - 3:25
	Comments	
	C. Price	3:25 - 3:30
	S. Spencer	3:30- 3:35
	S. Fidell	3:35 - 3:40
	Questions	3:40 - 3:45
3:45 p.m. - 4:15 p.m.	Public Information	
	FAA/T. Connor	3:45 - 3:55
	Comments	
	C. Price	3:55 - 4:00
	S. Spencer	4:00 - 4:05
	Questions	4:05 - 4:15
4:15 p.m. - 5:00 p.m.	Public Comment Period	
5:00 p.m.	Closing Remarks FAA/T. Connor	

D.3 Public Forum Sign-in Sheet

FICAN

Federal Interagency Committee on Aviation Noise

Name	Organization
Roberta Mistretta	Orchard Knob Community
Douglas Wilson	City of Dearborn, Michigan
John Williams	Leigh Fisher Assoc
Erich M. Shea	Noise Regulation Report
Chas. L. Feltus	Citizen
Charles F. Price	N.O.I.S.E.
Jon M Woodward	Landrum & Brown
Barbara Filiatreau	citizen
Roy Nafus	Citizen NOISE
Dianna Cope	LAX Area Advisory Com.
Neal Phillips	Metro. Washington Airports Auth.
Sharron Spencer	City Council - Grapevine, TX
Jim Mccadden	FAA AEE
Dorn McGrath	Geo. Washington Univ.
Avery Vise	Aviation Daily
Jackie Sweatt	FAA Airports Division SO Region
Betty Harrison	FAA
Lee Kyker	FAA ATL/ADO
Cindy Minter	Aviation Planning Associates
Amy Macpherrcs	HNTB
Marlon Millner	Atl. Journal & Constitution

FICAN

Federal Interagency Committee on Aviation Noise

Name	Organization
H.G. Holden	City Hall, 350 Main St City of El Segundo CA 90245
Laverne F. Reed	FAA, Airports Div. Southern Region, College PK, GA
Myrna White	Hartsfield Atl Intl Airport (Dept. Aviation) Atlanta, Ga. 30320 City of Atl
RODGER MODGLIN	NORDAM 624 E. 4TH ST. TULSA, OK 74120
RANS BLACK	ATLANTA AIRPORTS DISTRICT OFFICE F.A.A.
SAM AUSTIN	"
BETTY HOLLAWAY	HARTSFIELD ATL. INTL. AIRPORT NOISE ABATEMENT PROGRAM
DAVE INGRAM	GRSINGR INC TAMPA, FL
Dick Linn	DFW AIRPORT
Lin Wang	Van Nuys Airport
Glenn Woodman	Port of Portland - PDX
DAVID F. CARBONE	COUNTY OF SAN MATEO CALIFORNIA
Sandy Frye	U.S. Dept. of HUD
CAL Edmondson	RDU AIRPORT Authority
Ray Bush	US GAO
Molly Martin	GAMA
VIJAY R. DESAI	BOOZ. ALLEN & HAMILTON
PETER FITZGERALD	[illegible]
GRAHAM WARWICK	FLIGHT INT'N'L
Paige Smith	U.S. GAO
Virginia Jackson	DeKalb Peachtree Airport

FICAN

Federal Interagency Committee on Aviation Noise

Name	Organization
Thurman Owens	Boone Cty, Ky Commiss
ERIC STUSNICK	WYLE LABORATORIES
Mark Adams	Los Angeles Int'l Airport
Karen Roberts	DFW Airport
Anne Kohut	Airport Noise Report
Wes Hoglund	Noise State L MN.
Harold L. Merck	Merck & Hill, Ltd.
CARL F. STOKOE	FAA SO. REGION
Robert Sachs	Sachs & Hamilton
Lisa Barrera	Van Nuys Airport
Juanita Craft-Lloyd	FAA, Atlanta ACO
Monica Alcalin	MITRE, McLean, VA
Walter Bauer	ATL ADO/FAA
Richard Kassel	Natural Resources Defense Council
Will Kinard	Bruel & Kjaer Inst.
Jan Johnson	EG+G MSI
SANFORD FIDELL	BBN
Darrell Norman	D. A. Norman & Associates
Jane Schneider	citizen

