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[Page 34820-34822]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000-NM-414-AD; Amendment 39-12748; AD 2002-10-02]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 757 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 757 series airplanes, that requires installation of an extender bracket for the compensator of the Simmonds fuel quantity indication system (FQIS) in the main fuel tanks. This action is necessary to prevent contact between the compensator for the Simmonds FQIS system and a flapper check valve on a baffle rib in the main fuel tanks, which–in conjunction with another wiring failure outside the fuel tank–could result in an electrical arc and a consequent potential source of ignition in the fuel tank. This action is intended to address the identified unsafe condition.

DATES: Effective June 20, 2002.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 20, 2002.

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: John Vann, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-1024; 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 757 series airplanes was published in the Federal Register on October 24, 2001 (66 FR 53743). That action proposed to require installation of an extender bracket for the compensator of the Simmonds fuel quantity indication system (FQIS) in the main fuel tanks.

Explanation of New Relevant Service Information

Since the issuance of the proposed AD, the FAA has reviewed and approved Boeing Service Bulletins 757-28-0057 and 757-28-0059, both Revision 1, both dated February 28, 2002. (The proposed AD refers to Boeing Special Attention Service Bulletins 757-28-0057 and 757-28-0059, both dated September 14, 2000, as the appropriate sources of service information for the proposed actions.) We find that the changes incorporated in Revision 1 of the service bulletins are not substantive, meaning that airplanes modified per the original issue of the service bulletins are not subject to any additional work under Revision 1 of the service bulletins. Therefore, the FAA has revised paragraph (a) of this final rule to refer to Revision 1 of the service bulletins as the appropriate sources of service information for the actions in that paragraph. In addition, we have added a new Note 2 (and reordered subsequent notes accordingly) to give credit for installations accomplished before the effective date of this AD according to the original issue of the service bulletins. Also, because no additional airplanes were included in the effectivity listing of the revised service bulletins, and for the convenience of operators, we have revised the applicability statement of this final rule to refer to airplanes listed in Revision 1 of the service bulletins.

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 Extend the Compliance Time

One commenter, an operator, asks us to extend the compliance time for the proposed AD from 24 to 48 months. The commenter notes that the proposed actions necessitate defueling, purging, and opening the wing fuel tanks. Such actions are classified as heavy maintenance and, thus, would normally only be performed during a heavy maintenance visit (e.g., a heavy "C"-check). The commenter notes that the interval for such a check for its fleet is approximately 48 months. This commenter believes that allowing the proposed actions to be accomplished at a normal heavy maintenance visit would not significantly decrease the level of safety, and notes that allowing such a schedule would enable operators to avoid significant out-of-service time and labor costs.

The FAA concurs with the commenter's request. We note that extending the compliance time to 48 months results in a longer compliance time than allowed in other ADs related to possible ignition in the fuel tank. However, our decision is based on the fact that a condition in which the compensator of the Simmonds FQIS is exposed to fuel vapors, the flapper valve is in contact with the compensator, and a wiring failure occurs outside the fuel tank, is expected to be rare. The compensator is only exposed to flammable vapors when the quantity of fuel is low, and the flapper valve would have to be lifted open significantly to come into contact with the compensator. Furthermore, we recognize that there are safety benefits to limiting the number of entries into the fuel tank, and the longer compliance time may allow operators to combine the required modification with other fuel tank maintenance. Therefore, we find that increasing the compliance time for this AD from 24 months to 48 months does not significantly decrease the level of safety. We have revised paragraph (a) of this final rule accordingly.

Request To Reduce Compliance Time

One commenter asks us to reduce the compliance time for the requirements of the proposed AD from 24 months to 12 months or less. The commenter notes that the proposed AD identifies an electrical arc associated with an external wiring fault as the only potential source of ignition. However, the commenter would like it to be noted that a lightning-induced transient on the fuel compensator wiring may represent another source of ignition. The commenter states that current data show the probability of a lightning strike on an aircraft as one strike per aircraft per year. The commenter's suggestion to reduce the compliance time for the proposed AD is based on this probability.

We do not concur to reduce the compliance time. While we agree that lightning strikes can induce a transient on the fuel compensator wiring, a lightning strike on its own is unlikely to be a potential source of ignition in the fuel tank. For a lightning strike to be a threat, two additional conditions must be present. First, as noted previously, the compensator for the Simmonds FQIS, which is normally covered by fuel, would have to be exposed to fuel vapor; this could only occur at a low-fuel state. Second, there would have to be electrical contact between the Simmonds FQIS and the flapper valve referred to in the referenced service bulletins. We find that the possibility of a lightning strike as a potential source of ignition is not a significant possibility, due to the other conditions that would have to be present along with the lightning strike. Therefore, we find no change to the final rule is necessary in this regard.

