

Rules and Regulations

Federal Register

Vol. 68, No. 117

Wednesday, June 18, 2003

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM257; Special Conditions No. 25-238-SC]

Special Conditions: Boeing Model 747SP Series; 747-100 Series; and 747-200B, -200C, and -200F Series Airplanes; High-Intensity Fields (HIRF)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments

SUMMARY: These special conditions are issued for Boeing Model 747SP series; 747-100 series; and 747-200B, -200C, and -200F series airplanes. These 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 airplane modification includes the installation of an Electronic Flight Instrument System (EFIS), which performs critical functions. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for the protection of this system 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.

EFFECTIVE DATE: The effective date of these special conditions is June 10, 2003. Comments must be received on or before July 18, 2003.

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. NM257, 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. NM257.

FOR FURTHER INFORMATION CONTACT: Greg Dunn, FAA, Airplane and Flight Crew Branch, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2799; facsimile (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA has determined that notice and opportunity for public comment in accordance with 14 CFR 11.38 are unnecessary, because the FAA has provided previous opportunities to comment on substantially identical special conditions and has fully considered and addressed all the substantive comments received. Based on a review of the comment history and the comment resolution, the FAA is satisfied that new comments are unlikely. The FAA, therefore, finds that good cause exists for making these special conditions effective upon issuance.

However, the FAA invites 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 May 1, 2002, J.R.G Design submitted an application to the New York Aircraft Certification Office for a Supplemental Type Certificate (STC). The Boeing Model 747SP series; 747-100 series; and 747-200B, -200C, and -200F series airplanes are being modified for use by a head of state; they are non N-registered airplanes operating under part 91. This project involves replacing round dial displays in the cockpit with four EFIS displays. The EFIS upgrade is for multiple airplane installations. These systems may be vulnerable to HIRF external to the airplane.

Type Certification Basis

Under the provisions of 14 CFR 21.17, J.R.G Design, Inc. must show that Boeing Model 747SP series; 747-100 series; and 747-200B, -200C, and -200F series airplanes meet the applicable provisions in effect on the date of application for the supplemental type certificate or applicable provisions of 14 CFR part 25, as amended by Amendments 21-1 through 25-106, for areas affected by the change to the greatest extent feasible. If the Administrator finds that the applicable airworthiness regulations (*i.e.*, part 25 as amended) do not contain adequate or appropriate safety standards for Boeing Model 747SP series; 747-100 series; and 747-200 series 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, Boeing Model 747SP series; 747-100 series; and 747-200B, -200C, and -200F series 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, and the FAA must issue a finding of regulatory adequacy pursuant to § 611 of Public Law 92-574, the "Noise Control Act of 1972."

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(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 feature, these special conditions would also apply to the other model under the provisions of § 21.101(a)(1), Amendment 21-69, effective September 16, 1991.

Novel or Unusual Design Features

As noted earlier, Boeing Model 747SP series; 747-100 series; and 747-200B, -200C, and -200F series airplanes will incorporate four EFIS displays (two for each pilot) that will perform critical functions. These systems may be vulnerable to HIRF 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, these systems are considered to be novel or unusual designs.

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 Boeing Model 747SP series; 747-100 series; and 747-200B, -200C, and -200F series airplanes. These special conditions require that avionic/electronic 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 avionic/electronic 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

Note.—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 Boeing Model 747SP series; 747-110 series; and 747-200B, -200C, and -200F series airplanes. Should J.R.G. Design apply at a later date for a type certificate change for these airplane models incorporating the same novel or unusual design feature, these special conditions would

apply to those airplanes as well, under the provisions of § 21.101(a)(1), Amendment 21-69, effective September 16, 1991.

Conclusion

This action affects only certain novel or unusual design features on Boeing Model 747SP series; 747-100 series; and 747-200B, -200C, and -200F series airplanes. 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 FAA has determined that notice and opportunity for public comment are unnecessary, because the FAA has provided previous opportunities to comment on substantially identical special conditions and has fully considered and addressed all the substantive comments received. The FAA is satisfied that new comments are unlikely and finds, therefore, that good cause exists for making these special conditions effective upon issuance.

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 type certification basis for Boeing Model 747SP series; 747-100 series; and 747-200B, -200C, and -200F series airplanes.

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 June 10, 2003.

Kalene C. Yanamura,

*Acting Manager, Transport Airplane
Directorate, Aircraft Certification Service.*

[FR Doc. 03-15401 Filed 6-17-03; 8:45 am]

BILLING CODE 4910-13-M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NM-331-AD; Amendment 39-13195; AD 2003-12-10]

RIN 2120-AA64

Airworthiness Directives; Aerospatiale Model ATR42-200, -300, -320, and -500 Series Airplanes; and Model ATR72-102, -202, -212, and 212A Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Aerospatiale Model ATR42-200, -300, -320, and -500 series airplanes; and Model ATR72-102, -202, -212, and 212A series airplanes; that requires modification of the flight attendant's seat located in the front of the cabin, and follow-on actions. This action is necessary to prevent release of the forward flight attendant's shoulder restraint harness, which could result in injury to the flight attendant in case of turbulence. This action is intended to address the identified unsafe condition.

DATES: Effective July 23, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of July 23, 2003.

ADDRESSES: The service information referenced in this AD may be obtained from Aerospatiale, 316 Route de Bayonne, 31060 Toulouse, Cedex 03, France. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Dan Rodina, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2125; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain Aerospatiale Model ATR42-200, -300, -320, and -500 series airplanes; and Model ATR72-102, -202, -212, and 212A series airplanes was published in the **Federal Register** on February 21, 2003 (68 FR 8477). That action proposed to require modification of the flight attendant's seat located in the front of the cabin, and follow-on actions.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were submitted in response to the proposal or the FAA's determination of the cost to the public.

Clarification of Applicability

We have revised the applicability listed in Table 1 in this final rule to more clearly identify those airplanes affected by this AD.

Conclusion

After careful review of the available data, we have determined that air safety and the public interest require the adoption of the rule with the change described previously. The FAA has determined that this change will neither increase the economic burden on any operator nor increase the scope of the AD.

Changes to 14 CFR Part 39/Effect on the AD

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. However, for clarity and consistency in this final rule, we have retained the language of the NPRM regarding that material.

Cost Impact

The FAA estimates that approximately 80 airplanes of U.S. registry will be affected by this AD, that it will take approximately 1 work hour per airplane to accomplish the required actions, and that the average labor rate is \$60 per work hour. Required parts will cost approximately \$1,786 per airplane. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be \$147,680, or \$1,846 per airplane.

The cost impact figure discussed above is based on assumptions that no

operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption **ADDRESSES**.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

■ Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

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

§ 39.13 [Amended]

■ 2. Section 39.13 is amended by adding the following new airworthiness directive:

2003-12-10 Aerospatiale: Amendment 39-13195. Docket 2002-NM-331-AD.