FICAN

Federal Interagency Committee on Aviation Noise

Name	Organization
Susan Stapleton	Ulsterkiss Light Overflight Noise

D.4 Public Forum Comments

Name/Affiliation/Location	Nature of Comment
Roy Hefner LAX Citywide Advisory Committee Westchester, CA	"I respect the efforts put forth by the FICAN members. We should say 'there is noise' and proceed to reduce it to the best of our ability regardless of past, present or future studies."
Avery Vise Aviation Daily/Airports Weekly Washington, DC	"The forum was very good considering its scope. However, I would recommend that the committee consider holding forums more often but with a more narrow focus. One forum, for example, could focus strictly on land use compatibility, while another could be held on noise model developments or the effects on animals. Segmenting the forums might be a bigger hassle, however, and some forums might draw almost minuscule attendance. But it's worth a try."
Rodger Modglin Nordam Tulsa, OK	"Nordam as a developer, certifier, producer and seller of hush kits for large transport category aircraft, specifically the 737-200, is concerned that the noise measuring systems and procedures, as approved by the FAA, used for certifying Stage 3 aircraft are not consistent. There are a very small number of FAA approved systems both hardware and software in the U.S. However, it is believed that the spread of results across these systems, for the same noise source, would be in excess of 1 EPNdB. This spread grows considerably when weather variations are added. The result is hush kits approved as meeting Stage 3 when this is true only with a particular noise measuring system on a particular day. However, the public will be exposed day after day at a level that is above the intent of the law. Nordam believes that the FAA should require all approved noise measuring systems to demonstrate positively the same results for a given noise source that represents a typical aircraft spectra. Also more research is needed to improve weather correlation procedures particularly wind and dew point effects. The majority of transport aircraft currently flying are Stage 2 and will likely be hush kitted to meet Stage 3 rules in the next 6 years. If hush kits are certified that are marginal or inappropriate, the public will reject the Stage 2 to Stage 3 move as phony and will demand change. The results of current hush kit programs must be judged against scientifically expected results as well as actual measurements until a program to make all certification systems equal is completed."
Betty Hollaway City of Atlanta - HAIA - Airport Noise Abatement College Park, GA	"Aircraft noise is becoming the #1 problem for residential areas surrounding airports. We need more guidance and research on dealing with this issue. Please provide me with the information contained in the slide presentations and the following publications... I would also like to say, the information provided by the FICAN panel was informative and encouraging."

Name/Affiliation/Location	Nature of Comment
Lin Wang Van Nuys Airport Van Nuys, CA	"One suggestion, when conducting a study with limited scope, contact the local jurisdiction/airport to get background information that will not surface with a literature search."
Mark Adams Los Angeles Department of Airports Noise Management Bureau Los Angeles, CA	"Please send a copy of slides from presentations. Good meeting!"
John Williams Leigh Fisher Associates San Mateo, CA	"This was a good, helpful meeting. One suggestion would be to hold the meetings in an environment that would be more conducive to interaction among attendees. It may help to hold the q and a portions (just before lunch and at the end of the day) in a large conference room adjacent to the main presentation room. Although it would require moving the group, which can be disruptive; but it would allow the presentations and comments to proceed as they did today, and it would encourage more input. Again, this was a well-run, informative meeting. As a suggested research project, it would be informative to collect data from airport environs using surveys or other techniques to determine aircraft noise perception in terms of: frequency of operations vs. maximum noise levels (this would be geared to help address the commuter issue that was discussed at length); concentration of operations during peak periods (this would obviously affect hub airports more than o-d airports, and it may hep address the issue regrading commuter operations and why 'noise problems' as currently defined by criterion DNL values commonly do not identify areas that are overflown primarily by commuter aircraft); more information regrading the time of day and the calculation of DNL. For example: at most hub airports the morning and evening peaks coincide with family activities (e.g., breakfast and evening meals), DNL does not capture this; schools and religious facilities generally are not affected by noise between 10 p.m. and 7 a.m."
Monica Alcabin The MITRE Corporation McLean, VA	"Very useful forum! Good chance for those doing work in the industry to hear what others are working on. I totally agree that FICAN should pool resources and set priorities of research. Bibliography of all papers referred to today would be incredibly helpful. Incredibly informative forum. Well worth the time! Thanks!"

Name/Affiliation/Location	Nature of Comment
Thurman Owens Boone County Kentucky Planning Commission Burlington, KY	"1. Administrative - repeat questions from audience and have responder use a mike (fixed in p.m. session) (partially) 2. Next session should include FAA policy maker or policy evaluator. re: question on the poor performance of the Part 150 program. 3. Why has it taken so long to go to a public forum format? 4. No amount of modeling/monitoring systems, radar tracks or training of ATC people will solve the noise problem until such time as the FAA comes down hard on aircraft commanders who choose to fly wherever they wish and do not follow the authorized flight tracks."
Lisa Barrena Citizens Advisory Council Van Nuys Van Nuys, CA	"More info about HNM please."
Karen Robertson DFW International Airport	"1) Please send copy of slides. 2) You did a really good job organizing the presentations. Slides were in order, similar in format and easy to read. Lots of hard work! Job well done! 3) You all need to "get out" more, and connect with "real world" concerns. While most research topics are relevant, some are difficult to explain to irate citizens on why funding is allocated the way it is. I would like to invite you, at your convenience, to DFW Airport, to meet with local citizens, controllers and airline representatives, to discuss aircraft noise issues. 4) I would like to see more research/analysis on multi-family vs. single family dwellings re: annoyance, land use planning, housing/rental rates. Also, renter vs. owner reactions. Many cities use multi-family dwellings as a "buffer" between industrial, high noise/airports and less dense land uses, such as detached single family/estates.
Amy MacPhetres HNTB Corporation Atlanta, GA	"Meeting went smoother second half with question-answer session, first half questions were hard to hear. Copies of overheads would be more useful to have during the meetings."

City of El Segundo

AIRPORT PROJECTS ADMINISTRATOR

AUG 9 1994

HARRIS MILLER
MILLER & HANSON

August 4, 1994

Mr. Bob Miller
Principal
Harris Miller Miller & Hanson
15 New England Executive Park
Burlington, MA 01803

Dear Mr. Miller:

At the FICAN conference in Atlanta on 27 July 1994, you asked me for a written copy of my remarks during the Land Use Compatibility session. I herewith forward those remarks to you.

