

**TRB AV030 – Committee on the Effects of Aviation and the Environment  
Midyear Meeting Minutes  
May 21-22, 2007**

Day 1

Boulder, CO, National Center for Atmospheric Research (NCAR)  
Status and Future of Research on Aviation and Climate Change

**1. Welcome and Introductions**

Katherine Andrus (ATA), Committee Chair, welcomed those in attendance and participants introduced themselves.

**2. Perspectives on Current State of Research, Critical Issues, and Future**

- Don Wuebbles (Univ. of Illinois) discussed the outcomes of a scientific workshop held in June 2006 focused on aviation's contribution to climate change.
- Andy Heymsfield (NCAR) discussed formation of and gaps in our knowledge of contrails.
- David Fahey (NOAA) discussed the assessment of aviation cloudiness in IPCC Climate Change.
- Industry and FAA representatives discussed their perspectives on the importance of aviation's contribution to climate change including the improvements that may be had through the use of alternative fuels and an improved air traffic system.

**3. FAA Presentations**

*Aviation-Climate Change Research Initiative*

Mohan Gupta (FAA) discussed the Aviation-Climate Change Research Initiative (ACCRI). ACCRI established based on recommendation coming out of 2006 Workshop on Impacts of Aviation on Climate Change. ACCRI aims to reduce scientific uncertainties in quantifying aviation-related climate impacts and provide timely scientific input to inform policy-making decisions for NextGen and CAEP. FAA and NASA are participating in ACCRI, which will get underway in July. Through meetings, workshops, and white papers, research gaps will be identified. The research will begin to improve scientific knowledge and modeling capabilities in 2009. The importance of tying into the international community was noted, but FAA also emphasized the need to address domestic needs.

*FAA Reauthorization*

Lourdes Maurice (FAA) discussed FAA's priorities for environmental research in reauthorization.

- Consortium to look at technologies, with significant funding devoted to alternative fuels. This provision has received supported by the Senate.
- ACRP to be permanent program at \$15M per year with \$5M devoted to environmental projects.
- Senate provision establishing a clean coal fuel research program, but FAA has some concern about relying on coal-based fuel because of the overall CO2 impacts.

4. **Critical Issues Paper**

A draft of the critical issues paper was circulated. Please provide comments to John Putnam by the end of the summer so a final version will be available at the TRB annual meeting in January 2008. The TRB general call for papers will go out soon, with papers due late summer. Papers are often the basis of sessions or posters at the annual meeting. The Committee also assists in disseminating research and other information out to the aviation industry.

Day 2

Denver, CO, DIA

Committee Business Meeting

1. **Welcome and Introductions**

Katherine Andrus (ATA), Committee Chair, welcomed attendees.

2. **TRB News**

- ACRP proposed to be made permanent in reauthorization bills either at \$10M or \$15M with \$5 devoted specifically to environmental projects. If no reauthorization bill in September, the program will continue to operate. 130 project proposals received in the latest round. Screening meeting in June; AOC meets in July to select projects. Panels will be formed in August. Calls for AOC nominations will be open later this year. AV030 should be submitting problem statements as a committee which holds greater clout with the AOC. A mechanism should be established for getting committee support. Tying problem statements into the Critical Issues paper will help keep the paper relevant and act as a mechanism to garner committee support.
- TRB Annual Meeting will be January 13-17, 2007. Our committee gets 2-3 sessions. We are encouraged to jointly sponsor sessions with other committees. Last year we had great sessions that were not well attended because of bad time slots. We should focus on proposing 3 good sessions and try to get better time slots. Being able to register only for a workshop might be helpful, but TRB does not seem supportive of that idea. Darcy might consider spearheading an EMS/Sustainability workshop. Location of workshops might also impact attendance. The committee is offered a 1.5 hour time slot to meet so it is difficult to have additional presentations aside from committee business. Katherine will find out how the joint noise subcommittee will impact our session numbers. Poster sessions should also be considered. Liaisons with other committees should also be established before the Annual.
- Call for papers – Paper abstracts are due May 31. Last year we got 4 papers to review, 2 of which became poster sessions. Burr will put out a call for papers.
- TRB award established in honor of Francis X. McKelvey. Nominations for the award are due August 1, 2007. The Award will be given at the TRB Annual Meeting.
- TRB summer meeting in July in Chicago – more like a conference. The committee has been invited to participate next year.
- Research needs database established by TRB. John Pehrson has put some entries in the database on behalf of the committee based on the critical issues paper.

