

# FAA's Research Engineering and Development Advisory Committee

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# Organization

- What is REDAC?
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- What are the environmental priorities identified by REDAC?

# What is REDAC (legal)

- **Public Law 104-264 Federal Aviation Reauthorization Act of 1996 states:**

*“The Administrator shall consider the advice and recommendations of the research advisory committee established by section 44508 of this title in establishing priorities among major categories of research and development activities carried out by the Federal Aviation Administration.”*

*“... annually review the allocation made by the Administrator of the amounts authorized by section 48102(a) of this title among major categories of research and development activities carried out by the Administration and provide advice and recommendations to the Administrator on whether such allocation is appropriate to meet the needs and objectives identified under subparagraph (A).”*

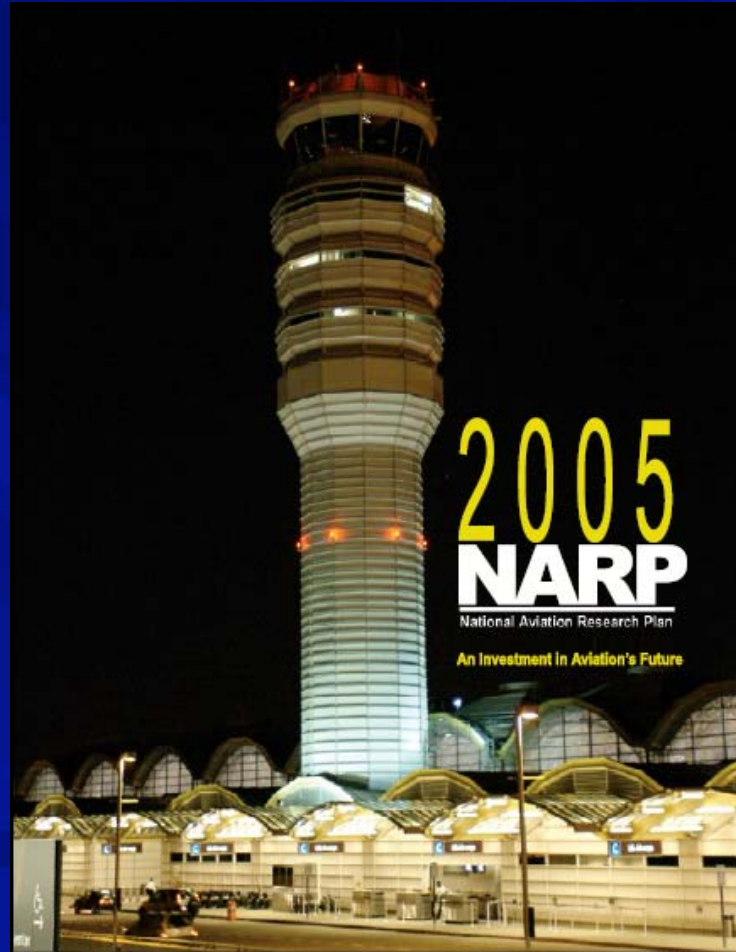
# What is REDAC (English)

- FAA's Research, Engineering and Development (R,E&D) Advisory Committee, established in 1989, advises the Administrator on research and development issues and coordinates the FAA's research, engineering and development activities with industry and other government agencies. The committee considers aviation research needs in air traffic services, airport technology, aircraft safety, aviation security, human factors, and environment and energy.
- A maximum of 30 members may serve on the Committee, representing corporations, universities, associations, consumers and government agencies. Members serve two year terms. [Joan Bauerlein](#), Director, Office of Operations Planning Research & Development, serves as the executive director of the committee.