It is my hope that Mr. Conner, or someone from the multitude of federal agencies wrestling with the airport noise mitigation issue will address the messy, multi-tentacled issue of the impacts of airport noise on people. With the possible exception of HUD's one time involvement, most of the agencies currently addressing the intertwined issues have an engineering orientation. They keep addressing measurement of the mechanical issues rather than addressing the less quantifiable human impact issues.

Additionally, it seems to me that the wagon of governmental concern for this issue is being drawn by a strong group, not necessarily a team, with no wagon master.

Thank you for your interest in my ramblings.

Sincerely,

Harvey G. Holden

350 Main Street, El Segundo, California 90245-0989 FAX (310) 322-7137 Phone (310) 322-4670

REMARKS TO THE FICAN

Purpose: I am here to address the issue of Residential Sound Insulation programs, specifically RSI programs requiring easements.

I realize that the focus of this committee is technological innovation and application. However, I want to urge the Committee to keep in mind its purpose, which is to concern itself with the impact of noise on people and to examine impact mitigation proposals.

1. This Committee concerns itself with the impact of airport noise on people. Such impact potentially effects much more than the public's hearing. It can have psychological, fiscal and legal impacts. For example:

Most airports with RSI programs require easements. Therefore attempts by most homeowners seeking relief from airport noise results in loss of their sole use of the immediate atmospheric envelope surrounding their home, a clear, legal rather than acoustic impact on people.

2. The second reason this topic falls within the purview of this committee is that you are examining public and private noise proposals.

Proposal: My proposal is that this committee use its influence to do the two following things:

1. **Promote vigorous and timely RSI programs,** the single most cost effective method of protecting the public from long term, flight generated, airport noise impact and
2. **Discourage the immoral practice of extorting easements from the victims of airport noise pollution,** protecting the impacted homeowner's Constitutional right to property.

Justification: The justification for the position upon which my proposal is based is two fold. Both relate to this nation's well known efforts to :

1. Protect and preserve the environment (Clean Air and Clean Water Acts) and
2. Protect and preserve the rights of the individual (Constitution)

Examples: To put in perspective our Nation's efforts to preserve both nature and citizen I offer the following dubious situations:

Exxon's response to Alaskan claims after the Valdez spill: "Yes we'll clean up the shore but only if we get an easement. We're going to concrete the shoreline so future spills will be easier and cheaper to clean up."

DOW's response to factory stack effluent killing the lawns and shrubs of surrounding homeowners: "Yes we'll clean it up but only if you give us an easement so we can replace your lawns with astro turf so it will be easier and cheaper to clean up in the future."

If these examples are funny, why are airport authorities given serious consideration when they say, "Yes we'll insulate your home but only if you give us an easement so you can't sue for mitigation when we double our air operations."

Maybe we need a Federal Clean Sound Act!

In my admittedly limited examination of the airport noise issue and RSI programs I have found 6 general truisms:

1. People sue airports as a last resort, only when all other options for relief from noise have been exhausted.

2. Airports get sued when they ignore the negative impact they have on people.
-- Airport Authorities expend great amounts of energy generating profits. They are generally efficient and effective at this task which creates jobs, trade and improves the economy.
-- But, airport products always come as twins. For every "goodun" there's a "badun". The bad twin to economic growth is pollution: noise, air pollution, surface traffic congestion and so forth.
-- Airport authorities must dedicate significant talent, time and resources to mitigating their "badun" by-products.

3. Insulation stops litigation! (The new battle cry of the Republic?)
--In my study, those airports which had vigorous, fair RSI programs did not have noise litigation. If they had such litigation pending it evaporated with the commencement of their RSI program.

4. Easements precede planned noise increases.
-- Airport authorities demand easements for RSI grants in order to buy the silence of the victim for future victimization.

5. Easements are poor insurance.
-- The act of requiring easements can generate litigation.
-- Airports holding easements have been successfully sued by their victims subsequent to increases in operation.
-- Easements are unnecessary as airports with vigorous RSI programs and no requirement for easements have proven. (Logan and Nashville)
-- Easements are unnecessary in many states because of precidents established in "prescriptive easement" findings in noise litigation cases.

6. Most people do not understand what RSI is.
-- It is not a purchase of the victim's silence.
-- It is not a trade of insulation for the right to make limitless noise intrusion.
-- It is not compensation for the homeowner's past suffering.
-- It is not a fine for failure to comply with Federal, state or local noise standards.

-- It is reasonable protection provided by the airport to protect its neighbors from current noise impact.
-- It is the execution of moral responsibility.

In summary, easements do not stop litigation. Insulation stops litigation. I encourage this committee to use its influence to promote timely RSI treatment where it is practical and to discourage the immoral practice of extorting easements from the victims of airport noise.

FICAN

Stewart Acoustical Consultants

Post Office Box 30461
Raleigh, North Carolina 27622
Telephone (919) 781-8824

July 20, 1994

Industrial Noise Control
Architectural Acoustics
Environmental Noise

Mr. Thomas L. Connor TC 8/1/94
Chairman, FICAN
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, DC 20951

Re: Comments on FICAN Research Priorities -
Perception of Aircraft Noise, Community Reaction to Aircraft Noise, Land Use Compatibility

Dear Mr. Connor:

Thank you very much for your assistance obtaining a couple of documents a few weeks ago. You said then that you wanted written comments from those unable to attend the hearing in Atlanta. I will not be able to attend due to a conflict. However, I want to make a few comments. I am particularly concerned that some earlier comments made for the docket of the "Report to Congress on Effects of Airport Noise" may have been misinterpreted. I am enclosing a copy of those comments, since I believe they are very appropriate to the three topics listed above. I see those three topics as strongly related. Perception influences community reaction and compatibility, and strong community reaction is an indicator of incompatibility.

