
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.1 (1) of CASR 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.

Boeing 747 Series Aeroplanes

AD/B747/316

**Prevention of Mineral Deposits on
Fire Shutoff Switches**

13/2004

Applicability: Model 747SP, 747-200B, -200C, -200F, -300, -400, -400D and -400F series aeroplanes listed in Boeing Alert Service Bulletin (ASB) 747-26A2274, Revision 1, dated 9 January 2003.

- Requirement:**
1. Perform a functional test of the auxiliary power unit (APU) and engine fire shutoff switches, in accordance with ASB 747-26A2274 Revision 1.
 2. If any fire shutoff switch fails during any functional test required by Requirements 1 or 5.a., replace the switch with a new or serviceable switch, in accordance with the ASB 747-26A2274 Revision 1.
 3. Replace all APU and engine fire shutoff switches that have not been previously replaced per Requirement 2 with new or serviceable switches, in accordance with ASB 747-26A2274 Revision 1.
 4. If Lucas flight deck humidifier part number part number (P/N) M01AA0101, M01AB0101, M01AB0102 or M01AB0103 is optionally deactivated, replace all APU and engine fire shutoff switches with new or serviceable switches in accordance with ASB 747-26A2274 Revision 1.
 5. If Lucas humidifier, P/N M01AA0101, M01AB0101, M01AB0102 or M01AB0103 is reactivated after the effective date of this Directive carry out the following:
 - a. Action in accordance with Requirement 1.
 - b. Action in accordance with Requirement 3.

Actions accomplished before the effective date of this Directive per Boeing Alert Service Bulletin 747-26A2274, dated 29 August 2002, are considered acceptable for compliance with the corresponding action specified in this Directive.

Note: FAA AD 2004-20-16 Amdt 39-13821 refers.

Boeing 747 Series Aeroplanes

AD/B747/316 (continued)

Compliance: For Requirement 1 - At the later of the compliance times specified below and thereafter at intervals not to exceed 18 months unless Lucas humidifiers P/N M01AA0101, M01AB0101, M01AB0102 or M01AB0103 is optionally deactivated:

- a. Within 18 months after the original issue of a Certificate of Airworthiness, or
- b. Within 90 days after the effective date of this Directive.

For Requirement 2 - Before further flight and thereafter at intervals not to exceed 36 months unless Lucas humidifier P/N M01AA0101, M01AB0101, M01AB0102 or M01AB0103 is optionally deactivated.

For Requirement 3 - Within 36 months after the effective date of this Directive and thereafter at intervals not to exceed 36 months unless Lucas humidifier P/N M01AA0101, M01AB0101, M01AB0102 or M01AB0103 is optionally deactivated.

For Requirement 4 - Before further flight immediately after the deactivation.

For Requirement 5.a. - Within 18 months after reactivating the humidifier and thereafter at intervals not to exceed 18 months.

For Requirement 5.b. - Within 36 months after reactivating the humidifier and thereafter at intervals not to exceed 36 months.

This Airworthiness Directive becomes effective on 23 December 2004.

Background: Boeing advised that during routine maintenance checks some engine fire control circuits were found to be faulty due to switch internal continuity failures. The humidified air being provided by the LUCAS Humidifier was identified as the source of mineral build up on APU and engine fire control switch contacts leading to failure of the switches to discharge fire suppressant in the affected area. This could result in an uncontrolled fire that could spread to the strut, wing, or aft body of the aeroplane.

This action is intended to address the identified unsafe condition by preventing the possibility of mineral build-up on the APU and engine fire shutoff switches.



James Coyne
Delegate of the Civil Aviation Safety Authority

11 November 2004