

To prevent internal short circuits in the fuel control and electrical power control panels, which could result in burning of the panels and consequent smoke in the flight deck area, accomplish the following:

#### Replacement

(a) Within one year after the effective date of this AD: Replace the lighting plate of the fuel control panel with a new, improved plate, in accordance with Fokker Component Service Bulletin F7941-005-28-03, dated September 15, 1993.

(b) Within one year after the effective date of this AD: Replace the lighting plate of the electrical power control panel with a new, improved plate, in accordance with Fokker Component Service Bulletin F7941-011-24-11, dated September 15, 1993.

#### Spare Parts

(c) As of the effective date of this AD, no person shall install a lighting plate, P/N 95-1847-1, 95-1838-1, or 95-1838-3, on any airplane.

#### Alternative Methods of Compliance

(d) 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, International Branch, ANM-116, 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, International Branch, ANM-116.

**Note 2:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the International Branch, ANM-116.

#### Special Flight Permits

(e) 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.

#### Incorporation by Reference

(f) The actions shall be done in accordance with Fokker Component Service Bulletin F7941-005-28-03, dated September 15, 1993, and Fokker Component Service Bulletin F7941-011-24-11, dated September 15, 1993. 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 Fokker Services B.V., P.O. Box 231, 2150 AE Nieuw-Vennep, the Netherlands. 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.

**Note 3:** The subject of this AD is addressed in Dutch airworthiness directive 93-141 (A), dated November 1, 1993.

(g) This amendment becomes effective on December 6, 1999.

Issued in Renton, Washington, on November 5, 1999.

**D.L. Riggins,**

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

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 99-NM-47-AD; Amendment 39-11416; AD 99-23-20]

RIN 2120-AA64

#### Airworthiness Directives; Boeing Model 737-100, -200, -300, -400, and -500 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 737-100, -200, -300, -400, and -500 series airplanes. For certain airplanes, this AD requires installation of a transient suppression diode in the wiring circuit of the refueling valve-to-float switch of each fuel tank. For certain other airplanes, this AD requires replacement of the existing transient suppression diode with an improved diode. This AD also requires a functional test to verify proper installation of each diode, and corrective action, if necessary. This amendment is prompted by incidents of electrical fire during fueling of the airplane, due to a short circuit and overheating of a transient suppression diode. The actions specified by this AD are intended to prevent such conditions, which could result in electrical arcing and ignition of fuel vapors at the refueling receptacle for the fuel tanks, and consequent fire during airplane fueling.

**DATES:** Effective December 27, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of December 27, 1999.

**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:** Dorr Anderson, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2684; fax (425) 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 737-100, -200, -300, -400, and -500 series airplanes was published in the **Federal Register** on June 14, 1999 (64 FR 31762). That action proposed to require, for certain airplanes, installation of a transient suppression diode in the wiring circuit of the refueling valve-to-float switch of each fuel tank. For certain other airplanes, the proposal would require replacement of the existing transient suppression diode with an improved diode. The proposal also would require a functional test to verify proper installation of each diode, and corrective action, if necessary.

#### Comments

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

#### Request to Revise Cost Estimate

Two commenters request that the FAA revise the cost estimate and the number of hours required to complete the installation or replacement. One commenter states that the estimated material cost alone, based on Boeing's quoted price for the wire kit, is \$800. The other commenter states that the kit price is \$1,106. In addition, one commenter estimates that 12 work hours are required to modify an airplane while another commenter estimates that 16 work hours are required to complete the modification. One of the commenters indicates that additional time is required to gain access to the transient suppression diodes, close up the area, and perform functional testing.

The FAA partially concurs. The cost estimate for required parts has been increased to \$800 per airplane from \$50 per airplane, using the kit price that the commenter states is based upon Boeing's quoted price. The FAA work hour estimate has been increased to 12 work hours from 7 hours based upon information supplied by the commenters. However, the FAA is not

increasing the work hour estimate to account for functional testing since this has already been accounted for in the work hour estimate in the manufacturer's service bulletin. The final rule has been revised to incorporate the above changes in the cost estimate.