I will organize comments around the three areas listed above. However, I will emphasize three points from the Report to Congress that relate to these areas. One concern is misuse of the day-night level as an indicator of loudness. Another is the need to consider community characteristics in determining compatibility between communities and noise. Finally, I am concerned that the experience of some aviation noise researchers is limited to aviation noise as evaluated in the last 15 to 20 years.

Perception of Aircraft Noise

My comments on perception relate to three factors: background level, loudness, and environmental influence on perception.

The Report to Congress summarized my position on background noise by saying "The commenter feels that ambient or background noise is not an important factor in airport noise assessment." My actual comment was the following. "Ambient noise is not always an important factor. However, it can be. My experience indicates it depends on the history and expectations of the community." The important point is that you cannot automatically use background level as an indicator. It may or may not be significant depending on circumstances. If the background level is low, you must then determine if it has significance to the community. If the community does not care about the background level, then it will probably not influence their reaction to aircraft noise. However, if many members of the community are there specifically because it is a quiet area, then expect a strong reaction to new aircraft noise.

My comments last year argued that day-night level does not reflect loudness of a series of events. I do not believe that loudness is always the issue when people are annoyed by or complain about aviation noise. However, when it is, DNL fails to predict results properly. I notice that the Report to Congress is careful not to say that DNL represents loudness of a period. However, the phrase "DNL combines the perceived loudness of each event" on pages 6 and 7 is misleading. It indicates you are combining loudness, when you are actually combining energy. Assume a Stage 3 plane is 10 dB quieter than a Stage 2 plane. If you were combining loudness, each Stage 2 plane would be about equal to 2 Stage 3 planes rather than 10 for the same final "figure of merit." Actually, I believe research will show loudness of events is not fully additive. I expect the true measure of loudness of a series of events is somewhere between an energy average and a loudness average. Research is needed.

Perception of sound is also dependent on circumstances and expectations. This is not unique to aircraft noise. There are many cases where one person's music is another's noise. There is more to it than sound level. However, government agencies have not recently considered anything except average sound level with a night-time penalty. The first circumstance that must be considered is whether the listener is usually indoors. If so, they are most affected by very loud events that are loud even indoors. Those with such loud events will gladly trade away a few for a much larger number of quieter events that do not disturb their indoor activity. However, even quieter aircraft events can be a problem outdoors. Expectations for the outdoor environment also differ widely among communities. Some communities expect a noisy environment with aircraft noise being part of it. Some communities may be quieter, but may not care about the outdoor environment. They do not spend much time outdoors. Even if it is quiet, it is not the reason they chose to live in that location. However, there are some communities where peace and quiet are the major attribute of the community. If residents sacrificed other features to live in a quiet area, they will perceive any new aircraft sounds as unwanted noise.

Community Reaction

I see in the FICAN report on research that this topic includes annoyance and sleep disturbance. I was surprised to see the term "community reaction" used to include annoyance and other factors leading to reactions. "Community reaction" has traditionally been used to describe evaluation of complaints, a practice FAA has not favored.

Much research is needed to relate annoyance to the environment in which the noise occurs. I am convinced you could put the same people in different community environments and circumstances and get different annoyance ratings for the same aircraft noise. Much depends on whether the sound is one they reasonably expected for the environment and circumstances.

I am aware that some members of the FICAN have a broad background in noise issues. However, I am concerned that much research in aviation noise today is conducted by young people with two strikes against them. First, the only noise problem they have ever worked on extensively is aviation noise. They do not have the broader understanding and background that comes from working on a wide variety of noise problems. Also, especially for aviation noise, the last 15 years have seen a very simplistic approach to evaluating noise impact. I question whether those who have recently entered the field of aviation noise have ever been exposed to the complexities of the real world of noise control.

As evidence of this concern, I refer to the response to my comments in the Report to Congress. The response writer noted that a recent paper submitted by another commenter "suggested penalties that may be imposed on the existing DNL values when determining allowable noise limits." This gives the impression that the writer of this response thought the normalization concept is new. However, this information is taken directly from the "Levels Document" of 1974. It is nothing new. Government agencies have just ignored it for almost 20 years. The referenced paper was written by the commenter Ken Eldred and Henning von Gierke. It is the best short summary of "Effects of Noise on People" ever prepared. The authors were leaders in the original development of the DNL. They realized the shortcomings. Apparently, those responding to comments in the Report to Congress did not coordinate their efforts. The responder to my comments thought he had found something new in the "paper." The responder to Mr. Eldred said the "article" "provides no significant new information."

Land Use Compatibility

Both perception issues and community reaction issues influence residential land use compatibility. If perception and reaction are influenced by community characteristics, then so is compatibility. Some types of residential communities are more compatible with aircraft noise than others. Some airport noise problems occur because characteristics of existing communities are not considered in evaluating the effect of airport changes on them. Others result from designing new communities with characteristics not compatible with aviation noise.

In discussing this problem last year, I compared the situation of a new community that was compatible with the same noise that caused problems for existing communities. This appears to have been misinterpreted as a recommendation for different criteria for new and established communities. It was actually a plea to recognize that communities are different and appropriate criteria vary depending on community characteristics. The appropriate criteria does not depend on whether the community is new or old, but on its characteristics.

