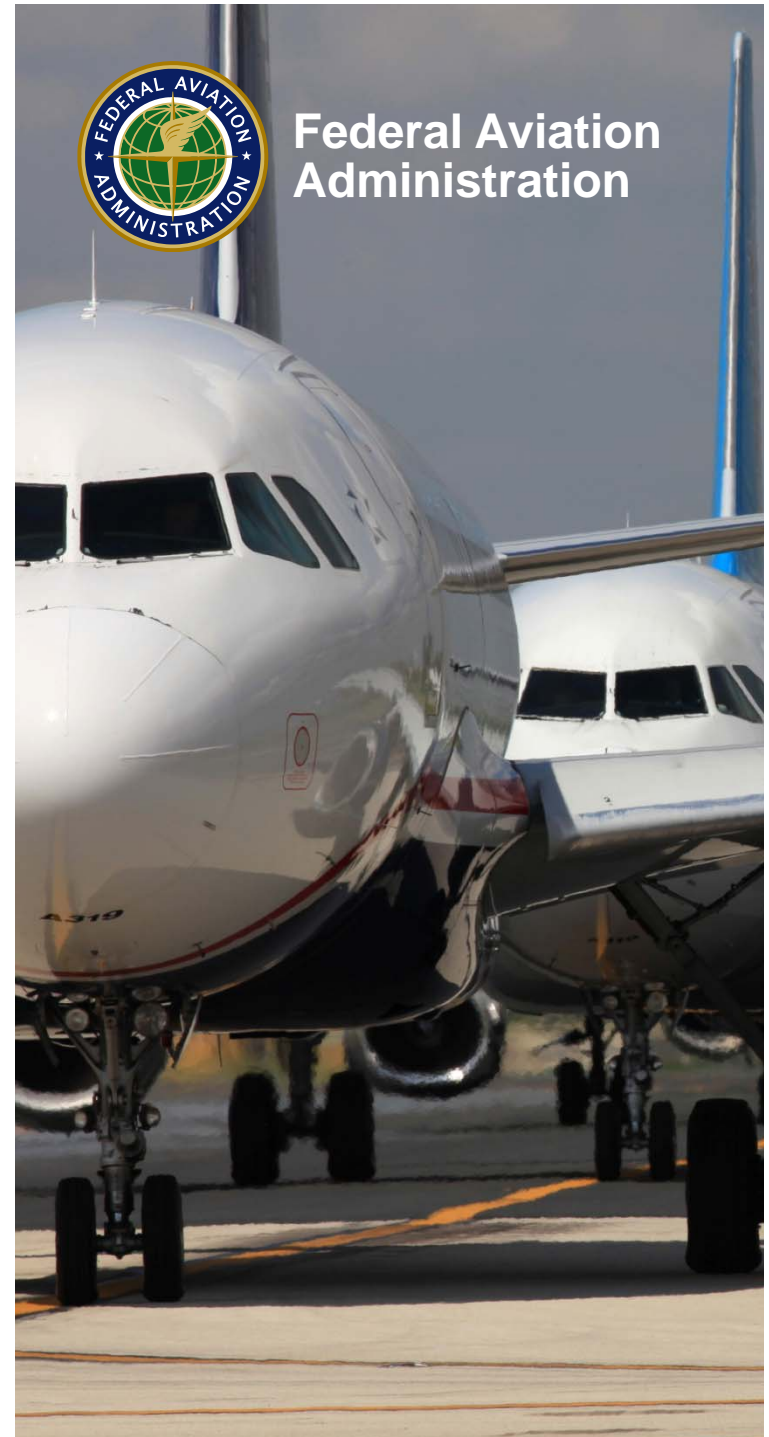


E&E Subcommittee Recommendations & FAA Responses

To: REDAC E&E Subcommittee

By: Dr. Jim Hileman
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Date: March 25, 2014



Outline

- Responses to Recommendations from March 2013
- Responses to Recommendations from August 2013
- Action Item Status



Response to 2013-03 REDAC Recommendation - 1

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>With declining resources, it is imperative that AEE prioritize its activities, funding those projects that promise the greatest environmental benefits. In practical terms, this means that there should not be an across-the-board cut in all programs. Rather, AEE should ensure that the most important projects are funded at a level that permits these projects to continue with the least possible disruption.</p>	<p>The FAA appreciates the efforts of the Subcommittee to help us prioritize our environment and energy research and we agree with your recommendation. We will continue to prioritize our activities such that projects that promise the greatest environmental and energy benefits will continue to see a minimum of disruption.</p>



