

§ 25.1335 [Removed]

■ 3. Amend part 25 by removing § 25.1335.

Issued in Washington, DC, on April 5, 2006.

Marion C. Blakey,
Administrator.

[FR Doc. 06-3467 Filed 4-10-06; 8:45 am]

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DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 25**

[Docket No. NM344; Special Conditions No. 25-314-SC]

Special Conditions: McDonnell Douglas DC-8-72F Airplanes; High-Intensity Radiated Fields (HIRF)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for McDonnell Douglas DC-8-72F airplanes modified by Avionics and Systems Integration Group, LLC. These modified airplanes will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. The modification incorporates the installation of Universal Avionics Systems Corporation EFI-600 Electronic Flight Instruments that perform critical functions. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for the protection of these systems from the effects of high-intensity radiated fields (HIRF). 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: The effective date of these special conditions is March 17, 2006.

We must receive your comments by May 11, 2006.

ADDRESSES: You must mail two copies of your comments to: Federal Aviation Administration, Transport Airplane Directorate, Attention: Rules Docket (ANM-113), Docket No. NM343, 1601 Lind Avenue SW., Renton, Washington 98055-4056. You may deliver two copies to the Transport Airplane Directorate at the above address. You must mark your comments: Docket No. NM343. You can inspect comments in the Rules Docket weekdays, except

Federal Holidays, between 7:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT: Greg Dunn, FAA, Airplane and Flight Crew Interface Branch, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington 98055-4056; telephone (425) 227-2799; facsimile (425) 227-1320.

SUPPLEMENTARY INFORMATION:**Comments Invited**

The FAA has determined that notice and opportunity for prior public comment is impracticable because these procedures would significantly delay certification of the airplane and thus delivery of the affected aircraft. In addition, the substance of these special conditions has been subject to the public comment process in several prior instances with no substantive comments received. The FAA, therefore, finds that good cause exists for making these special conditions effective upon issuance; however, we invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive as well as a report summarizing each substantive public contact with FAA personnel concerning these special conditions. You may inspect the docket before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 7:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late, if it is possible to do so without incurring expense or delay. We may change these special conditions, based on the comments we receive.

If you want the FAA to acknowledge receipt of your comments on these special conditions, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

Background

On September 2, 2005, Avionics and Systems Integration Group, LLC, 2734 Burbank St., Dallas, Texas 75235, applied for a Supplemental Type

Certificate (STC) to modify McDonnell Douglas DC-8-72F airplanes. These models are currently approved under Type Certificate No. 4A25. The McDonnell Douglas DC-8-72F is a transport category airplane. The airplanes are powered by 4 CFM International Turbofan CFM56-2-C1, CFM56-2-C3, CFM56-2-C5, or CFM56-2-C6 engines and have a maximum takeoff weight of 335,000 pounds. This airplane operates with a pilot, co-pilot, and flight engineer and can hold up to 201 passengers. The modification incorporates installation of Universal Avionics Systems Corporation EFI-600 Electronic Flight Instruments. The EFI-600 displays are replacements for the mechanical heading (HSI) and attitude (ADI) instruments. The avionics/electronics and electrical systems installed in this airplane have the potential to be vulnerable to high-intensity radiated fields (HIRF) external to the airplane.

Type Certification Basis

Under 14 CFR 21.101, Avionics and Systems Integration Group, LLC, must show that the DC-8-72F, as modified, continues to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. 4A25, or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the "original type certification basis." The certification basis for the DC-8-72F airplanes includes provisions from both the Civil Air Regulations Part 4B and 14 CFR part 25, as listed on Type Certificate No. 4A25. The certification basis also includes special conditions, additional requirements, and exemptions listed in the type certificate data sheet that are not relevant to these special conditions.

If the Administrator finds that the applicable airworthiness regulations do not contain adequate or appropriate safety standards for the McDonnell Douglas DC-8-72F airplanes because of a novel or unusual design feature, special conditions are prescribed under § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the DC-8-72F airplanes 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.