### 3. **Climate Change Discussion Recap**

The group discussed the previous day's meetings on climate change. More meetings on climate change should be considered, including more in-depth discussion on some of the issues such as RF, nitrogen cycle, etc. Involvement from environmental NGOs should also be encouraged to help inform their understanding of the science.

### 4. **Issues Roundtable**

Issues brought up in January were reviewed. New issues for consideration were also discussed.

- Climate change program being developed for Port of Seattle. Perspective is needed on what our goals are industry-wide, including what the baseline is.
- Identifying policy gaps focused on what research is needed to fill those gaps. An example is purchasing carbon credits to offset the impacts of aviation – how are those offsets calculated, what is the benefit, etc.
- SIP effects on air quality and climate, emissions trading.
- Strategic planning.
- Non-linearity of environmental impacts.
- Strategic v. tactical EMSs.
- Intermodal – research proposal into ACRP right now looking at the intermodal aspects of noise and local air quality. Environmental tradeoffs of various forms of transportation is a subset of intermodal issues.
- Sustainability. The AV030 subcommittee will have a meeting at the Annual.
- Supplemental metrics for noise. Does the Shultz curve need to be updated?
- Engine design and climate change.
- Do current policies make sense?
- APEX data; APEX3 data may be published this year (presentations from November workshop are available on the NASA website).
- Ultra-fine particulates. Not regulated, but pressure is growing for aviation to consider the generation of ultra-fine particulates.
- AWA conference upcoming in June in Pittsburgh with session on aviation and emissions.
- LIDAR use to characterize aircraft emissions. LIDAR remote sensing as predictor. Workshop in Boston in the Fall.
- FOA for particulate matter.
- SAE-21 meeting – emissions calculations
- Biofuels and other alternative fuels, synthetics.
- Carbon offsets, possible co-sponsored session with Aviation Economics Committee. The actual benefits of offsets need to be explored.
- Climate change discussion has focused on the upper atmosphere. Work at Volpe looking at entire LTO cycle – preliminary results presented last week. Consider airport-level.
- Examine current and past data to determine dominant sources of climate change impacts and which can most cost-effectively be mitigated.
- HAPs emissions inventory – when should they be done?
- Revisit DNL 65 for NextGen.
- Climate change – evaluate impacts.

- Quantification of health impacts.
- Alternative fuels
- EMS as a process control for the National Air System.
- Understanding the noise metrics and their relationship to what is actually happening, the role of expectations.
- Inventories for climate change, including the accounting and technical differences.
- The interrelationship, interdependence, and tradeoffs of health impacts of the various emission categories.
- APMT monetization of impacts.
- ELG process moving slowly, ACRP projects maturing at helpful time.
- NextGen for water – permitting activities at airports. Nuisance bacteria are driving permit requirements. Treatment and release regime that could substitute for levels.

5. **Critical Issues Paper**

David Bell is seeking input for updating the paper. It will be circulated for peer review. New chapters under development on Climate Change, Alternative Fuels, and Life-Cycle Analysis.

6. **Possible Annual Meeting Sessions**

- Carbon offsets jointly with economics committee. John Putnam, Judith, Burr to assist in organizing.
- Particulates research jointly with air quality committee. Roger to look into joint sponsorship.
- EMS/Sustainability workshop. Darcy to lead.
- Alternative fuels jointly with possible new energy committee. Lourdes to help lead.
- Supplemental metrics jointly with noise committee. Mary Ellen to assist in coordinating.
- Water, deicing, ELG. Richard to lead. Suzanne to assist.

7. **Committee Structure**

- We have two subcommittees – sustainability and aviation noise (jointly with noise committee).
- We can have additional subcommittees. We should consider setting up a climate change subcommittee, but the question is whether climate change people attend the annual meeting. The work and time commitment associated with a subcommittee can be substantial.

8. **Midyear Meeting 2008**

- Steven Davis-Mendelow has volunteered to host in Toronto.
- Consider doing a big climate change workshop at the July TRB summer conference.
- Consider co-locating with Aviation Environment Summit in Montreal in April.