

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

2321 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6301
(202) 225-6371
www.science.house.gov

October 20, 2011

The Honorable J. Randolph Babbitt
Administrator, Federal Aviation Administration (FAA)
800 Independence Avenue, SW
Washington, D.C. 20591

Dear Administrator Babbitt:

Recent industry developments confirm that composite materials will become increasingly prevalent in the manufacture of the next generation of civil airliners. Airplane manufacturers' widespread use of composites in aircraft construction, including in key, stress-bearing airframe components, will require specific skills and expertise among the Federal Aviation Administration (FAA) professionals responsible for overseeing the safety of the civil air transportation system, as well as among airline and repair station employees responsible for maintaining and repairing the next generation of aircraft.

Increasing reliance on composite materials in civilian airliners raises questions about how ready the FAA is to take steps to ensure the long-term safe operation of these aircraft. At our request, the Government Accountability Office (GAO) recently completed a review of the FAA's oversight of composite aircraft.¹ Although the GAO did not find that any of the concerns they identified posed extraordinary safety risks, they did identify several issues, particularly regarding "repair and maintenance of composites in commercial airplanes" that appear to warrant increased attention by the FAA.

The GAO identified four key safety-related concerns with the repair and maintenance of composites in commercial airplanes:

- (1) limited information on the behavior of airplane composite structures;
- (2) technical issues related to the unique properties of composite materials;
- (3) training and awareness;
- (4) standardization of repair materials and techniques.

¹ "AVIATION SAFETY: Status of FAA's Actions to Oversee the Safety of Composite Airplanes," Government Accountability Office, GAO-11-849, September 2011.

The GAO concluded:

As more airlines add airplanes with composite airframe structures to their fleets, the demand for composite maintenance and repair will increase. To accommodate that growth, FAA will likely need to certify and oversee an increasing number of repair facilities, and more FAA personnel will likely need knowledge and training in composites. It is, however, unclear at this time what the extent of the demand will be on FAA to certify additional repair stations for composites and on FAA inspectors who would oversee those stations. It is also too early to determine how well positioned FAA and its inspectors will be to meet future demands given that several FAA efforts, including in the areas of composite training and FAA guidance, are in the planning stages or are only recently under way.

Furthermore, we urge the FAA to leverage the expertise of the National Aeronautics and Space Administration (NASA) in composite material research. We believe that NASA could help provide specific insight into progressive damage analysis, appropriate to the commercial aircraft environment, and inspection and repair techniques appropriate for aircraft made of these materials.

We believe the increased reliance on composites in commercial aircraft warrants a proactive strategy on the part of FAA. Investing a decade developing NextGen air traffic technologies should be matched by equally deep thought and rapid action in preparing for safety in the airframes of the next generation of aircraft. Please provide a written response that tells us:

1. How the FAA is working with airframe manufacturers, airlines, and aircraft service centers to develop and enforce appropriate composites safety analysis, testing and repair regimens;
2. What steps the FAA is taking to prepare FAA inspectors to validate certifications of safety on composites in aircraft service and repairs;
3. What the FAA is doing to build robust and appropriate safety and maintenance requirements into the air safety system in light of the increased reliance on composites; and
4. The extent to which NASA research is assisting FAA in securing greater insight into the crashworthiness of rigid composites, detecting imperfections in the fiber laminates, and projecting how composite materials will respond to real-world operational incidents, such as damage from ground loading.

We would appreciate receiving your response to this letter by November 3, 2011.

Sincerely,

Eddie Bernice Johnson *Donna F. Edwards*

Ms. Eddie Bernice Johnson
Ranking Member
House Committee on
Science, Space & Technology

Ms. Donna F. Edwards
Ranking Member
Subcommittee on
Investigations & Oversight

Jerry V. Costello

Mr. Jerry Costello
Ranking Member
Subcommittee on Aviation
House Committee on
Transportation & Infrastructure