#### **Request to Extend Compliance Time**

Three commenters request that the compliance period be extended to 18 months from 12 months. Two commenters state that the circuit that includes the transient suppression diode is only powered on the ground during fueling and has no function in the air. One of the commenters also notes that the same circuit is affected by AD 99-05-12, which requires either deactivation of the circuit or installation of double teflon sleeving over the float switch wiring for the center fuel tank to prevent a possible short in the system. A third commenter notes that extending the compliance time to 18 months will allow for diode replacement at the same time as the replacement of the float switch wiring for the center fuel tank (per AD 99-05-12).

Another commenter indicates that extending the compliance period to 18 months will allow for installation or replacement (as applicable) during the next "C" check. In addition, this commenter states that the compliance time should be extended to account for the airplane manufacturer's estimate of a 300-day lead time for kits listed in the service bulletin.

The FAA does not concur with the commenters' request to extend the compliance time. The FAA agrees that the circuit which includes the transient suppression diode is powered only on the ground during fueling and has no function in the air. However, this fact does not nullify the safety hazard posed by overheating of the transient suppression diode. During the comment period for the proposed AD, an overheated transient suppression diode caused another fire during fueling. Although the fire was extinguished before extensive damage occurred, the FAA finds that this condition is a significant safety hazard.

With regard to the comment that installation of an improved transient suppression diode should be performed at the same time as modification of wiring for the center tank float switch in accordance with AD 99-05-12, the actions required by the two AD's are performed in different locations on the airplane and do not have a direct bearing on each other. Additionally, the compliance threshold for AD 99-05-12 is 30,000 flight hours. The FAA

estimates that there are more than 2,000 airplanes that currently have fewer than 30,000 flight hours, and operators of those airplanes are not required to modify the wiring of the center tank float switch in accordance with AD 99-05-12 until the airplanes have accumulated 30,000 flight hours. The FAA finds that extending the compliance threshold for this AD to 30,000 flight hours, to allow for installation of an improved transient suppression diode at the same time as modification of wiring for the center tank float switch, is inappropriate because it would not address the identified unsafe condition in a timely manner.

The FAA has determined that a 12-month compliance period, as proposed, is warranted. The manufacturer has advised that an ample number of required parts will be available for installation in the U.S. fleet within the compliance period. The manufacturer indicated that the 300-day-lead-time quote was a standard quote for this type of part. However, production schedules have been modified to support this AD. The improved transient suppression diodes are being produced at a rate of 1,500 per month to ensure availability within the 12-month compliance period. In developing an appropriate compliance time for this action, the FAA considered not only the degree of urgency associated with addressing the subject unsafe condition, but the availability of required parts and the practical aspect of installing the required modification within an interval of time that parallels normal scheduled maintenance for the majority of affected operators. No change to the final rule is necessary in this regard.

#### **Request to Develop a New Transient Suppression Diode**

One commenter requests that the FAA require the airplane manufacturer to develop a transient suppression diode with better mechanical protection from stresses to prevent possible overheating. The commenter states that the improved transient suppression diode is made of the same components as the existing diode, with essentially the same manufacturing process and the same mechanical protection (heat-shrunk plastic sleeving); only the arrangement of the wiring is different. The commenter states that the lack of significant changes to the design may result in more failures of the improved diodes (due to damage during installation) than if the existing diodes had been left in place.

The FAA does not concur. The manufacturer has made production

changes to eliminate the stress conditions which occurred in the existing diode design. Based upon the production changes, the FAA does not anticipate that variation in installation will lead to failures of the improved diode as the commenter suggests. The improved diodes have been used on other Boeing model airplanes. A review of the service history on the improved diodes on other Boeing model airplanes confirms that they do not have a history of failure in service. No change to the final rule is necessary in this regard.

#### **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 changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

#### **Cost Impact**

There are approximately 2,897 airplanes of the affected design in the worldwide fleet. The FAA estimates that 1,126 airplanes of U.S. registry will be affected by this AD.

