

must be reduced to a value that maintains a speed margin between V_{MO}/M_{MO} and V_D/M_D that is consistent with showing compliance with § 25.335(b) without the benefit of the high speed protection system.

5. Master minimum equipment list (MMEL) relief for the high speed protection system may be considered by the FAA Flight Operations Evaluation Board (FOEB) provided that the flight manual instructions indicate reduced maximum operating speeds as described in paragraph 4., and that no additional hazards are introduced with the high speed protection system inoperative. In addition, the cockpit display of the reduced operating speeds, as well as the overspeed warning for exceeding those speeds, must be equivalent to that of the normal airplane with the high speed protection system operative.

Issued in Renton, Washington, on May 24, 2011.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM446; Special Conditions No. 25-427-SC]

Special Conditions: Gulfstream Model GVI Airplane; Electronic Flight Control System: Control Surface Position Awareness

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for the Gulfstream GVI airplane. This airplane will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. These design features include an electronic flight control system. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for these design features. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: *Effective Date:* July 1, 2011.

FOR FURTHER INFORMATION CONTACT: Joe Jacobsen, FAA, Airplane and Flightcrew

Interface Branch, ANM-111, Transport Standards Staff, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington, 98057-3356; telephone (425) 227-2011; facsimile (425) 227-1320.

SUPPLEMENTARY INFORMATION:

Background

On March 29, 2005, Gulfstream Aerospace Corporation (hereafter referred to as “Gulfstream”) applied for an FAA type certificate for its new Gulfstream Model GVI passenger airplane. Gulfstream later applied for, and was granted, an extension of time for the type certificate, which changed the effective application date to September 28, 2006. The Gulfstream Model GVI airplane will be an all-new, two-engine jet transport airplane with an executive cabin interior. The maximum takeoff weight will be 99,600 pounds, with a maximum passenger count of 19 passengers.

Type Certification Basis

Under provisions of Title 14, Code of Federal Regulations (14 CFR) 21.17, Gulfstream must show that the Gulfstream Model GVI airplane (hereafter referred to as “the GVI”) meets the applicable provisions of 14 CFR part 25, as amended by Amendments 25-1 through 25-119, 25-122, and 25-124. If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the GVI because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

In addition to complying with the applicable airworthiness regulations and special conditions, the GVI must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36. The FAA must also issue a finding of regulatory adequacy pursuant to section 611 of Public Law 92-574, the “Noise Control Act of 1972.”

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.17(a)(2).

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design features, the special conditions would also apply to the other model under provisions of § 21.101.

Novel or Unusual Design Features

The Gulfstream Model GVI airplane has an electronic flight control system and no direct coupling from the cockpit controller to the control surface, so the pilot may not be aware of the actual surface position utilized to fulfill the requested command. Some unusual flight conditions, such as those arising from atmospheric conditions, aircraft malfunctions, or engine failures, may result in full or near-full control surface deflection. Unless the flightcrew is made aware of excessive deflection or impending control surface limiting, piloted or auto-flight system control of the airplane might be inadvertently continued to a point that could cause a loss of aircraft control or other unsafe stability or performance characteristic. Because electronic flight control system technology has outpaced existing regulations, a special condition is proposed to ensure control surface position awareness by the flightcrew.

Discussion

This special condition requires that suitable flight control position annunciation be provided to the flightcrew when a flight condition exists in which near-full surface authority (not crew-commanded) is being utilized. The suitability of such an annunciation must take into account that some pilot-demanded maneuvers, such as a rapid roll, are necessarily associated with intended full performance, and which may saturate the control surface. Simple alerting systems which would annunciate either intended or unexpected control-limiting situations must be properly balanced between providing necessary crew awareness and avoiding undesirable nuisance warnings.

This special condition establishes a level of safety equivalent to that provided by a conventional flight control system and that contemplated in existing regulations.

Discussion of Comments

Notice of proposed special conditions No. 25-11-05-SC for Gulfstream GVI airplanes was published in the **Federal Register** on February 17, 2011 (76 FR 9265). One supportive comment was received and these special conditions are adopted as proposed.

Applicability

As discussed above, this special condition is applicable to the Gulfstream Model GVI airplane. Should Gulfstream apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design features, this

special condition would apply to that model as well.

Conclusion

This action affects only certain novel or unusual design features of the GVI. It is not a rule of general applicability.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

The Special Condition

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special condition is issued as part of the type certification basis for the Gulfstream GVI airplanes.

In addition to compliance with §§ 25.143, 25.671, 25.672, and 25.1322, the following special condition applies:

When a flight condition exists where, without being commanded by the flightcrew, control surfaces are coming so close to their limits that return to the normal flight envelope and/or continuation of safe flight requires a specific flightcrew member action, a suitable flight control position annunciation must be provided to the flightcrew, unless other existing indications are found adequate or sufficient to prompt that action.

Note: The term “suitable” also indicates an appropriate balance between necessary operation and nuisance factors.

Issued in Renton, Washington, on May 20, 2011.

Ali Bahrami,

Manager, Transport Airplane Directorate,
Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0231; Directorate Identifier 2011-CE-003-AD; Amendment 39-16706; AD 2011-11-07]

RIN 2120-AA64

Airworthiness Directives; Diamond Aircraft Industries GmbH Model DA 42 Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Cracks have been reportedly found on DA 42 Main Landing Gear (MLG) Damper-to-Trailing Arm joints during standard maintenance. Depending on environmental-, operating- and runway conditions, the affected MLG joint, Part Number (P/N) D60-3217-23-5x (4 different lengths are available), which is made of aluminum, is susceptible to cracking.

This condition, if not detected and corrected, may lead to failure of the joint and subsequent damage or malfunction of the MLG, possibly resulting in damage to the aeroplane during landing and injury to occupants.

We are issuing this AD to require actions to correct the unsafe condition on these products.

DATES: This AD becomes effective July 6, 2011.

On July 6, 2011, the Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD.

ADDRESSES: You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

For service information identified in this AD, contact Diamond Aircraft Industries GmbH, N.A. Otto-Straße 5, A-2700 Wiener Neustadt, Austria, telephone: +43 2622 26700; fax: +43 2622 26780; e-mail: office@diamond-air.at; Internet: <http://www.diamond-air.at>. You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

FOR FURTHER INFORMATION CONTACT: Mike Kiesov, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4144; fax: (816) 329-4090.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the **Federal Register** on March 16, 2011 (76 FR 14346). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

Cracks have been reportedly found on DA 42 Main Landing Gear (MLG) Damper-to-Trailing Arm joints during standard maintenance. Depending on environmental-, operating- and runway conditions, the affected MLG joint, Part Number (P/N) D60-3217-23-5x (4 different lengths are available), which is made of aluminum, is susceptible to cracking.

This condition, if not detected and corrected, may lead to failure of the joint and subsequent damage or malfunction of the MLG, possibly resulting in damage to the aeroplane during landing and injury to occupants.

To address this unsafe condition, EASA issued AD 2010-0155 to require repetitive inspections of the MLG joint and, depending on findings, replacement with a serviceable part. Since that AD was issued, DAI developed an improved design MLG joint, P/N D64-3217-23-0x (also 4 different lengths available), which is made of steel and less susceptible to cracking.

For the reasons described above, this new AD retains the requirements of EASA AD 2010-0155R1, which is superseded, and adds the terminating action requirement to modify the aeroplane by installing the improved steel part. This new AD also prohibits re-installation of the aluminum part.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

We reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

Differences Between This AD and the MCAI or Service Information

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow FAA policies.