



U.S. House of Representatives
Committee on Transportation and Infrastructure
Washington, DC 20515

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SUMMARY OF SUBJECT MATTER

TO: Republican Members of the Aviation Subcommittee, Committee on Transportation and Infrastructure

FROM: Republican Aviation Subcommittee and Oversight and Investigation Staff, Committee on Transportation and Infrastructure

SUBJECT: Minority Views—Aviation Subcommittee Hearing on FAA Certification of the Eclipse 500 Aircraft

Purpose of Hearing

This hearing will review the allegations that were investigated by the Department of Transportation Office of Inspector General relating to the certification of the Eclipse Aviation Model 500 (EA-500).

Summary of Facts

The Federal Aviation Administration (FAA) has long-standing procedures that must be followed before a new aircraft may be certified as safe for mass production. First, an aircraft must receive approval of its design under FAA regulations, often referred to as the Type Certification (TC). Once the design has been approved, the manufacturer must prove to the FAA that it can replicate the design in production. This approval is referred to as the Production Certificate (PC).

The Eclipse EA-500 project was assigned to the Fort Worth Aircraft Certification Office (ACO) for type certification on October 6, 2003 when Eclipse moved their operation to Albuquerque, New Mexico. FAA's Manufacturing Inspection District Office (MIDO) in San Antonio, Texas exercised oversight of the EA-500 Production Certificate. These oversight office assignments are based on geographic locations of

FAA certification offices proximity to the applicant headquarters. Over three years later, the FAA issued the TC for the EA-500 on September 30, 2006, and it issued the PC on April 26, 2007, just over the six month regulator deadline.

Current and former FAA inspectors who worked on the EA-500 project from the FAA's Fort Worth ACO and the San Antonio MIDO have alleged that the type certification process was rushed to completion before the aircraft was ready, and that the production certificate was issued before Eclipse could show the ability to replicate the type design. FAA officials deny these allegations and assert the certification process for the EA-500 was compliant with applicable rules and regulations regarding aircraft certification.

Eclipse has responded to these allegations under the leadership of a new President and Chief Executive Officer. They believe that there is a fundamental misunderstanding of the very complicated FAA certification processes which has resulted in erroneous conclusions about the certification of the Eclipse EA-500. For instance, to the allegation that the certification process was rushed, they point to the fact that the application was first submitted in 2001, and that in 2006 alone, they pushed back their type certification plan deadline four times. While deadlines are an integral part of every certification process, Eclipse pointed out that they would push back the deadline if the plane was not ready for full type certification, including even when seeking the opportunity to have a fully type certified aircraft before the EAA AirVenture Airshow in Oshkosh in July of 2006. On the reliability of the process for the production certificate, Eclipse asserts that they complied with the regulatory requirements and stand by the safety record of the aircraft in service, and point to inspectors holding the manufacturer to requirements not in the certified type design and outside of their inspection authority for the PC process.

The Department of Transportation Office of Inspector General initiated an audit of the Eclipse EA-500 project in March 2007 after the OIG received DOT Hotline Complaints. Specifically, the complainants alleged that senior FAA officials prevented FAA inspectors from properly inspecting the production of the Eclipse EA-500 by, among other things, reassigning inspectors who had identified numerous deficiencies with the aircraft's production and prohibiting the new inspection team from looking under the aircraft floorboards during final inspection. The DOT OIG has not yet finished its audit of the EA-500 project, and will only be able to give preliminary findings at this hearing. The OIG has indicated that some irregularities in the Eclipse certification have been found, but has specifically indicated that they will not draw any conclusion with respect to the safety of the aircraft. The OIG's full report is expected in the upcoming months.

On August 11, 2008, the FAA chartered a Special Certification Review Team (SCR) to evaluate specific issues of compliance regarding the type certification of the Eclipse EA-500. The SCR team's charge was limited to issues surrounding the type certification of the aircraft as allegations regarding the issuance of the production certificate had not yet arisen. The SCR team was given 30 days to conduct its review. The SCR team was comprised of eight industry experts and FAA technical personnel

with over 250 years of aviation experience, and was led by Independent Certification and Safety Advisor Jerry Mack. The SCR Team ultimately found that the airplane met all applicable regulatory requirements in the areas reviewed. Further, the team did not identify any unsafe conditions needing immediate attention in the areas reviewed. However, the team made the following recommendations that they believe will improve the certification process based upon lessons learned during the new manufacturer-built EA-500 certification process:

- The FAA should develop guidance for demonstrating compliance to regulatory requirements based on a combination of software and system development processes;
- FAA should revise AC 23.1309-1C, Equipment, Systems, and Installations in Part 23 Airplanes, to address the emergence of turbine engine airplanes weighing 6,000 pounds or less maximum certificated weight;
- The FAA and Eclipse should conduct a root cause analysis of the operational trim and mistrim issues being reported in the field;
- The FAA and Eclipse should conduct a root cause analysis of the trim actuator failures documented through the SDR system and other in-service reports;
- All cognizant FAA offices (ACO, MIDO, AEG, and CMO) should work together to establish appropriate corrective action for fire suppression bottle failure issues documented through the SDR system and other in-service reports;
- The FAA should reevaluate the criteria for applicability of Function and Reliability (F&R) testing.

The SCR Report was made public on September 16, 2008 and can be accessed at the following website: <http://www.faa.gov/news/media/eclipse%20scr%20redacted.pdf>

Analysis

The FAA certification process in place today has contributed to the safest period in the history of manned flight. The safety record the system is enjoying today is the result of the hard work of many government and industry partners. While the FAA must remain focused on its role as a regulator, it is important to be careful to not stifle information sharing and collaboration. Much has been gained from industry's willingness to share mistakes, insight, and proprietary data with the government regulator, and that professional give and take must continue to exist to ensure our safe system stays safe.

It is important for the FAA to continually review and update as necessary the Federal Aviation Regulations for aircraft certification to accommodate new kinds of aircraft technology. But it is also important to remember that FAA certification is based on collaboration, coordination, and information sharing, and that part of the process should not be changed or stifled.

Majority Oversight Investigators have focused their attention on several aspects of the aircraft certification process that are fundamental to the process of safely certifying aircraft in the United States. The following are some of the key FAA certification methods the Committee will consider during the hearing:

- Organizational Designated Airworthiness Representative (ODAR): The Organizational Designated Airworthiness Representative (ODAR) designation is awarded by the FAA to an organization (ie: a manufacturer) that collectively meets the experience and technical requirements to exercise the “same care, diligence, judgment, and responsibility when performing the authorized functions as the FAA would use in performing the function.” The organization expresses a commitment to provide appropriate training to its ODAR team members, and ensure that the authorized functions are performed in a manner consistent with FAA regulation and policy. Regulations for specific ODAR positions detail experience and technical skill requirements necessary to qualify as an ODAR unit member.

Eclipse applied to the FAA for an ODAR designation and received the authorization in 2002 through the normal process including the interview of team members, site visits, and procedure manual review. The high levels of experience and technical knowledge of Eclipse ODAR unit members qualified the organization for the ODAR designation. Eclipse’s ODAR authority was limited and the company did not have the authority to provide airworthiness certificates for individual aircraft until after they received a production certificate in April of 2007.

For manufacturers, the ODAR designation is critical to partner with the FAA to ensure that the aircraft presented to the FAA for inspection meet criteria for safety certification. It is a tremendous responsibility that manufacturers take very seriously. According to the OIG, as a new manufacturer, Eclipse did experience problems in presenting finished aircraft to the FAA for certification. The OIG has questioned whether Eclipse received its ODAR designation abnormally early. Both FAA and Eclipse have disputed this claim.

- Minimum Certification Standards: When designing an aircraft for certification, FAA regulations establish minimum performance standards for different components that must be met for certification. Manufacturers plan their design process around these standards which are considered the benchmark for safety. In the case of Eclipse, the applicant felt that inspectors in Fort Worth and in San

Antonio were holding up certification of the aircraft until Eclipse could comply with requirements above the minimum certification standards. Upon review, senior FAA management officials were concerned that the local officials were not making all options for compliance available to the manufacturers.

By way of example, Eclipse proposed a change of plan to certify the avionics suite for the aircraft under the aircraft type certificate in accordance with regulation instead of through a Technical Standards Order Authorization (TSOA). While certifying the component under a Technical Standards Order Authorization (TSOA) process (which certifies the component more generally for installation in any type of aircraft) is more common, the type certification approach is an alternative process that is specifically enumerated as an option for certifying avionics components for a particular aircraft. FAA management found that the inspector in question was trying to hold the manufacturer to a higher standard (those of the TSOA process) rather than the type certification for a single aircraft, and after hearing from both the manufacturer and the local officials, directed the inspector to comply with the regulations and work with Eclipse on the alternative TC process expressly provided for in the applicable certification regulation.