Response to 2013-03 REDAC Recommendation - 2

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>Continued funding of AEE tools development and maintenance is a priority and is required to permit assessment of the environmental and economic impacts of, and trade-offs among, different possible mitigation strategies. These tools enable the analysis of the environmental consequences of aviation operations, as well as the potential impact of NextGen implementation and standards under consideration at ICAO.</p>	<p>The FAA agrees with the Subcommittee recommendation. Continued development of our aviation environmental tool suite is critical to both our domestic NextGen initiatives and the development of environmental standards and policies through ICAO. We are still on schedule to deliver the second public release of AEDT (version 2b) in 2014 and we are identifying further enhancements that will be added to its capabilities. We are also improving elements of the Aviation environmental Portfolio Management Tool (APMT) using our ongoing research efforts. This tool provides us the ability to perform cost-benefit analyses to inform domestic and international decision-making. The FAA will continue to support the development and application of both AEDT and APMT.</p>



Response to 2013-03 REDAC Recommendation - 3

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>The subcommittee strongly recommends that funding necessary to support the CLEEN/Alternative Fuels programs continue. Indeed, the subcommittee strongly endorses the AEE above-target funding request for the continuation of these programs at the highest possible level. The first phase of the CLEEN program, a cost-sharing program between industry and government, has resulted in the accelerated development of a number of environmentally beneficial products that are likely to be incorporated in aircraft and engine designs in the relatively near future. This program should continue into its next phase with the level of funding necessary to encourage future success.</p>	<p>The FAA appreciates the Subcommittee's support of the CLEEN program as technology and alternative fuels will have a large impact on mitigating aviation's environmental impact. The CLEEN program is indeed one of our top priorities and it will be protected as much as possible. We continue to prepare for a second round of CLEEN (CLEEN II) and have recently released a Request for Information (RFI) in advance of a bidders conference that is currently planned for Autumn 2013.</p>



Response to 2013-03 REDAC Recommendation - 4

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>Sufficient funding should be available to AEE to permit continued U.S. leadership in the ICAO arena. For example, the current ICAO initiative to develop a worldwide CO2 standard is moving forward, with specific deadlines that must be met. It is important that the United States remain engaged in a leadership position to focus the CAEP work on the most important efforts. In addition, it is important that other CAEP members provide resources so that the United States does not have to carry the entire burden. Perhaps most critically, U.S. resources should not be used for CAEP projects that are not supported by, or of significant priority to, the United States.</p>	<p>The FAA appreciates the support of the Subcommittee in our ICAO CAEP activities as robust funding is necessary to maintain United States leadership. To continue our leadership and ensure that we have the data that is needed to drive the decision-making process within ICAO CAEP, we need to ensure we have robust participation in the ICAO CAEP process and maintain the investments that are critical to our modeling capabilities and analyses. The recent agreement on a new noise standard and the continued progress on a CO2 emissions standard are both the direct result of previous investments over the course of many years. Without continued funding to support these efforts, the United States will not have the data necessary to provide leadership.</p>



Response to 2013-03 REDAC Recommendation - 5

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>In order to ensure the most efficient use of resources in environment and energy research, the subcommittee recommends that existing partnerships between AEE and other agencies in the United States continue. In addition, the subcommittee recommends that international partnerships be explored in an attempt to further leverage available funding. For example, the subcommittee supports and encourages continued collaboration with the Swiss government which has funds available to expand research in the area of Particulate Matter.</p>	<p>The FAA agrees that in an age of diminishing resources, it is more important than ever to foster cooperation among domestic agencies and with other governments. Within the CLEEN program, the PARTNER Center of Excellence, and our recent Particulate Matter measurements, we obtain cost share from non U.S. government sources to facilitate the work. We also seek to align our efforts with those being conducted by other domestic agencies. For example, we have been working with the Office of Science and Technology Policy (OSTP) to develop a National Alternative Jet Fuels roadmap to align efforts across the U.S. Federal Government; we have aligned our CLEEN technology program with NASA and Department of Defense research; and we are in the process of coordinating our operational procedures research with NASA as we have done with other lines of business within the FAA. We also continue to seek international collaboration in the development of our scientific knowledge and analytical tool capabilities as well as the areas outlined previously.</p>