The important point is that with a new community, you can design it for better compatibility with existing or anticipated noise. Unfortunately, this is not always done. Near the same airport is another new community that is not compatible though it has less noise than the compatible community. There are many complaints from new homeowners in this community. A look at the advertising tells the reason. The following quotes are from an ad this month.

"When you visit the Village you may just feel you've stepped back in time. To a time when kids played on the Village Green and neighbors greeted one another by a gazebo on an after dinner stroll. To a place where families picnic on the Great Lawn or down by the lake."

"Generous -- home sites with a lot more room for outdoor living -- twice as big a home sites in many neighborhoods."

"Features that encourage outdoor living."

"We've tried to combine country and country club with an out-in-the-country feeling."

Television advertising features hamburgers sizzling on the grill in a very quiet setting. Buyers visiting the community when there are no take-offs overhead get this impression. Once they buy and experience the take-offs, they are not happy.

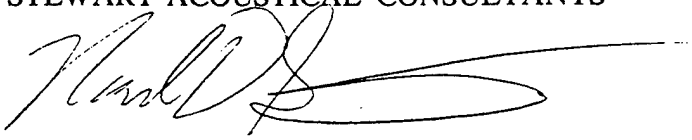
This location is better suited to denser development that does not emphasize an idyllic outdoor environment. However, it was planned while the airport was building a new runway and planning the hub operation that impacts it. The environmental assessment for the new runway did not indicate a problem for the location. However, it did not anticipate the hub operation. When the hub was announced, the airport claimed there would be no influence on the noise contours. They reasoned that all the new planes would be Stage 3 following the same flight tracks. There was no evaluation of the effect of the hub on flight tracks and noise location until it was too late. The developer and town proceeded with their plans based on the best information available from the airport. New flight tracks with the hub moved the take-off noise over this new community. The majority of the planes also were initially Stage 2. The problem was not fully known until much of the community had been built. The developer then had to continue his plan to meet his commitment to initial buyers. To prevent such situations, airports must carefully evaluate and effectively communicate the impact of any planned changes a few years in advance of the change. They also must evaluate potential impact well beyond the DNL 65 contour, to at least the DNL 55 contour.

Aircraft Noise + Airport Noise = Aviation Noise

I congratulate the FICAN for using the term "aviation noise" to include both "aircraft noise" and "airport noise." It may end some problems resulting from misuse and misunderstanding of those terms. I noticed a comment in the Report to Congress arguing that "Airport Noise" is an incorrect term since aircraft rather than airports generate troublesome noise levels. The commenter is right in one respect. There would not be an airport noise problem if aircraft were silent. However, I must remind the commenter that aircraft sound usually is not noise while the aircraft is flying at 30,000 feet. It becomes noise when an airport causes the sound to be put near people. Both the aircraft and the airport are needed to cause the noise problem. Aircraft noise control relates to efforts to reduce the sound produced by the aircraft. Airport noise control involves efforts by airports and local planners to control the location, timing, and effects of the sound, and the location of sensitive uses. The aviation industry is not unique in having many parties involved in the creation and solution of a noise problem. However, as with any noise problem, a solution requires the cooperative effort of everyone involved.

Sincerely,

STEWART ACOUSTICAL CONSULTANTS



Noral D. Stewart, Ph.D.

Enclosure

LAND USE COMPATIBILITY

The premiere problem involving localized impacts caused by noise has been a matter of land use adjacent to airports. Local governments argue, logically, that they cannot be expected to plan for airport-compatible land uses if they have no control over where and when aircraft fly over their cities. However, even if land use compatibility is sacredly guarded by the local government unit, the FAA and associated airport proprietors must accommodate those land uses in their operational procedures.

In reviewing appropriate land use compatibility, the basis of the discussions revolve around the types of zoning and land use planning which are adjacent to airport boundaries and in close proximity to noise corridors. In regard to D/FW Airport's proposed runway expansion, a history of its Master Plan and its future development clearly demonstrates that land use planning should require extensive airport site analysis as well in order for appropriate expansion and site compatibility to take place.

The original Letter of Intent entered into in 1968 between Dallas and Fort Worth and the neighboring cities for the construction of D/FW Airport was developed for the purpose of coordinated planning. Consistent with the commitment to coordinate airport planning with local land use policies and considerations, the Airport Board adopted and published the Airport Land Use Plan-2001 in September 1969 and later the Airport Master Plan in 1973.

As part of the Land Use Plan, the selection of the D/FW Airport site was based on land use and airspace considerations which were believed to limit potential growth at Dallas Love Field and Greater Southwest International Airport. In addition, Airport planners were cognizant to guard against the later development of the kinds of incompatible land uses which had resulted in significant reductions (up to 40 percent) in the capacity of some major airports. Confident of this type of strategy, the planners concluded that the construction of the airport would result in a net reduction in aircraft noise in the Dallas-Fort Worth region. The planners' took on added dimensions in D/FW's final environmental impact statement:

> "Due to the overall size of the Airport property acting as a buffer and the sparsely populated adjacent territories, and given that these lands will develop in a fashion compatible to their Airport neighborhood, few, if any residents outside the Airport property will be subjected to noise levels that will be cause for complaint."

