



Dr. Deborah A. Boehm-Davis

Chair, Research, Engineering and Development Advisory Committee
Professor of Psychology, George Mason University, 4400 University Drive, ARCH Lab MSN 3F5, Fairfax,
Virginia 22030-4444

February 4, 2002

The Honorable Jane F. Garvey
Administrator
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Dear Ms. Garvey:

I am sorry that you were unable to join us at our Federal Aviation Administration (FAA) Research, Engineering and Development (REDAC) Advisory Committee meeting. The Committee members look forward to discussions with you and they hope that you will be able to join us for our next meeting, scheduled for April 23 and 24.

On the basis of our meeting, we recommend the following.

- That Associate Administrators meet with the REDAC Committee to describe how they see the research and development process fitting into their operations and to outline their strategic plan for incorporating R&D into their programs. Specifically, the Committee would like the administrators to articulate their research needs and describe how they prioritize work and manage their programs.
- Developing a fully competent and expertly staffed FAA organization to absorb and use the results of NASA's R&D.
- Strengthening FAA participation in international bodies such as ICAO and recognizing that participation as essential to FAA's mission and continued leadership in the world aviation arena.
- That the FAA administrator recognize and champion NASA's research directed towards

- achieving major capacity and safety gains through an advanced ATM system.
- A study to evaluate the effectiveness of current research in aircraft noise and emissions reduction technologies.
- Continued support for the wake vortex program without a loss of funding for the weather research program.

Several of these recommendations are presented in greater detail in the attachment.

With the establishment of the Performance-Based Organization and the hiring of its Chief Operating Officer drawing closer, the Committee would like to emphasize again the opportunity that this change in structure poses for:

- providing leadership and focus for research, particularly in the ATM area;
- elevating the visibility of high level system engineering within the agency;
- more tightly integrating NASA research program planning with FAA planning, both in support of the Operational Evolution Plan and for longer term research initiatives; and,
- improving the process for transferring technology from research to operation.

Finally, the Committee cannot ignore the events of September 11 and the impact of those events on research, engineering, and development. The Committee recognizes the need to invest more heavily in security research, engineering, and development, but is concerned that this funding may come at the expense of other areas. Funding for research has been relatively flat for the past several years, and the FAA cannot afford to divert funds away from core areas to cover additional investments in security work.

I am interested in discussing these proposals with you at your earliest convenience. The Committee continues to be dedicated to providing you with advice and recommendations on any R&D issue that you may need us to review. We stand ready to serve you. Please contact me at (703) 993-8735 or at dbdavis@gmu.edu if you have any questions or would like to meet.

Sincerely,

Deborah Boehm-Davis, Ph.D.
Chair
FAA Research, Engineering and Development Advisory Committee

Attachment

Recognition of NASA Research

We believe the FAA administrator should recognize and champion NASA's research directed towards achieving major capacity and safety gains through a more fully automated ATM system. We believe this work should be encouraged by the FAA through a substantial and continuing involvement by a wide variety of FAA operational and technical personnel to ensure that it proceeds expeditiously in a way suitable for introduction into the NAS. Publicizing this kind of activity could serve as a sign of FAA's ability to think far ahead.

Developing FAA Expertise to Facilitate Technology Transfer

The Committee continues to be concerned that FAA itself appears to be less and less involved in the essential research and development for the future. NASA is doing very good research, but there must be a fully competent and expertly staffed FAA organization to absorb and utilize the results of this R&D if it is to transition successfully into the NAS. The Free Flight Project Office and the newly-formed Terminal Business Unit are positive steps. However, both are primarily implementation organizations, with major near-term challenges. Neither appears to have the resources to take on the tasks of monitoring and assisting in guiding the NASA research activities, and transitioning the results of the NASA research to NAS implementation when appropriate. We are concerned that the FAA is not adequately equipped, with experts and organization, to absorb and apply the research results to the NAS. This work cannot be done by contractors alone, no matter how capable, but must be understood, managed, and directed by FAA's own people. Without such a capability much of the future NASA R&D may be wasted. Thus, we urge the rapid build-up of FAA's technical capabilities and the organization needed across FAA to implement and fully exploit the coming capabilities. This means hiring new people with demonstrated technical (and technical management) expertise in each of the technology areas that are crucial to FAA success.

International Visibility of the FAA

It is critical that the FAA play a role internationally to help improve the world's aviation systems, and to ensure that the technical eminence the United States has long enjoyed in the world is maintained and enhanced. Several European countries are working hard to become leaders in developing future ATM systems, are applying substantial R&D resources, and are making implementation decisions independent of the USA. Our leadership can no longer be taken for granted. There are disturbing signs that we are not aggressively working with our people and our resources to maintain that eminence. FAA needs to work on concepts for the future, and to assure that the world is aware of our work. Our participation in international bodies such as ICAO needs to be strengthened now, and recognized as essential to FAA's mission and continued leadership. In each area of ATM modernization, the FAA should compare its efforts and

accomplishments with those of Europe and other areas of the world when planning its R&D agenda.