

Instrument System (EFIS), Mil Std 1553 data buses and dual head-up displays that provide critical data to the flightcrew and a Full Authority Digital Engine Control (FADEC) system that controls critical engine parameters. These systems may be vulnerable to high-intensity radiated fields (HIRF) external to the airplane.

#### 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 electrical and electronic 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 issued for the L382J which require that new technology electrical and electronic systems, such as the EFIS, FADEC, HUD, etc., 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

With the trend toward increased power levels from ground based transmitters, plus the advent of space and satellite communications, coupled with electronic command and control of the airplane, the immunity of critical digital avionics 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 paragraphs 1 or 2 below:

1. A minimum threat of 100 volts per meter peak 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 following field strengths for the frequency ranges indicated.

Frequency	Peak (V/M)	Average (V/M)
10 KHz–100 KHz .....	50	50
100 KHz–500 KHz .....	60	60
500 KHz–2000 KHz .....	70	70
2 MHz–30 MHz .....	200	200
30 MHz–100 MHz .....	30	30
100 MHz–200 MHz .....	150	33
200 MHz–400 MHz .....	70	70
400 MHz–700 MHz .....	4,020	935
700 MHz–1000 MHz .....	1,700	170
1 GHz–2 GHz .....	5,000	990
2 GHz–4 GHz .....	6,680	840
4 GHz–6 GHz .....	6,850	310
6 GHz–8 GHz .....	3,600	670
8 GHz–12 GHz .....	3,500	1,270
12 GHz–18 GHz .....	3,500	360
18 GHz–40 GHz .....	2,100	750

As discussed above, these special conditions would be applicable initially to the Model L382J. Should Lockheed Martin Aerospace Corp. apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well, under the provisions of § 21.101(a)(1).

#### Conclusion

This action affects only certain design features on the Lockheed Martin Aerospace Corporation Model L382J airplanes. 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 for this airplane has been submitted to the notice and comment procedure in several prior instances and has been derived without substantive change from those previously issued. It is unlikely that prior public comment would result in a significant change from the substance contained herein. For this reason, and 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 immediately. Therefore, these special conditions are being made effective 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 proposed 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 the Lockheed Martin Aerospace Corp. Model L382J 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 this 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 April 2, 1997.

**Darrell M. Pederson,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service, ANM-100.*

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 96-NM-93-AD; Amendment 39-9992; AD 97-08-04]

RIN 2120-AA64

#### Airworthiness Directives; Airbus Model A320-111, -211, -212, and -231 Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Airbus Model A320-111, -211, -212, and -231 series airplanes, that requires reinforcement of the tail section of the fuselage at frames 68 and 69. This amendment is prompted by reports indicating that the tail section has struck the runway during takeoffs and landings. The actions specified by this AD are intended to prevent structural damage to the tail section when it strikes the runway; that

condition, if not detected, could result in depressurization of the fuselage during flight.

**DATES:** Effective May 15, 1997.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of May 15, 1997.

**ADDRESSES:** The service information referenced in this AD may be obtained from Airbus Industrie, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, 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:** Charles Huber, Aerospace Engineer, Standardization Branch, ANM-113, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (206) 227-2589; fax (206) 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 Airbus Model A320-111, -211, -212, and -231 series airplanes was published in the **Federal Register** on October 23, 1996 (61 FR 54960). That action proposed to require modification of the tail section of the airplane by reinforcement of the fuselage at frames 68 and 69.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

#### Support for the Proposal

One commenter supports the proposed AD.

#### Request to Extend the Compliance Time

One commenter requests that the compliance time for the modification be extended from the proposed 4 years to 6 years. This commenter points out that further analysis conducted by Airbus has indicated that additional fuselage frames, beyond those addressed by the proposal, may also be affected. Airbus has indicated that it will release a new Service Bulletin A320-53-1131, which will contain procedures that include modification of these additional frames. In anticipation of the imminent release of this service information, the commenter requests that the compliance time of the proposed AD be extended in

order to allow the rework of all affected areas to be performed at the same time.

The FAA concurs with the commenter's request to extend the compliance time. The FAA acknowledges that Airbus will soon release a new service bulletin to address other affected fuselage frames. In addition, the Direction Générale de l'Aviation Civile (DGAC), which is the airworthiness authority for France, has already issued French airworthiness directive (CN) 96-009-074(B)R1, which provides for a compliance time of 6 years for modification of the fuselage frames addressed in Airbus Service Bulletin A320-53-1110.

The FAA also acknowledges that, due to the magnitude of both the modification required by this AD action, as well as the modification of the additional frames that may be included in the new service bulletin, performing both modifications at the same time will decrease the chance for human error to occur and, thus, enhance safety.