# What does REDAC do?

- Review portfolio and provide Guidance on Environment R&D spending priorities and allocation of funding
- Provide strategic guidance on R&D required to support longer-term FAA plans and goals
- Act as a support group to address emerging issues, as needed
- Communicate and coordinate with other organizations (particularly Federal) to maintain sufficient knowledge and perspective to carry out advisory role
- Support FAA by providing research guidance that enables the FAA to provide effective leadership in national and international forums

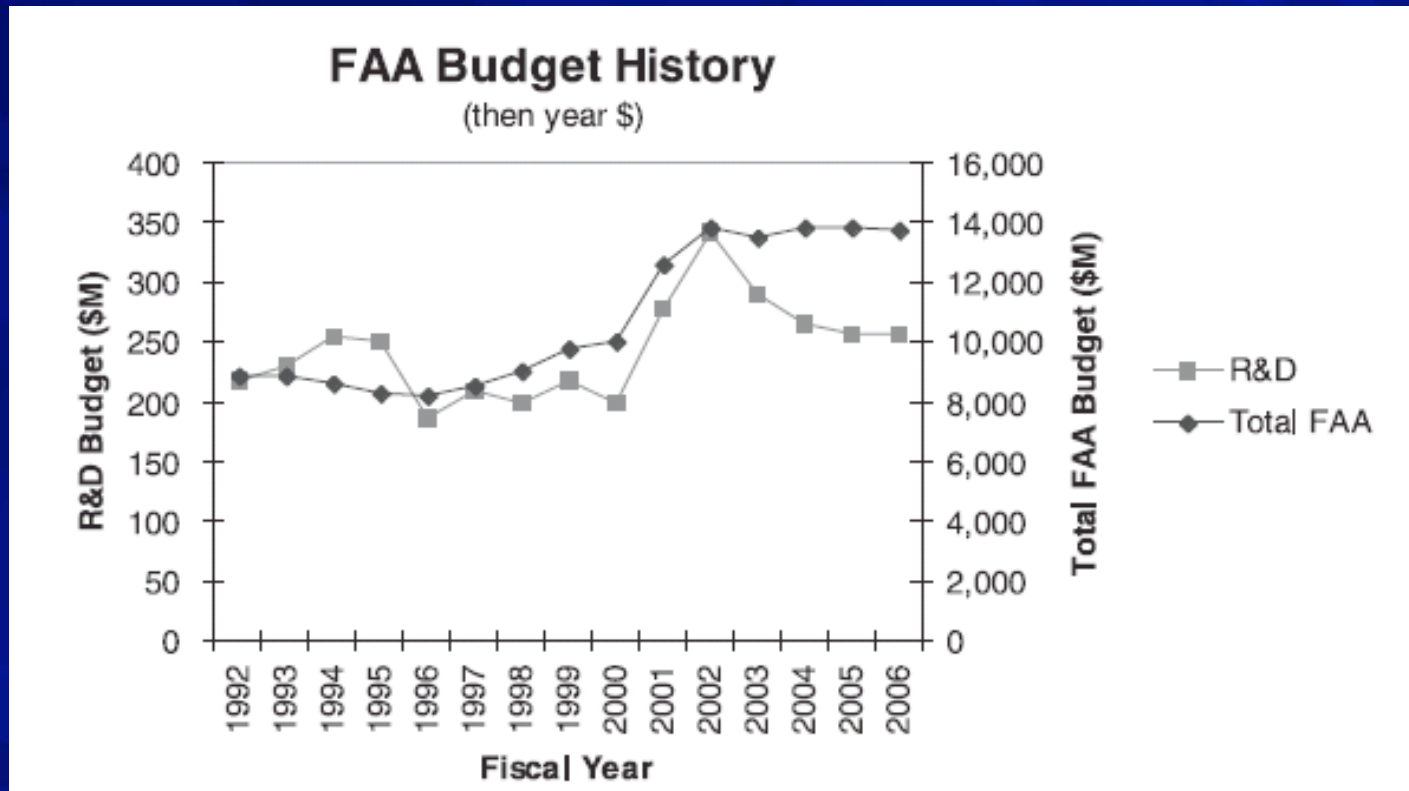
# What does REDAC do?