Response to 2013-03 REDAC Recommendation - 6

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>In view of some perceived shortcomings in the existing PARTNER Center of Excellence Advisory Board, the subcommittee recommends that the FAA review such problems and identify problems that need to be corrected. These “lessons learned” should then be incorporated in the formation of the Advisory Board for the new Center of Excellence.</p>	<p>The FAA appreciates the Subcommittee recommending that we use lessons learned from our experience with PARTNER to improve our new Center of Excellence. To ensure that we gain these lessons, we are seeking input as suggested by the Subcommittee from the PARTNER Advisory Board via email and individual discussions. Furthermore, during the 10 year Symposium for the PARTNER Center of Excellence, we held a panel session to discuss the lessons learned from PARTNER and this discussion contained several useful items about the Advisory Board. We will ensure that this knowledge is brought forward to the formation of the Advisory Board for the new Center of Excellence.</p>



Response to 2013-03 REDAC Recommendation - 7

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>The subcommittee recommends that the FAA establish a process to ensure that research project successes are effectively communicated to a broader audience. In addition to typical outreach activities such as the publication of Fact Sheets; placing information prominently on the FAA website; and placing articles in trade journals and the mainstream media, the FAA should seek creative methods to ensure the most effective and efficient dissemination of information. For example, publication of the successes in the first phase of the CLEEN program would make the argument for continued funding of the program into a second phase more attractive.</p>	<p>The FAA agrees that outreach of our successes is critical to our continued success. In addition to updating our current outreach materials, we are working to develop additional methods to efficiently disseminate this information. We will continue to seek out new venues and methods for information dissemination for as long as these programs continue.</p>



Response to 2013-08 REDAC Recommendation - 1

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>The maturation of the Noise Research Roadmap should continue as expeditiously as possible and sufficient funding should be made available to ensure that this program is not unreasonably delayed. Results of the findings made in the course of this research should be used to update and implement Agency policy in the noise area.</p>	<p>The FAA appreciates the Subcommittee's support of our Noise Research Roadmap. We are allocating funds, within our resources constraints, to ensure it is successful. A major component of the roadmap is the national community annoyance survey that is being done in collaboration with the Airports Office. Another important new research development is our recent collaboration with NASA to leverage their efforts to gather noise data from aircraft flying at high altitudes to improve our ability to predict aircraft noise on the ground. We will continue to use our noise research efforts to inform Agency policy making.</p>



Response to 2013-08 REDAC Recommendation - 2

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>The Subcommittee recommends that the Agency review the research transition programs of other agencies to determine whether there are ways to further expedite the transition from research to implementation. A good starting point would be a study of the existing NASA-FAA Research Transition Team concept.</p>	<p>The FAA agrees with the Subcommittee on the importance of transitioning research results to implementation. We have a wide range of programs that are maturing environmental analysis tools, aircraft technologies, alternative jet fuels, and operational procedures and we appreciate suggestions on how we could facilitate their implementation. We are collaborating with NASA to learn more about their technology transition efforts.</p>



Response to 2013-08 REDAC Recommendation - 3

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>The Subcommittee strongly recommends that funding necessary to support the CLEEN/Alternative Fuels programs continue. Indeed, the subcommittee continues to endorse the AEE above-target funding request for the continuation of these programs at the highest possible level.</p>	<p>The FAA appreciates the support of the Subcommittee for the Continuous Lower Emissions Energy and Noise (CLEEN) Program, as well as our other programs that support alternative fuels development, as aircraft technology and alternative fuels are key elements of our approach to mitigate aviation's environmental impact. We continue to prepare for a second round of CLEEN (CLEEN II) and we will hold an Industry Day on December 3. We are also in the process of standing up the new Center of Excellence for Alternative Jet Fuels and Environment. In addition, the Commercial Aviation Alternative Fuels Initiative (CAAFI) continues to bring key stakeholders together to advance the deployment of alternative jet fuels.</p>