Once the new service bulletin is released and reviewed, the FAA may consider additional rulemaking for accomplishment of the pertinent modifications identified in Airbus Service Bulletin A320-53-1131.

#### Conclusion

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

#### Cost Impact

The FAA estimates that 97 Airbus Model A320-111, -211, -212, and -231 series airplanes of U.S. registry will be affected by this AD, that it will take approximately 196 work hours per airplane to accomplish the required actions, and that the average labor rate is \$60 per work hour. Required parts will be provided by the manufacturer at no cost to operators. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be \$1,140,720, or \$11,760 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.

#### Regulatory Impact

The regulations adopted herein will not have substantial direct effects 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, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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:

**97-08-04 Airbus Industrie:** Amendment 39-9992. Docket 96-NM-93-AD.

*Applicability:* Model A320-111, -211, -212, and -231 series airplanes, as listed in Airbus Service Bulletin A320-53-1110, dated August 28, 1995; certificated in any category.

**Note 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the

owner/operator must request approval for an alternative method of compliance in accordance with paragraph (b) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required as indicated, unless accomplished previously.

To prevent structural damage to the tail section of the airplane when it strikes the runway which, if undetected, could result in depressurization of the fuselage during flight, accomplish the following:

(a) Within 6 years after the effective date of this AD, modify the fuselage by reinforcing frames 68 and 69 in accordance with Airbus Service Bulletin A320-53-1110, dated August 28, 1995.

(b) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Standardization Branch, ANM-113, FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Standardization Branch, ANM-113.

**Note 2:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Standardization Branch, ANM-113.

(c) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(d) The actions shall be done in accordance with Airbus Service Bulletin A320-53-1110, dated August 28, 1995. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Airbus Industrie, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(e) This amendment becomes effective on May 15, 1997.

Issued in Renton, Washington, on April 2, 1997.

**Darrell M. Pederson,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*  
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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 96-NM-239-AD; Amendment 39-9993; AD 97-08-05]

RIN 2120-AA64

#### Airworthiness Directives; Boeing Model 747-100, -200, and -300 Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 747-100, -200, and -300 series airplanes, that requires replacement of certain switches in the cabin attendant's panel at door 4 right and door 2 right with new improved switches. This amendment is prompted by reports indicating that fires have occurred on some airplanes due to the internal failure of some of these switches. The actions specified by this AD are intended to prevent the installation and use of switches that could short circuit when they fail, and consequently cause fire and smoke aboard the airplane.

**DATES:** Effective May 15, 1997.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of May 15, 1997.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. 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:** Forrest Keller, Senior Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington; telephone (206) 227-2790; fax (206) 227-1181.

**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 Boeing Model 747-100, -200, and -300 series airplanes was published in the **Federal Register** as a supplemental notice of

proposed rulemaking (NPRM) on January 21, 1997 (62 FR 2981). That action proposed to require removing switches S4 and/or S5, or switches S7 and S8, that are currently installed on the cabin attendant's panel at door 4 right, and the equivalent switches at door 2 right, and replacing them with new improved switches.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

#### Support for the Proposal

Two commenters support the proposed rule.

#### Request To Include a New Requirement for Doors 1 and 3

One commenter requests that the proposed replacement of the switches on the cabin attendant's panel also be accomplished at doors 1 and 3. The commenter states that doors 1 and 3 have the same switches that are subject to the addressed unsafe condition as the switches at doors 2 and 4.

The FAA acknowledges that the switches at doors 1 and 3 are prone to failure; however, at this time, the FAA has received no reports of fire and smoke at those locations. The FAA points out that adding a new requirement to the proposed AD would require public comment before adopting a final rule, hence a second supplemental NPRM. The FAA has considered the degree of urgency associated with addressing the identified unsafe condition at doors 2 and 4, and the amount of time that has already elapsed since issuance of the original proposed rule. In light of these items, the FAA has determined that further delay of this final rule action is not appropriate. However, the FAA is currently considering issuing a separate rulemaking action to address the identified unsafe condition at doors 1 and 3.

#### Request for an Alternative Method of Compliance

One commenter requests that the FAA revise paragraph (a) of the proposed rule to reference an alternative method of compliance for replacing the existing switches with new improved replacement switches. The commenter recommends suitable plug-in switches, in lieu of the soldered switches, as described in Boeing Alert Service Bulletin 747-33A2252, dated August 1, 1996 (which is referenced in the proposed AD as the appropriate source of service information). The commenter states that soldered switches add