

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 July 1, 2005.

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. NM312; Special Conditions No. 25-292-SC]

Special Conditions: Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F Airplanes; Model Mystere-Falcon 200 Airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 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 Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes modified by Royal Air, Inc. 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 is the installation of new air data display units (ADDU) and a new air data sensor, which 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 July 1, 2005.

Comments must be received on or before August 11, 2005.

ADDRESSES: Comments on these special conditions may be mailed in duplicate to: Federal Aviation Administration, Transport Airplane Directorate, Attention: Rules Docket (ANM-113), Docket No. NM312 1601 Lind Avenue SW., Renton, Washington 98055-4056; or delivered in duplicate to the Transport Airplane Directorate at the above address. All comments must be marked Docket No. NM312.

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 persons to participate in this rulemaking by submitting 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. The docket is available for public inspection 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 January 28, 2005, Royal Air, Inc., 2141 Airport Road, Waterford, Michigan 48327, applied for a supplemental type certificate (STC) to modify Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes currently approved under Type Certificate No. A7EU. The Dassault Aviation Falcon series airplanes are small transport category airplanes powered by two turbojet engines, with maximum takeoff weights of up to 18,000 pounds. These airplanes operate with a 2-pilot crew and can seat up to 8 passengers. The proposed modification is the installation of ADDUs and an air data sensor manufactured by Innovative Solutions & Support. 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 the provisions of 14 CFR 21.101, Royal Air, Inc. must show that the Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes, as changed, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A7EU, 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 Dassault Model Fan Jet Falcon and Fan Jet Falcon Series C, D, E, and F airplanes includes the applicable paragraphs of CAR 4b, as amended by Amendments 4b-1 through 4b-12, Special Regulation SR-422B, and 14 CFR part 25 as amended by provisions of Amendment 25-4 in lieu of CAR 4b.350(e) and (f). The certification basis for the Dassault Model Mystere-Falcon 200 airplanes includes the applicable paragraphs of CAR 4b, as amended by Amendments 4b-1 through 4b-12; Special Regulation SR-422B and 14 CFR part 25 as amended by certain sections of Amendments 25-1 through 25-46;

SFAR 27 as amended by Amendments 27-1 through 27-3; and 14 CFR part 36 as amended by Amendments 36-1 through 36-12. The certification basis for the Dassault Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes includes the applicable paragraphs of CAR 4b, as amended by Amendments 4b-1 through 4b-12, Special Regulation SR-422B, and 14 CFR part 25 as amended by certain sections in Amendments 25-1 through 25-56; § 25.904 and Appendix 1 as amended by Amendment 25-62; SFAR 27 as amended by Amendments 27-1 through 27-6; and 14 CFR part 36 as amended by Amendments 36-1 through 36-15. In addition, the certification basis includes certain later amended sections of the applicable part 25 regulations that are not relevant to these special conditions.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, part 25, as amended) do not contain adequate or appropriate safety standards for the Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 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 in accordance with § 11.38 and become part of the type certification basis in accordance with § 21.101.

Special conditions are initially applicable to the model for which they are issued. Should Royal Air, Inc. apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A7EU to incorporate the same or similar novel or unusual design feature, these special conditions would also apply to the other model under the provisions of § 21.101.

Novel or Unusual Design Features

As noted earlier, the Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5,

and 20-F5 airplanes modified by Royal Air, Inc. will incorporate ADDUs and an air data sensor manufactured by Innovative Solutions & Support. The ADDUs and air data sensor perform critical functions. These systems may be vulnerable to high-intensity radiated fields external to the airplane. The current airworthiness standards of part 25 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 requirements 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 Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes modified by Royal Air, Inc. 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 the airplane, 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 Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes modified by Royal Air, Inc. Should Royal Air, Inc. apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A7EU to incorporate the same or similar novel or unusual design feature, these special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features on Dassault

Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes modified by Royal Air, Inc. It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of these features on the airplane.

The substance of these special conditions has been subjected to 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 Dassault Model Fan Jet Falcon, Fan Jet Falcon Series C, D, E, and F airplanes; Model Mystere-Falcon 200 airplanes; and Model Mystere-Falcon 20-C5, 20-D5, 20-E5, and 20-F5 airplanes modified by Royal Air, Inc.

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 these systems 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 July 1, 2005.

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-2005-20725; Directorate Identifier 2003-NM-250-AD; Amendment 39-14183; AD 2005-14-06]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 707-300B, -300C, and -400 Series 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 707-300B, -300C, and -400 series airplanes. This AD requires repetitive inspections to detect cracked or broken hinge fitting assemblies of the inboard leading edge slats, and corrective action if necessary. This AD also provides as an option a preventive modification, which defers the repetitive inspections. In addition, this AD provides an option of replacing all hinge fitting assemblies with new, improved parts, which terminates the repetitive inspection requirements. This AD is prompted by results of a review to identify and implement procedures to ensure the continued structural airworthiness of aging transport category airplanes. We are issuing this AD to detect and correct fatigue cracking of the hinge fitting assembly of the inboard leading edge slats, which could result in reduced structural integrity of the slat system. This condition could result in loss of the inboard leading edge slat and could cause the flightcrew to lose control of the airplane.

DATES: This AD becomes effective August 16, 2005.

The incorporation by reference of a certain publication listed in the AD is approved by the Director of the Federal Register as of August 16, 2005.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

Docket: The AD docket contains the proposed AD, comments, and any final

disposition. You can examine the 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 U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Washington, DC. This docket number is FAA-2005-20725; the directorate identifier for this docket is 2003-NM-250-AD.

FOR FURTHER INFORMATION CONTACT:

Candice Gerretsen, Aerospace Engineer, Airframe Branch, ANM-120S, FAA Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 98055-4056; telephone (425) 917-6428; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with an AD for all Boeing Model 707-300B, -300C, and -400 series airplanes. That action, published in the **Federal Register** on March 30, 2005 (70 FR 16177), proposed to require repetitive inspections to detect cracked or broken hinge fitting assemblies of the inboard leading edge slats, and corrective action if necessary. That action also proposed an optional preventive modification, which defers the repetitive inspections. In addition, that action proposed an option of replacing all hinge fitting assemblies with new, improved parts, which terminates the repetitive inspection requirements.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comment that has been submitted on the proposed AD. The commenter supports the proposed AD.

Explanation of Change to Referenced Service Bulletin

We have corrected the title of the service bulletin referred to in this AD to "Boeing 707/720 Service Bulletin 2982."

Clarification of Optional Preventative Modification

We have revised the text of paragraph (i) of the AD to clarify that the optional preventative modification "defers the repetitive inspections required by paragraph (g) of this AD."

Conclusion

We have carefully reviewed the available data, including the comment that has been submitted, and determined that air safety and the