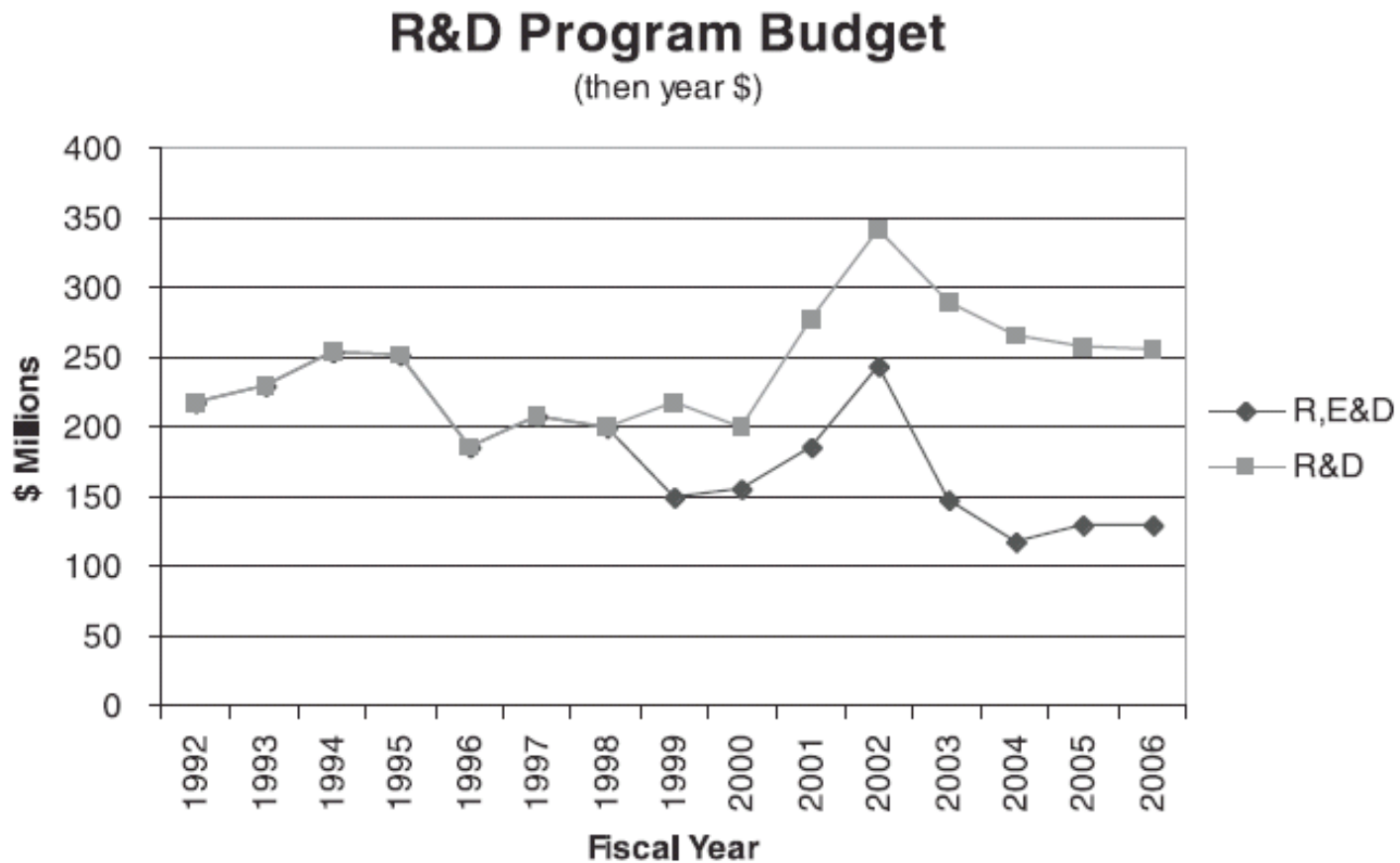
# What is the organization of REDAC?

