

---

**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 39.001(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/B747/359****Flight Deck Humidifier****9/2007**

Applicability: Boeing Model 747-400 series aeroplanes as identified in Boeing Service Bulletin 747-21A2414, Revision 3, dated 12 May 2006.

Requirement: 1. For Model 747-400 series aeroplanes identified as Group 1 in Boeing Service Bulletin 747-21A2414, Revision 3:

- (a) Do the replacement specified in Requirement 1(b) or 1(c) of this AD. For flight deck humidifiers with a blanking plate: If the blanking plate is removed and a new or supplier-tested cell stack is installed, the replacement must be done in accordance with the Accomplishment Instructions of Hamilton Sundstrand Service Bulletins 821486-21-01, dated 15 March 2000; and after the replacement, the flight deck humidifier may be activated in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-21-2405, Revision 4, dated 29 July 1999.

*Note 1: Boeing Service Bulletin 747-21A2414, Revision 3, specifies Group 1 as "all 747-400 aeroplanes with Hamilton Sundstrand flight deck humidifier 821486-01." The correct part number (P/N) for the humidifier is 821486-1.*

- (b) Replace the cell stack of the flight deck humidifier with a supplier-tested cell stack, in accordance with Part 1 of the Accomplishment Instructions of Boeing Service Bulletin 747-21A2414, Revision 3.
- (c) Replace the cell stack of the flight deck humidifier with a blanking plate and, before further flight, deactivate the flight deck humidifier, in accordance with Part 2 of the Accomplishment Instructions of Boeing Service Bulletin 747-21A2414, Revision 3.

*Note 2: Boeing Service Bulletin 747-21A2414 Revision 3 refers to Boeing Service Bulletin 747-21-2405 Revision 4, as an additional source of service information for deactivating the humidifier.*

*Note 3: Boeing Service Bulletin 747-21A2414 Revision 3 refers to Hamilton Sundstrand Service Bulletin 821486-21-01, as an additional source of service information for the cell stack replacements.*

## Boeing 747 Series Aeroplanes

AD/B747/359 (continued)

Replacement of the cell stack before the effective date of this AD in accordance with Boeing Alert Service Bulletin 747- 21A2414, dated April 13, 2000; Revision 1, dated October 26, 2000; or Revision 2, dated July 7, 2005; is acceptable for compliance with the corresponding action specified in Requirement 1 of this AD.

2. For Model 747-400 series aeroplanes identified as Groups 2 and 3 in Boeing Service Bulletin 747-21A2414, Revision 3: Inspect the flight deck humidifier to determine whether P/N 821486-1 is installed, in accordance with Part 3 of the Accomplishment Instructions of Boeing Service Bulletin 747-21A2414, Revision 3. Instead of inspecting the flight deck humidifier, a review of aeroplane maintenance records along with any other applicable data is acceptable if the P/N of the flight deck humidifier can be positively determined from that review or if it can be positively determined that the flight deck humidifier is not installed on the aeroplane.
  - (a) If a P/N other than P/N 821486-1 is installed or if the flight deck humidifier is not installed, no further action is required by this Requirement.
  - (b) If P/N 821486-1 is installed, inspect the flight deck humidifier cell stack to determine whether P/N 821482-1 is installed and "DEV 13433" is not marked next to the cell stack P/N, in accordance with Part 3 of the Accomplishment Instructions of the service bulletin. Instead of inspecting the flight deck humidifier cell stack, a review of aeroplane maintenance records is acceptable if the P/N, including whether "DEV 13433" is marked next to the P/ N, of the flight deck humidifier cell stack can be positively determined from that review.
    - (i) If the cell stack has P/N 821482-2 or 1003111-2, or if "DEV 13433" is marked next to P/N 821482-1, no further action is required by this Requirement.
    - (ii) If the cell stack has P/N 821482-1 and does not have "DEV 13433" marked next to the cell stack P/N: Before further flight, do the replacement specified in Requirement 1 of this AD.

Inspections accomplished before the effective date of this AD in accordance with Boeing Alert Service Bulletin 747-21A2414, Revision 2, dated 7 July 2005, are considered acceptable for compliance with the corresponding action specified in Requirement 2 of this AD.

3. Do not install a flight deck humidifier cell stack having P/N 821482-1, unless "DEV 13433" is also marked next to the cell stack P/N.

*Note 4: FAA AD 2006-21-05 dated 6 October 2006 refers.*

## Boeing 747 Series Aeroplanes

AD/B747/359 (continued)

Compliance: For Requirement 1 and 2:

Within 90 days after the effective date of this AD, unless previously accomplished.

For Requirement 3:

From the effective date of this AD.

This Airworthiness Directive becomes effective on 30 August 2007.

Background: The requirements detailed in this AD are intended to prevent an increased pressure drop across the humidifier and consequent reduced airflow to the flight deck, which could result in the inability to clear any smoke that might appear in the flight deck.



David Punshon  
Delegate of the Civil Aviation Safety Authority

26 June 2007