Based on the 1968 Agreement and later the Master Plan of 1973, the City of Grapevine, and other surrounding cities, adopted appropriate land use planning to mirror the proposed development of the Airport. Approximately, 17,800 acres of land was acquired in fee simple to insure that the airport would be good neighbors to the

surrounding cities and its residents. Forty percent of the City of Grapevine, about 9,600 acres, was taken to create the Airport along with acreage from other cities. In addition, Grapevine and the other neighboring communities agreed to use zoning and subdivision powers to prevent any incompatible uses from censoring the Master Plan established for D/FW Airport. To put it simply, Grapevine zoned around the Airport Master Plan leaving clear zones within our city limits not allowing development in those zones. The vast amount of land acquired for D/FW, including the significant areas for clear zones and noise corridors surrounding all runways, has proven the wisdom of creators and designers of D/FW. Since that time, over 50 zoning cases have been filed since that time in the City of Grapevine alone that could have adversely affected the Airport. In each instance, the City supported the Airport's position regarding land use compatibility.

In 1988, however, the Airport announced a revolutionary new plan to substantially redesign and rebuild D/FW Airport and to double airport capacity, thereby changing land use compatibility with the surrounding cities. The new proposal at D/FW provided for an unplanned air carrier runway on the west side. In addition, the proposal called for the construction of a longer air carrier runway on the east side than D/FW's ultimate Master Plan had shown, new taxiways, new gates, renovations to Delta and American terminals, new parking garages and two new control towers. The most pressing issue of the proposal being the unplanned runway (16/34 West) on the west side of D/FW which would use the heart of Grapevine as the clear zone and noise corridors. One of the primary reasons for the location of the original north-south runways was the availability of undeveloped land at each runway's end to provide the clear zones and open space needed to contain the most intense noise zones. Any new runway should afford the same protection to any surrounding city as the original runways provided.

The City of Grapevine, however, has not introduced or approved land uses which conflict with the operation of D/FW Airport. Moreover, we do not oppose airport expansion. What we do call into question is the appropriate level of planning <u>on Airport property</u>. The proposed 16/34 West Runway is located approximately 5,800 feet from the nearest existing north/south runway. When asked to move the proposed runway approximately 1500 feet further to the east, which would substantially reduce the impact to the people of Grapevine, Texas, we were refused. Simply put, the Airport has not properly planned for new runways and new development and thereby has allowed the construction of facilities to be built or proposed to be built that are not compatible land uses with the surrounding cities.

The D/FW Airport Board's plan for expansion and redevelopment of the Airport will result in a new D/FW which would be considerably larger than either the current airport or even the ultimate facility described in the most recent D/FW Master Plan. This
dramatic expansion would reconfigure D/FW and would change fundamentally the manner in which the airport operates.

Therefore, it is my hope that my comments today will clearly demonstrate the need for the careful consideration and implementation of land use and development criteria for airport expansion in order to assure continued compatibility with neighboring properties and communities. It is inappropriate to place the entire burden for compatibility on homeowners and businessowners in the communities surrounding an airport. An airport itself by the manner in which it operates, plans or fails to plan for its own development can just as effectively cause incompatibility with adjacent communities - and there is no way that the communities would be at fault for such actions. Therefore, expansion must properly be viewed as a interconnected project which has effects on land uses. The scope of the issue facing our city is much larger than a new runway. The issue is the expansion of D/FW and to what limits it will be allowed to occur.

NOISE REDUCTION TECHNOLOGIES

Airport noise/land use problems continue to exist at many airports throughout the United States. Through cooperative efforts, much has been accomplished at various airports in limiting the growth and spread on noise compatibility problems. Actions have included reduction of noise emissions by new Stage II aircraft, provisions for retirement or retrofitting of engines of Stage II aircraft, and development of operational and land use control measures to mitigate existing problems.

The cost of many land use mitigation measures are increasing rapidly. These include sound insulation of structures, land purchases, relocations, and avigational easements. Additionally, people's perceptions of what is an acceptable level of noise is becoming more critical. All of these issues result in the obligation of airports to impose operational constraints, growth limitations and other operational noise control methods.

As with D/FW, no two airport situations are alike, and each requires a unique combination of mitigation measures to achieve an acceptable solution. At a given airport, a full range of possible solutions should be fully explored, then the best composition of solutions should be chosen and carefully weighed. The aviation constraints imposed on an airport should not take precedence over the realistic environmental concerns and impact of the local area.

Over the past few years, discussions and meetings have been held with D/FW staff to address noise and safety concerns of the residents who have been experiencing low flying, loud commuter turboprop aircraft over their homes. These concerns were first expressed by residents in the southwest portion of Grapevine, but now extend to all areas of the City. These aircraft fly every 45-55 seconds one after another during peak periods of the day. The noise produced by these aircraft is incredible. Our City has produced verifiable studies and statistics indicating that Stage 3 aircraft are not necessarily quieter than Stage 2, rather that sound is perceived at a different pitch. Our City's studies also prove that the Stage 3 aircraft are actually louder on arrival than Stage 2 aircraft. Therefore, we urge extreme caution in what has appeared in the past to be an idea that Stage 3 aircraft are the panacea for all noise problems.