- 30 member committee
- Subcommittees on:
  - Environment and Energy
  - Airports
  - Human Factors
  - Air Traffic Services
  - Aircraft Safety

# FAA Funding



# Research Engineering & Development Funding



# What are the priorities of the Environment & Energy Subcommittee

- Issue 1: Achieving Budget and Portfolio Content Alignment with Key Agencies
- Issue 2: Portfolio Content
- Issue 3: Partnerships

# Achieving Budget and Portfolio Content Alignment with Key Agencies

- The subcommittee noted that the needs to address the environmental challenges of the U.S. airspace system greatly exceed the available resources of any one agency. There is a shortage of funds and a critical need to achieve synergy of funding. This is particularly relevant of NASA, EPA, Department of Commerce (NOAA) and DoD.
- Recommendation:  
The FAA Administrator should seek to enhance collaboration in environmental research and development with NASA, EPA, DoC, and DoD through the Joint Planning and Development Office (JPDO) environmental Integrated Product Team (EIPT) as well as other appropriate forums. The Administrator should also ensure that there is representation from FAA's Office of Environment and Energy in the research and development advisory structure of each of these agencies.

# Portfolio Content

- The programs in the current FAA environment and energy research portfolio are the byproduct of years of discussion amongst all stakeholders hence the portfolio has the right content to address short, mid-term needs and the FAA should continue ongoing projects in FY08. However, the subcommittee also identified additional needs and an overarching need to address the balance in FAA's environment investment in all budget categories.
- Recommendation:  
The subcommittee asked that FAA address fuel/energy and water quality issues and recommends that the FAA fund scoping studies on each of these areas. The FAA should also increase research funding to address particulate matter and hazardous air pollutants issues that are serious impediments to capacity growth. The FAA should also assess all of its environmental investments and determine an appropriate balance between near term mitigation activities and research.

# Partnerships

- The subcommittee noted that the FAA has a number of critical strategic partnerships to address environmental issues. There is a need to carefully consider the potential benefits of these activities and focus resources on high payoff opportunities.
- Recommendation:  
The Administrator should direct the Office of Environment and Energy to work with the Partnership for Air Transportation Noise and Emissions Reduction (PARTNER) Center of Excellence to strengthen its partnerships with domestic stakeholders and build new linkages with international partners. The FAA should also increase its involvement in the Intergovernmental Panel on Climate Change processes, with the goal of ensuring that the best science informs decisions. Finally, the FAA needs to expand education, communication, and outreach strategies to communicate the breadth of its efforts mitigating aviation's environmental impact to stakeholders. The FAA should also define metrics to measure success in such an endeavor.

# Current FAA E&E research

<i>Tools</i>	<p>Analytical tool to enable integrated transparent analysis of noise and emissions at the aircraft level</p> <p>Integrated, transparent, aviation noise and emissions model to support the environmental decisions (e.g., infrastructure development, federal policies, and international agreements)</p> <p>Comprehensive, transparent model to support all facets of cost/benefit analysis needed to develop environmental policy</p> <p>Assess noise and emissions for various technology and operational scenarios</p>
COE	<p>Data on socio-economic effects of noise and noise mitigation to guide policy making</p> <p>Data on noise metrics correlating community response and role of noise characteristics in annoyance to enable more effective mitigation strategies</p> <p>Data to establish acceptance of civil supersonic flight operations</p> <p>New operational procedures to mitigate noise and emissions</p> <p>Data to enhance land use practices around airports</p> <p>Data on effectiveness of various airport control measures</p> <p>Data to assess the impact of aviation pollutants, including particulates and hazardous air pollutants</p> <p>Metrics and methodologies to assess impact, including health and climate, of aviation emissions</p>
Noise	<p>Standards for certification of new &amp; modified designs for reduction of aircraft noise</p> <p>Technical reports, handbooks, Advisory Circulars (AC), training courses, and procedures for use by manufacturers, modifiers, FAA field personnel and designees</p> <p>Global advancement of noise certification standards, guidance, and policies to improve certification process</p>
Emissions	<p>Technological, scientific, environmental, and economic bases to establish standards and certification regulations for new and modified engines to reduce exhaust emissions</p> <p>Technical reports, handbooks, AC's, training courses, and procedural guidance materials to ensure standardized implementation of regulations and procedures</p> <p>Internationally recognized measurement techniques for aviation emissions</p> <p>Identification and assessment of measures to mitigate the impact of aviation emissions</p>