

Boeing 747 Series Aeroplanes

AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/B747/193 and issues the following AD under subregulation 39.1 (1) of CAR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

AD/B747/193
Amdt 1

Fuel Leaks

12/2000

Applicability: Model 747 series aeroplanes, with line number 1 through 1006 inclusive and certificated in any category.

- Requirement:**
1. For aeroplanes with line number 629 through 1006 inclusive and powered by General Electric or Rolls Royce engines; perform a one-time inspection to determine the part number of the fuel shutoff spar valve installed for the left- and right-hand outboard engines in accordance with Boeing Alert Service Bulletin 747-28A2199 dated August 1, 1996; Boeing Service Bulletin 747-28A2199, Revision 1, dated October 1, 1998; or Boeing Service Bulletin 747-28A2199, Revision 2, dated July 8, 1999.
 - (a) If a valve having part number (P/N) S343T003-40 (ITT P/N 125334D-1) is installed, no further action is required by this AD.
 - (b) If a valve P/N S343T003-40 (ITT P/N 125334D-1) is not installed then either:
 - (i) replace the valve in accordance with the requirements of the service bulletin, or
 - (ii) modify the valve in accordance with the requirements of the service bulletin.
 2. For aeroplanes with line number 629 through 1006 inclusive and powered by General Electric or Rolls Royce engines: Except as provided for in requirement 3, below, perform a one-time general visual inspection to detect fuel leaks of the components between the fuel shutoff spar valve and the engine fuel shutoff valve on all four engines, in accordance with the applicable section of Chapter 71 of the Boeing 747 Airplane Maintenance Manual (AMM) that pertains to the engines fitted to the aeroplane, or Boeing Service Bulletin 747-28A2199, Revision 2, dated July 8, 1999. If any leak is detected, replace the part with a serviceable part. No further action is required by this AD.

3. For aeroplanes with line number 629 through 1006 inclusive and powered by General Electric or Rolls Royce engines, and having maintenance records that positively demonstrate that the inboard engines have never been located in the outboard position, perform a one-time general visual inspection to detect fuel leaks of the components between the fuel shutoff spar valve and the engine fuel shutoff valve on the outboard engines only, in accordance with the applicable section of Chapter 71 of the Boeing 747 Airplane Maintenance Manual (AMM) that pertains to the engines fitted to the aeroplane, or Boeing Service Bulletin 747-28A2199, Revision 2, dated July 8 1999. If any leak is detected, replace the part with a serviceable part. No further action is required by this AD.
4. For aeroplanes with line number 1 through 628 inclusive, irrespective of engine type fitted; perform a one-time inspection of the maintenance records of the aeroplane to determine if the fuel shutoff spar valve for the left- and right-hand outboard engines has ever been replaced, in accordance with Boeing Service Bulletin 747-28A2199, Revision 2, dated July 8, 1999.
 - (a) If the maintenance record inspection establishes that neither valve has been replaced, no further action is required by this AD.
 - (b) If either valve has been replaced, or if the maintenance record inspection does not clearly establish that neither valve has been replaced, accomplish paragraph 5(a), 5(b), or 5(c), as applicable.
5. For aeroplanes with line number 629 through 1006 inclusive and powered by Pratt and Whitney engines, or for aeroplanes having line number 1 through 628 inclusive on which a fuel shutoff spar valve has been, or may have been, replaced; perform a one-time inspection to determine the part number of the fuel shutoff spar valve for the left-and right-hand outboard engines, as applicable, in accordance with Boeing Alert Service Bulletin 747-28A2199, dated August 1, 1996; Boeing Service Bulletin 747-28A2199, Revision 1, dated October 1, 1998; or Boeing Service Bulletin 747-28A2199, Revision 2, dated July 8, 1999.
 - (a) If a valve having P/N S343T003-40 (ITT P/N 125334D-1) is installed, no further action is required by this AD.
 - (b) If a valve having P/N 60B92406-161 (ITT P/N 125334-1), P/N 60B92406-81 (ITT P/N 125120-1), or P/N 60B92406-201 (ITT P/N 107970-1) is installed, accomplish either paragraph 6. or 7. of this AD, as applicable.

- (c) If a valve having P/N S343T003-40 (ITT P/N 125334D-1), P/N 60B92406-161 (ITT P/N 125334-1), P/N 60B92406-81 (ITT P/N 125120-1), or P/N 60B92406-201 (ITT P/N 107970-1) is not installed, accomplish either paragraph 5.(c)(i) or 5.(c)(ii), and either paragraph 6. or 7. of this AD, as applicable.
- (i) Replace the valve with a new valve in accordance with the requirements of the service bulletin, or
- (ii) Modify the valve body assembly of the fuel system in accordance with the service bulletin.
6. Except as provided in paragraph 7. of this AD, perform a one-time general visual inspection to detect fuel leaks of the components between the fuel shutoff spar valve and the engine fuel shutoff valve on all four engines, in accordance with Boeing Service Bulletin 747-28A2199, Revision 2, dated July 8, 1999. If any leak is detected, replace the part with a serviceable part.
7. For aeroplanes having maintenance records that positively demonstrate that the inboard engines have never been located in the outboard positions; perform a one-time general visual inspection to detect fuel leaks of the components between the fuel shutoff spar valve on the outboard engines only, in accordance with Boeing Service Bulletin 747-28A2199, Revision 2, dated July 8, 1999. If any leak is detected, replace the part with a serviceable part.

Note 1: For the purposes of this AD, a general visual inspection is defined as : “ A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made under normally available lighting conditions such as daylight, hanger lighting, flashlight, or droplight, and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked.”

Note2: Accomplishment of the actions specified in AMM 71-00-00/501, Test No.2, “ Fuel and Oil Leak Check, “ for Rolls Royce RB211 series engines, and AMM 71-00-00/501, Test No. 3 “Ground Test - Idle Leak Check (or Idle Power)”, for General Electric CF6-80C and CF6-43/50 series engines, is acceptable for compliance with the actions specified by paragraphs 2 and 3 of this AD.

Note3: FAA airworthiness directives AD 98-21-29 amendment 39-10837 and 2000-14-06 amendment 39-11815 refer.

- Compliance:
1. Within 18 months of 28 January 1999 (unchanged).
 1. (b). Before further flight after accomplishment of Requirement 1.
 2. Before further flight after accomplishment of requirement 1(b).
 3. Before further flight after accomplishment of requirement 1(b).
 4. Within 18 months of the effective date of this amended Directive.
 4. (b). Before further flight after accomplishment of requirement 4.
 5. Within 18 months of the effective date of this amended Directive.
 5. (b). Before further flight after accomplishment of requirement 5.
 5. (c). Before further flight after accomplishment of requirement 5.
 6. Before further flight after accomplishment of requirement 5.
 7. Before further flight after accomplishment of requirement 5.

This amendment becomes effective on 30 November 2000.

Background: Reports indicate that, due to high fuel pressure, certain fuel components of the outboard engines have failed on in-service aircraft. This Directive introduces measures to prevent such high fuel pressure which could lead to the failure of the fuel system components and the possibility of an engine fire.

Amendment 1 has been issued to include additional aeroplanes to the AD applicability, the requirements and compliance periods for the additional aeroplanes and to reference FAA airworthiness directive 2000-14-06 amendment 39-11815. Aeroplanes in compliance with the original issue of the AD are not affected by this AD amendment.

The original issue of this airworthiness directive became effective on 28 January 1999.



Eugene Paul Holzapfel
Delegate of the Civil Aviation Safety Authority

24 October 2000