Between 1985 and 1992, the number of enplaned passengers on commuter airlines at D/FW and Love Field increased an average of 10.5 percent per year. This rate is similar to national trends in commuter enplaned passenger activity; according to the FAA, the number of enplaned passengers on regional/commuter airlines in the United States increased an average of 8.9 percent per year from 1987 to 1992. Furthermore, the FAA also forecasts that the number of enplaned passengers on the regional/ commuter airlines in the United States will increase an average of 6.4% per year from 1992 to 2004. With high performance turboprop aircraft becoming the fastest growing segment of the aviation community, it is imperative that technology provide a means to significantly reduce its noise impacts over surrounding airport communities.

NOISE MODEL DEVELOPMENT

The 65 ldn, or average noise, is the important criteria in whether or not you have a noise problem. (However, studies and reports by the World Health Organization confirm as you increase into the 55 decibel range on up to the 65 decibel range that the comfort level in noise annoyance factors significantly increase. One of the critical matters that the City of Grapevine finds fault with is the method of measurement that is currently utilized.

Just as technology has increased in the field of aircraft, we also must find that the ability to assess the impacts of noise also exists. The outdated, arbitrary Ldn noise metric for noise compatibility assessment should be replaced with numerous comprehensive noise metrics. A comprehensive set of noise metrics such as Ldn, Lmax, SEL, TA can be used to determine true impacts caused by all aircraft regardless of weight or altitude of flight. The present 24-hour averaging methodology of assessing noise is inadequate. Noise events are underemphasized in any measure of average noise exposure producing results which are twice as loud half the time and less loud the other half of the time.

The rationale used in a true noise model must be logical and it must be wise. And it must be all inclusive with nothing excluded as it has occurred in the past, and include turbo props in the noise calculations.

COMMUNITY REACTION TO AIRCRAFT NOISE

In September 1992 and in May 1994, the City of Grapevine, at the request of the residents, conducted surveys within the Sunshine Harbor subdivision immediately north of D/FW Airport. The purpose of both surveys was to gain insight into the residents perceptions regarding noise and it effects on their homes and their neighborhood. A subdivision of 145 homes, responses to the surveys were very respective with a response rate of 48.22% and 44% respectively.

The September 1992 survey found the following results:

- 84% of the respondents indicated that airport operations were generating more noise than three years prior and 92% indicated that airport operations were generating more noise than 10 years prior.
- 73% of the respondents believed that their homes had received structural damage caused by aircraft.
- 94% of the respondents indicated that their normal activities (i.e. watching T.V., talking on the phone) were interrupted by noise.
- 64% of the respondents indicated that their sleep was regularly interrupted by aircraft noise.

In the May 1994 survey, the residents of the subdivision asked that the City specifically develop questions to address quality of life issues pertaining to the Airport.

- 61% of the respondents indicated that their quality of life had been effected in some way by the operation of D/FW Airport. Of those responses, noise pollution was ranked as the number one problem effecting quality of life.
- 56% of the respondents indicated that they have experienced structural damage caused by aircraft.
- 92% of the respondents indicated that their normal activities were interrupted by noise.
- 71% of the respondents indicated that their sleep was regularly interrupted by aircraft noise.
- 19% of the respondents indicated that their children had been endangered outdoors because of noise levels. Most felt this is because the children cannot hear cars coming down the street.

- 92% of the respondents were in favor of a buy-out of their home by D/FW Airport.

These statistics demonstrate the reactions to noise and airport operations from a subdivision/neighborhood immediately surrounding D/FW Airport. However, this neighborhood is an integral part of unified communities and any such adverse impacts on one neighborhood affects the resources, finances and quality of life of all other parts of the City.

PUBLIC INFORMATION

The public disclosure of the methodology for noise analysis is only one of the many pieces of technical information that must be released and provided to the public in appropriate layman's terms. As with D/FW Airport, the public release of the Draft Environmental Impact Statement for Runways 16/34 West and East was mirrored by the failure to disclose the technical data and analysis upon which the Draft Statement was based. The Proposed Airport Layout Plan for D/FW's expansion was prepared in December 1989 but was not made available to the City or to the public until September 1990, more than a month into the short public comment period. Until late October 1990, the FAA consistently refused to acknowledge the existence of a map showing the noise contour for Ldn of 60 dBA even though such a map had been prepared months before the Draft Environmental Impact Statement was released. The map itself was not made public until November 1990. The failure to make full and public disclosure of information on the environmental impacts of D/FW Airport's expansion proposal has continued to make it difficult for the City and the public at large, to gain a complete understanding of the environmental impacts of the proposal itself.

Reduce Overflight Abuse of Residents

July 5,1994

Thomas L. Connor
Chairman, FICAN
U.S. Dept. of Transportation
800 Independence Ave S.W.
Washington, D.C. 20591

RE: Federal Research to address
Aviation Noise Issues

Dear Mr. Conner:

Thank you for the invitation to attend an Atlanta Conference of the Federal Interagency Committee on Aviation Noise. We regret that we will be unable to attend and therefore send our comments by letter.

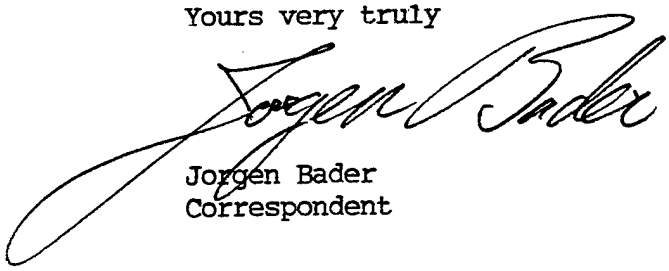
Our primary concern about research into the impact of aviation noise is that there is not nearly enough of it. There needs to be a great deal more of it, in greater depth, for longer duration, and over a much broader spectrum.