Request To Increase Minimum Clearance

One commenter asks us to increase the minimum clearance between the compensator for the Simmonds FQIS and fuel tank structure from 0.10 inch, as specified in the referenced service bulletins, to 0.25 inch. The commenter states that clearance of 0.25 inch would account for the "sloshing" of fuel in the tank. The commenter notes that its findings indicate that, should the compensator be moved 0.25 inch due to such "sloshing," and if the flapper check valve is fully extended, contact between these two components could occur. The commenter also notes that it has inspected three airplanes in its fleet for such contact between the compensator and flapper check valve and has found no evidence of such contact.

We do not concur to increase the minimum clearance. We find that 0.10 inch of clearance, as specified in the referenced service bulletins, is adequate to avoid contact between the compensator and flapper check valve, even accounting for the "sloshing" of fuel in the fuel tank. We note that any "sloshing" of fuel that would push the compensator in the direction of the flapper check valve would drive the flapper check valve to the closed position. No change to the final rule is necessary in this regard.

Request To Require Inspection for Damage of Compensator and Valve

One commenter asks us to add a requirement to the proposed AD to inspect the compensator and flapper check valve for damage. The commenter advises that the added requirements should include damage limits and provide a technical source for accomplishment of any necessary corrective action.

We do not concur. The commenter provides no technical data to support its request. We find that accomplishment of the actions required by this AD will prevent contact between the compensator and the flapper check valve and remove the potential arcing path inside the left and right main fuel tanks. We note that normal maintenance practices include removing the compensator and flapper check valve and replacing them with new parts if any damage is found. No change to the final rule is necessary in this regard.

Request To Increase Cost Impact

One commenter asks us to increase the estimated cost impact stated in the proposed AD. Whereas, in the proposed AD, the FAA estimates that the proposed actions will take 5 work hours, the commenter indicates that the proposed actions will take 12 work hours. The commenter notes that a second person is required for safety reasons any time work is accomplished in the fuel tank.

We do not concur to increase the estimated cost impact. The estimate that 5 work hours will be needed to complete the required actions is based on the best data available to date, as provided to the FAA by the airplane manufacturer. We note that this cost estimate is consistent with the manpower estimate in the referenced service bulletin, which states that 1.25 work hours per person (4 persons total) is necessary to do the bracket installation. 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 938 Model 757 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 607 airplanes of U.S. registry will be affected by this AD, that it will take approximately 5 work hours per airplane to accomplish the required installation (not including time for gaining access and closing up), and that the average labor rate is $60 per work hour. Required parts will cost approximately $404 per airplane. Based on these figures, the cost impact of this AD on U.S. operators is estimated to be $427,328, or $704 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.

Sec. 39.13 [Amended]

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

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.airweb.faa.gov/rgl"

2002-10-02 Boeing: Amendment 39-12748. Docket 2000-NM-414-AD.

Applicability: Model 757 series airplanes listed in Boeing Service Bulletin 757-28-0057 or 757-28-0059, both Revision 1, both dated February 28, 2002, 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 (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 contact between the compensator for the Simmonds fuel quantity indication system (FQIS) and a flapper check valve on a baffle rib in the main fuel tanks, which–in conjunction with another wiring failure outside the fuel tank–could result in an electrical arc and a consequent potential source of ignition in the fuel tank, accomplish the following:

Installation of Brackets

(a) Within 48 months after the effective date of this AD, install an extender bracket for the compensator of the Simmonds FQIS in the left and right main fuel tanks (including ensuring minimum clearance between the compensators, wiring, and components, and the fuel tank structure, and testing the electrical bond in the fuel tank), according to the Accomplishment Instructions of Boeing Service Bulletin 757-28-0057 or 757-28-0059, both Revision 1, both dated February 28, 2002, as applicable.

Note 2: Installations of extender brackets accomplished before the effective date of this AD according to Boeing Special Attention Service Bulletin 757-28-0057 or 757-28-0059, both dated September 14, 2000, as applicable, are acceptable for compliance with paragraph (a) of this AD.

Alternative Methods of Compliance

(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, Seattle Aircraft Certification Office (ACO), FAA. 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 3: 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

(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.

Incorporation by Reference

(d) The actions shall be done in accordance with Boeing Service Bulletin 757-28-0057, Revision 1, dated February 28, 2002; or Boeing Service Bulletin 757-28-0059, Revision 1, dated February 28, 2002; as applicable. 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.

Effective Date

(e) This amendment becomes effective on June 20, 2002.

Issued in Renton, Washington, on May 8, 2002.
Vi L. Lipski,
Manager, Transport Airplane Directorate, Aircraft Certification Service.
[FR Doc. 02-12065 Filed 5-15-02; 8:45 am]
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