Response to 2013-08 REDAC Recommendation - 4

RECOMMENDATION	RESPONSE
<p>Sufficient funding should be available to AEE to permit continued U.S. leadership in the ICAO arena. For example, the current ICAO initiative to develop a worldwide CO₂ standard is moving forward, with specific deadlines that must be met. It is important that the United States remain engaged in a leadership position to focus the CAEP work on the most important efforts and to ensure that resources are not strained by less productive projects. In addition, it is important that other CAEP members provide resources for the various projects so that the United States does not carry the entire burden.</p>	<p>The FAA appreciates the recognition that U.S. leadership in the International Civil Aviation Organization Committee on Aviation Environmental Protection (ICAO/CAEP) is an important priority. To ensure we maintain our leadership position, we are actively participating in the ICAO/CAEP process and supporting research efforts to generate the data that is critical to inform decisions. Continued progress on a carbon dioxide (CO₂) emissions standard for aircraft is a direct result of our investments. Dependent on appropriations, we will continue to support research to advance the aircraft CO₂ emissions standard, as well as a particulate matter standard.</p>



Response to 2013-08 REDAC Recommendation - 5

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>In order to ensure the most efficient use of resources in all areas of environment and energy research, the Subcommittee recommends that existing partnerships between AEE and other agencies in the United States continue. In addition to ongoing work with a variety of agencies in the alternative fuels area, and with NASA on a variety of issues, the Subcommittee recommends that partners be identified to continue research efforts with respect to particulate matter measurements and modeling non-CO₂ atmospheric pollution.</p>	<p>The FAA agrees with the Subcommittee on the need for partnerships with other agencies in the U.S. and abroad. This is especially important in the current era of diminishing resources. The briefings provided to the Subcommittee by the Departments of Energy and Agriculture are part of our overall efforts to align the U.S. government efforts on alternative jet fuel development and deployment as well as to leverage international efforts. In the area of particulate matter emissions measurements, we are coordinating with NASA, the U.S. Environmental Protection Agency (EPA), Transport Canada, the Swiss Federal Office of Civil Aviation (FOCA), and the European Aviation Safety Agency (EASA) to conduct experiments as the resource requirements are beyond the ability of any one government entity. As suggested by the Subcommittee, we will continue to search for other partners in government and industry. In terms of modeling non-CO₂ atmospheric pollution, we are currently collaborating with the Canadian government while also seeking opportunities for partnerships in the U.S. and in Europe.</p>



Response to 2013-08 REDAC Recommendation - 6

<i>RECOMMENDATION</i>	<i>RESPONSE</i>
<p>The Subcommittee recommends that the Agency undertake a comprehensive review of its environmental goals, targets and metrics to determine whether existing goals and measurements are realistic or need to be revised. One specific target and metric that the Subcommittee feels needs revision is the fuel efficiency goal and metric.</p>	<p>The FAA undertook the work presented in the Goals and Targets briefing to understand the challenges in meeting our environmental goals and we appreciate the Subcommittee's recognition of the value of this effort. We will continue to evaluate our environmental goals, targets and metrics and present to the Subcommittee on a regular basis. As suggested by the Subcommittee, the fuel efficiency goal and metric are being reviewed and we will present an update to the Subcommittee at the March 2014 meeting.</p>



Actions Completed/Underway – from Previous Meetings

- Send CLEEN Program Manager opening to REDAC E&E Subcommittee. **DONE**
- Share the Section 912 report with the REDAC E&E Subcommittee. **DONE**
- Examine membership list and remove those who have not been in attendance over an extended period of time. **DONE**
- Provide briefing on PM standard efforts and how FAA efforts fit into bigger picture of other similar research efforts **DONE**
- For future meetings, develop budget pie charts that give skeleton for coming years in addition to historical break-outs. **DONE**
- Update the CLEEN one page fact sheet to include latest successes and industry implementation (if possible). Determine additional means of conducting outreach on CLEEN and its successes. **IN PROGRESS**
- Revise Noise Roadmap based on input from meeting. **IN PROGRESS**
- Capture optimistic, realistic, and pessimistic cases within the goals analysis as opposed to a single scenario for the future. **IN PROGRESS**
- Consider adding a subcommittee member that provides FAA ATO/ANG perspective (NAS-Ops REDAC member perhaps) as well as NATCA. **IN PROGRESS**