For all airplanes, it would take approximately 12 work hours per airplane to accomplish the replacement or installation (as applicable) and the functional test to verify proper installation, at an average labor rate of \$60 per work hour. Required parts would cost approximately \$800 per airplane. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be \$1,711,520 or \$1,520 per airplane.

The cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the proposed 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:

**99-23-20 Boeing:** Amendment 39-11416. Docket 99-NM-47-AD.

**Applicability:** Model 737-100, -200, -300, -400, and -500 series airplanes; line numbers 1 through 3016 inclusive; certificated in any category.

**Note 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been 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 (e) 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 a short circuit and overheating of the transient suppression diode, which could result in electrical arcing and ignition of fuel vapors at the fueling receptacle for the fuel tanks, and consequent fire during airplane fueling, accomplish the following:

#### Corrective Action

(a) For Group 1 airplanes, as identified in Boeing Service Bulletin 737-28-1115, dated March 4, 1999: Within 12 months after the effective date of this AD, install a transient suppression diode, part number (P/N) 69-58806-4, in the wire bundle (W264) of the refueling valve-to-float switch of each fuel tank, in accordance with the service bulletin.

(b) For Groups 2, 3, and 4 airplanes, as identified in Boeing Service Bulletin 737-28-1115, dated March 4, 1999: Within 12 months after the effective date of this AD, replace the existing transient suppression diode, P/N 69-58806-1 or 69-58806-3, installed in the wire bundle (W264) of the refueling valve-to-float switch of each fuel tank, with an improved diode, P/N 69-58806-4, in accordance with the service bulletin.

(c) Prior to further flight following accomplishment of the actions required by paragraph (a) or (b) of this AD, perform a functional test to verify proper installation of each diode in accordance with Boeing Service Bulletin 737-28-1115, dated March 4, 1999. If any discrepancy is detected during any functional test, prior to further flight, replace the discrepant diode and repeat the functional test, in accordance with the service bulletin.

#### Spares Paragraph

(d) As of the effective date of this AD, no person shall install a transient suppression diode having P/N 69-58806-1 or 69-58806-3 on any airplane.

#### Alternative Methods of Compliance

(e) 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, Seattle Aircraft Certification Office (ACO), 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, Seattle ACO.

**Note 2:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

#### Special Flight Permits

(f) 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.

#### Incorporation by Reference

(g) The corrective actions shall be done in accordance with Boeing Service Bulletin 737-28-1115, dated March 4, 1999. 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 Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. 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.

(h) This amendment becomes effective on December 27, 1999.

Issued in Renton, Washington, on November 4, 1999.

**D.L. Riggin,**

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

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#### DEPARTMENT OF TRANSPORTATION

#### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 98-ANE-74-AD; Amendment 39-11425; AD 98-24-03 R1]

RIN 2120-AA64

#### Airworthiness Directives; BMW Rolls-Royce GmbH Models BR700-710A1-10 and BR700-710A2-20 Turbofan Engines

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

**ACTION:** Final rule; request for comments.

**SUMMARY:** This amendment revises an existing airworthiness directive (AD), applicable to BMW Rolls-Royce GmbH (BRR) Models BR700-710A1-10 and BR700-710A2-20 turbofan engines. The existing AD requires initial and repetitive visual inspections of the engine compressor and combustion core fairings (also referred to as the engine core fairings) and fasteners for correct installation and damage, and verification that the engine core fairing fasteners are torqued to a higher torque value. This amendment increases the repetitive inspection interval to 150 hours time-in-service (TIS) following an initial inspection and follow-on inspection at the current 50 hours TIS interval. This amendment also requires an initial inspection and follow-on inspection at a 50 hours TIS interval following any engine core fairing or fastener removal, repair, or replacement. Repair of engine core fairings has been added as an alternate to engine core fairing replacement, and an inspection for loose engine core fairing(s) has been included to verify correct installation on the engine. Finally, this amendment adds a new paragraph in the compliance section allowing the option to incorporate redesigned core engine fairings as the terminating action to the required repetitive inspections. This amendment is prompted by results of repetitive inspections that indicate that the inspection interval can be increased safely, and by introduction of redesigned engine core fairings. The