Special conditions, as defined in 14 CFR 11.19, are issued under § 11.38 and become part of the type certification basis under § 21.101.

Special conditions are initially applicable to the model for which they are issued. Should the applicant subsequently apply for an STC to modify any other model included on Type Certificate No. 4A25 to incorporate the same or similar novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

Novel or Unusual Design Features

As noted earlier, the McDonnell Douglas DC-8-72F airplanes modified by Avionics and Systems Integration Group, LLC, will incorporate dual Electronic Primary Flight Displays that perform critical functions. This system may be vulnerable to high-intensity radiated fields external to the airplane. The current airworthiness standards do not contain adequate or appropriate safety standards for the protection of this equipment from the adverse effects of HIRF. Accordingly, this system is considered to be a novel or unusual design feature.

Discussion

There is no specific regulation that addresses protection for electrical and

electronic systems from HIRF. Increased power levels from ground-based radio transmitters and the growing use of sensitive avionics/electronics and electrical systems to command and control airplanes have made it necessary to provide adequate protection.

To ensure that a level of safety is achieved equivalent to that intended by the regulations incorporated by reference, special conditions are needed for the McDonnell Douglas DC-8-72F airplanes modified by Avionics and Systems Integration Group, LLC. These special conditions require that new avionics/electronics and electrical systems that perform critical functions be designed and installed to preclude component damage and interruption of function due to both the direct and indirect effects of HIRF.

High-Intensity Radiated Fields (HIRF)

With the trend toward increased power levels from ground-based transmitters and the advent of space and satellite communications coupled with electronic command and control of airplanes, the immunity of critical avionics/electronics and electrical systems to HIRF must be established.

It is not possible to precisely define the HIRF to which the airplane will be exposed in service. There is also uncertainty concerning the effectiveness of airframe shielding for HIRF.

Furthermore, coupling of electromagnetic energy to cockpit-installed equipment through the cockpit window apertures is undefined. Based on surveys and analysis of existing HIRF emitters, an adequate level of protection exists when compliance with the HIRF protection special condition is shown with either paragraph 1 OR 2 below:

1. A minimum threat of 100 volts rms (root-mean-square) per meter electric field strength from 10 KHz to 18 GHz.

a. The threat must be applied to the system elements and their associated wiring harnesses without the benefit of airframe shielding.

b. Demonstration of this level of protection is established through system tests and analysis.

2. A threat external to the airframe of the field strengths identified in the table below for the frequency ranges indicated. Both peak and average field strength components from the table are to be demonstrated.

Frequency	Field strength (volts per meter)	
	Peak	Average
10 kHz—100 kHz	50	50
100 kHz—500 kHz	50	50
500 kHz—2 MHz	50	50
2 MHz—30 MHz	100	100
30 MHz—70 MHz	50	50
70 MHz—100 MHz	50	50
100 MHz—200 MHz	100	100
200 MHz—400 MHz	100	100
400 MHz—700 MHz	700	50
700 MHz—1 GHz	700	100
1 GHz—2 GHz	2000	200
2 GHz—4 GHz	3000	200
4 GHz—6 GHz	3000	200
6 GHz—8 GHz	1000	200
8 GHz—12 GHz	3000	300
12 GHz—18 GHz	2000	200
18 GHz—40 GHz	600	200

The field strengths are expressed in terms of peak of the root-mean-square (rms) over the complete modulation period.

The threat levels identified above are the result of an FAA review of existing studies on the subject of HIRF, in light of the ongoing work of the Electromagnetic Effects Harmonization Working Group of the Aviation Rulemaking Advisory Committee.

Applicability

As discussed above, these special conditions are applicable to McDonnell Douglas DC-8-72F airplanes modified by Avionics and Systems Integration Group, LLC. Should the applicant subsequently apply for an STC to

modify any other model included on Type Certificate No. 4A25 to incorporate the same or similar novel or unusual design feature, these special conditions would apply to that model as well under § 21.101.