Achieving Equivalent Level of Safety (ELoS) through other means of Compliance¹:

In the certification process, different regulatory methods of compliance, which achieve the same or "equivalent" level of safety, are an important safety tool for the Aircraft Certification Service. These different methods provide the FAA and the manufacturer a mechanism to show compliance, and obtain the required level of safety, for certification of aircraft components for which there is no suitable certification process enumerated in the regulations. The various regulatory methods of compliance are specifically listed in Federal Aviation Regulations and are instrumental in the certification of new, innovative aircraft designs, as well as in the achievement of advancement in aviation technology.

T&I majority staff have characterized these certification methods as "loopholes" that allow manufacturers to produce flawed and unsafe aircraft outside of certification guidelines. The Republican Staff wholeheartedly rejects this characterization of the current certification process, and embrace these methods as the means that allow innovation in the aircraft industry within acceptable levels of risk within a safety system that requires redundancy after redundancy.

¹ The alternate method of compliance (AMOC) was highlighted in the Southwest Airlines Maintenance Safety hearing this spring, but it is important to note something of a different meaning in the certification context.

In regard to Airworthiness Directive (AD) compliance as discussed this spring in the Maintenance Safety Oversight hearing, the AMOC process is a means to use and "alternate" or different method from that defined in the AD, to correct the unsafe condition and comply with the AD. Often times, this could involve a temporary repair until the aircraft gets to a suitable maintenance location for an overhaul.

Efforts to write prescriptive aircraft certification regulatory regimes would stifle the innovation in the industry that has allowed advancements in aircraft design that increase efficiency, reduce cost, and improve the overall safety record within the industry.

Moreover, the Republican staff is concerned about encouraging a “hammer looking for a nail” regulatory philosophy at the FAA. If manufacturers and other industry partners cannot develop a working, professional relationship with FAA officials that prospers a collaborative safety approach to regulating the industry, we are concerned that manufacturers will stop reporting mistakes, thereby eliminating the opportunity to learn from those mistakes and improve overall safety.

Finally, while there are lessons to be learned from the certification of a brand new type of aircraft, such as the Eclipse EA-500 very light jet, Republican staff rejects the inference that the certification process that occurred on the Eclipse project is representative of certification projects around the industry. The OIG has indicated that they have not received any similar allegations or complaints from other parts of the industry or FAA. FAA’s certification process for all aircraft, from large commercial transport aircraft down to small general aviation aircraft, is widely recognized as the gold standard around the world. This process is in part responsible for the historic safety record achieved by the FAA and industry in the last few years.

While the Republican staff do not dispute many of the facts explained in the Majority Summary of Subject Matter memo, we do not feel it is a complete summation of key facts, and ultimately disagree with the conclusions it reaches in the text and summary conclusions.

Witnesses

Panel I

The Honorable Calvin L. Scovel, III
Inspector General
U.S. Department of Transportation

Panel II

Mr. Tomaso DiPaulo
National Air Traffic Controllers Association

Mr. David Downey
Vice President, Flight Safety
Bell Helicopter Textron
Former Rotorcraft Directorate Manager
Aircraft Certification Service
Federal Aviation Administration

Mr. Dennis Wallace
Software Engineer
Rotorcraft Directorate, Aircraft Certification Service
Federal Aviation Administration

Mr. Ford Lauer
Manager, San Antonio Manufacturing Inspection District Office
Federal Aviation Administration

Ms. Maryetta Broyles
Technical Program Management Specialist
Manufacturing Inspection Office
Federal Aviation Administration

Panel III

Mr. Nicholas A. Sabatini
Associate Administrator for Aviation Safety
Federal Aviation Administration

Mr. John J. Hickey
Director, Aircraft Certification Service
Federal Aviation Administration

Mr. Ronald Wojnar
Senior Advisor, Aircraft Maintenance Division

Aircraft Certification Service
Federal Aviation Administration

Mr. Tom Hauter
Director, Office of Aviation Safety
National Transportation Safety Board

Panel IV

Ms. Peg Billson
Chief Executive Officer
Eclipse Aviation Corporation

Accompanied by:
Mr. Roel Pieper
Chief Executive Officer
Eclipse Aviation Corporation

Mr. Clyde Kizer
Retired Aerospace Executive