The United States will be paying an increasing proportion of the nation's health care costs. By far the most efficient investment in extending lifespans and maintaining wellness lies in prevention of illness and reducing stress. Noise, especially aviation noise, has adverse impacts on people. Research documenting those impacts --- particularly the subtle long term psychological and physiological effects --- will develop a consciousness of the damages of such pollution, and then slowly with the increased awareness, a federal determination to reduce the impact. When the costs are fully known, the federal agencies with responsibility for health care, for education, and the environment will be able to influence policy to further the public interest in reduction of aircraft noise.

We recommend that expenditures concentrate on impacts upon individuals as opposed to "community annoyance." The United States health care system and its educational system has obligations to individuals; our civilization values the individual and respects his or her human rights; and individuals make up society. In our region, airport authorities cite "community annoyance"data to deprecate people who feel the impact as a minority, and by so classifying them, the airport authorities dismiss them. This misuse of the data reduces its value. Although impacted citizens may be a minority, their health, their well being, and the quality for their lives is important.

As for land use compatibility, the F.A.A. has long treated its assignment as one of imposing controls on surrounding areas. This strategy may be defensible when an airport is established in ranchland. In established urban areas, its research should be directed as imposing controls on airports to make their operations consistent with maintaining the quality of urban life.

Yours very truly



Jorgen Bader
Correspondent

July 29, 1994

To: Miller Miller and Hanson, Inc.

Re: Comments on the Federal Interagency Committee on Aviation Noise Forum

On behalf of Ulsterites Fight Overflight Noise, I wish to express an appreciation of the government's renewed recognition of the role that research plays in developing ways to protect the public from noise and an appreciation of interagency openness to input from outside government.

I found the FICAN forum and report informative and especially helpful in understanding how discourse between government officials and the public becomes foiled by a difference in how questions and problems are framed. The citizen who wants to know how noise levels in the community can be reduced feels disregarded when explanations of how noise can be measured are given. He or she feels especially offended by measurement units that do not communicate individual responses to meaningful events and by the use of aggregate responses to noise in developed urban areas that are used to project acceptable noise levels for areas where expectations or valuations are different. Nonetheless, I do see encouraging steps in the right direction in the development of projects such as the Human Response Monitor and the Interactive Sound Information System that evaluate individuals' responses to meaningful events.

I have enjoyed the interaction with government researchers that the forum provides and look forward to continued exchanges.

Sincerely,

Susan L. Stryker, Ph.D.

Box 681 Stone Ridge, New York 12484 914/687-9719

D.5 Comments Received From Staten Island

In response to the FAA's work on the Expanded East Coast Plan, the FAA received 144 copies of a form letter from residents and other interested parties in Staten Island, concerning the issue of pysco-social research on the effects os noise on humans. The complete text of that letter is provided below:

May, 1994

Barry L. Valentine
Assistant Administrator for
Policy, Planning and International Aviation
U.S. Department of Transportation
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

Dear Mr. Valentine:

In the absence of documentation specifically concerning the problems the citizens of the North Shore of Staten Island are having with the effects of noise exposure from the jet planes, I am requesting that the FAA IMMEDIATELY fund a study to fully examine the primary and secondary (psycho-social) effects noise has on human function.

I request that this study be conducted at a site selected by the FAA, however, to be administrated by one of the hospitals on Staten Island. The criteria for participation of residents of Staten Island will be by joint agreement of the FAA and the Borough President's Office.

I request also that the study shall commence within 6 months.

Sincerely,

Name: _____
Address: _____
_____
Phone: _____

cc: Jerry Cammarata, C.S.E., Congresswoman Molinari, Borough President Molinari

APPENDIX E. GLOSSARY

E.1 Abbreviations and Acronyms

ASA	Acoustical Society of America
ACI-NA	Airports Council International - North America
AAMRL	Armstrong Aerospace Medical Research Laboratory (known as Armstrong Laboratory, USAF)
AFB	Air Force Base
ANSI	American National Standard Institute
CFR	Code of Federal Regulations
dB	Decibel
DNL	Day-Night Average A-Weighted Sound Level (expressed in dBA)
DOD	(U.S.) Department of Defense
DOT	(U.S.) Department of Transportation
EIS	Environmental Impact Statement
EPA	(U.S.) Environmental Protection Agency
FAA	(U.S. DOT) Federal Aviation Administration
FAR	Federal Aviation Regulations
FICAN	Federal Interagency Committee on Aviation Noise (1993)
FICON	Federal Interagency Committee on Noise (1992)
HNM	Helicopter Noise Model (FAA)
HMMH	Harris Miller Miller & Hanson Inc.
HUD	(U.S.) Department of Housing and Urban Development
ISO	International Standards Organization
L_{eq}	Equivalent Sound Level (expressed in dBA)
L_{max}	Maximum Sound Level (expressed in dBA)
MOA	Military Operating Area
MTR	Military Training Route
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NIH	National Institutes of Health
N.O.I.S.E.	National Organization to Insure a Sound-controlled Environment
NPRM	Notice of Proposed Rulemaking
NPS	National Park Service
SEL	Sound Exposure Level (expressed in dBA)
USAEHA	US Army Environmental Hygiene Agency
USAF	United States Air Force
USA	United States Army
VA	Veterans Administration