Conclusion

This action affects only certain novel or unusual design features on McDonnell Douglas DC-8-72F airplanes modified by Avionics and Systems Integration Group, LLC. It is not a rule of general applicability and affects only the applicant which applied to the FAA

for approval of these features on the airplane.

The substance of these special conditions has undergone the notice and comment procedure in several prior instances and has been derived without substantive change from those previously issued. Because a delay would significantly affect the certification of the airplane, which is imminent, the FAA has determined that prior public notice and comment are unnecessary and impracticable, and good cause exists for adopting these

special conditions upon issuance. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comment described above.

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 Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the supplemental type certification basis for the McDonnell Douglas DC-8-72F airplanes modified by Avionics and Systems Integration Group, LLC.

1. *Protection from Unwanted Effects of High-Intensity Radiated Fields (HIRF).* Each electrical and electronic system that performs critical functions must be designed and installed to ensure that the operation and operational capability of the system to perform critical functions are not adversely affected when the airplane is exposed to high-intensity radiated fields.

2. For the purpose of these special conditions, the following definition applies:

Critical Functions: Functions whose failure would contribute to or cause a failure condition that would prevent the continued safe flight and landing of the airplane.

Issued in Renton, Washington, on March 17, 2006.

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-2005-22471; Directorate Identifier 2005-NM-142-AD; Amendment 39-14550; AD 2006-07-23]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 757 Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Boeing Model 757 airplanes. This AD requires repetitive measurements of the freeplay of each of the three power control units (PCUs) that move the rudder; repetitive lubrication of rudder components; and corrective actions if necessary. This AD results from a report of freeplay-induced vibration of the rudder. The potential for vibration of the control surface should be avoided because the point of transition from vibration to divergent flutter is unknown. We are issuing this AD to prevent excessive vibration of the airframe during flight, which could result in divergent flutter and loss of control of the airplane.

DATES: This AD becomes effective May 16, 2006.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of May 16, 2006.

ADDRESSES: You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, room PL-401, Washington, DC.

Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for service information identified in this AD.

FOR FURTHER INFORMATION CONTACT: Dennis Stremick, Aerospace Engineer, Airframe Branch, ANM-120S, Seattle Aircraft Certification Office, FAA, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6450; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Examining the Docket

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the **ADDRESSES** section.

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to all Boeing Model 757 airplanes. That NPRM was published in the **Federal Register** on September 21, 2005 (70 FR 55321). That NPRM proposed to

require repetitive measurements of the freeplay of each of the three power control units (PCUs) that move the rudder; repetitive lubrication of rudder components; and corrective actions if necessary.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Request To Revise Discussion Section's Reference to Freeplay-Induced Flutter

Boeing requests that we revise the wording in the first sentence of the Discussion section of the NPRM to replace the phrase "freeplay-induced flutter" with the phrase "freeplay-induced vibration." Boeing states that the event noted in the Discussion section was not divergent flutter, but was a constant amplitude event induced by excessive freeplay. Boeing states that the service event is consistently described as freeplay-induced vibration elsewhere in the NPRM. Boeing points out that using the phrase "freeplay-induced flutter" in relation to the service event may lead readers to the incorrect conclusion that the service event was divergent flutter.

We agree that the Discussion section incorrectly stated that there has been one report of "freeplay-induced flutter," rather than "freeplay-induced vibration." Since the Discussion section of the preamble does not reappear in the final rule, we have not changed that section. However, we have changed the unsafe condition in the Summary paragraph and in paragraph (d) of this AD to include clarification about freeplay-induced vibration.

Request To Clarify Paragraph (e), "Compliance"

Boeing also requests that we change paragraph (e), "Compliance," which states, "* * * unless the actions have already been done." Boeing requests that we clarify the sentence by stating, "* * * unless the actions have already been done per the appropriate service bulletin referenced in paragraph (f) below." Boeing requests that we give credit for lubrications accomplished previously in accordance with the airplane maintenance manual (AMM). Boeing also states that the service bulletins specified in paragraph (f) of the NPRM institute significant improvements in the freeplay measurements and procedures over those in the AMM. Boeing would like to ensure that freeplay checks performed per the AMM are not considered