

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2005-22252; Directorate Identifier 2005-NM-182-AD; Amendment 39-14260; AD 2005-18-51]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Boeing Model 777 Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

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

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**SUMMARY:** This document publishes in the Federal Register an amendment adopting airworthiness directive (AD) 2005-18-51 that was sent previously to all known U.S. owners and operators of Boeing Model 777 airplanes by individual notices. This AD supersedes an existing AD that applies to certain Boeing Model 777-200 and "300 series airplanes. The existing AD currently requires modification of the operational program software (OPS) of the air data inertial reference unit (ADIRU). This new AD requires installing a certain OPS in the ADIRU, and revising the airplane flight manual to provide the flightcrew with operating instructions for possible ADIRU heading errors and for potential incorrect display of drift angle. This AD results from a recent report of a significant nose-up pitch event. We are issuing this AD to prevent the OPS from using data from faulted (failed) sensors, which could result in anomalies of the fly-by-wire primary flight control, autopilot, auto-throttle, pilot display, and auto-brake systems. These anomalies could result in high pilot workload, deviation from the intended flight path, and possible loss of control of the airplane.

**DATES:** This AD becomes effective September 14, 2005 to all persons except those persons to whom it was made immediately effective by emergency AD 2005-18-51, issued August 29, 2005, which contained the requirements of this amendment.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of September 14, 2005.

We must receive comments on this AD by November 8, 2005.

**ADDRESSES:** Use one of the following addresses to submit comments on this AD.

- DOT Docket Web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.

- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, room PL-401, Washington, DC 20590.
- Fax: (202) 493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for service information identified in this AD.

**FOR FURTHER INFORMATION CONTACT:** Paul Feider, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6467; fax (425) 917-6590.

## **SUPPLEMENTARY INFORMATION:**

### **Background**

On April 29, 2005, we issued AD 2005-10-03, amendment 39-14080 (70 FR 24703, May 11, 2005), for certain Boeing Model 777-200 and "300 series airplanes. That AD requires modification of the operational program software (OPS) of the air data inertial reference unit (ADIRU) from software version part number (P/N) 3470-HNC-100-03 to software version P/N 3475-HNC-100-06 or 3474-HNC-100-07. That AD resulted from a report of the display of erroneous heading information to the pilot due to a defect in the OPS of the ADIRU. We issued that AD to prevent the display of erroneous heading information to the pilot, which could result in loss of the main sources of attitude data, consequent high pilot workload, and subsequent deviation from the intended flight path.

### **Actions Since Issuance of Previous AD**

On August 29, 2005, we issued emergency AD 2005-18-51, which applies to all Boeing Model 777 airplanes. That AD resulted from a recent report of a significant nose-up pitch event on a Boeing Model 777-200 series airplane while climbing through 36,000 feet altitude. The flightcrew disconnected the autopilot and stabilized the airplane, during which time the airplane climbed above 41,000 feet, decelerated to a minimum speed of 158 knots, and activated the stick shaker. A review of the flight data recorder shows there were abrupt and persistent errors in the outputs of the ADIRU. These errors were caused by the OPS using data from faulted (failed) sensors. This problem exists in all software versions after P/N 3470-HNC-100-03, beginning with P/N 3477-HNC-100-04 approved in 1998 and including the versions mandated by AD 2005-10-03. While these versions have been installed on many airplanes before we issued AD 2005-10-03, they had not caused an incident until recently, and the problem was therefore unknown until then. OPS using data from faulted sensors, if not corrected, could result in anomalies of the fly-by-wire primary flight control, autopilot, auto-throttle, pilot display, and auto-brake systems, which could result in high pilot workload, deviation from the intended flight path, and possible loss of control of the airplane.

### **Relevant Service Information**

We have reviewed Boeing Alert Service Bulletin 777-34A0137, dated August 26, 2005. The service bulletin describes procedures for installing OPS, P/N 3470-HNC-100-03, in the ADIRU.

We also have reviewed Boeing 777 Operations Manual Bulletin (OMB) CS3-3093, dated August 26, 2005, which describes operating instructions to inform the flightcrew of possible heading errors following on-ground automatic realignment of the ADIRU with the OPS, P/N 3470-HNC-100-03, installed.

In addition, we have reviewed Boeing 777 OMB CS3-3155, dated August 26, 2005, which describes operating instructions to inform the flightcrew of potential drift angle discrepancies on the primary flight display and the navigation display with the OPS, P/N 3470-HNC-100-03, installed.

### **FAA's Determination and Requirements of This AD**

Since the unsafe conditions described previously are likely to exist or develop on other airplanes of the same type design, we issued emergency AD 2005-18-51 to supersede AD 2005-10-03. This new AD requires accomplishing the actions specified in Boeing Alert Service Bulletin 777-34A0137, described previously. Because these actions reintroduce the unsafe condition identified in AD 2005-10-03, this new AD also requires revising the Limitation section of the Airplane Flight Manual by inserting a copy of Boeing 777 OMBs CS3-3093 and CS3-3155, described previously.

### **Interim Action**

We consider this AD interim action. The manufacturer is currently developing a modification that will address the unsafe condition identified in this AD and AD 2005-10-03. Once this modification is developed, approved, and available, we may consider additional rulemaking

### **FAA's Determination of the Effective Date**

We found that immediate corrective action was required; therefore, notice and opportunity for prior public comment thereon were impracticable and contrary to the public interest, and good cause existed to make the AD effective immediately by individual notices issued on August 29, 2005, to all known U.S. owners and operators of Boeing Model 777 airplanes. These conditions still exist, and the AD is hereby published in the Federal Register as an amendment to § 39.13 of the Federal Aviation Regulations (14 CFR 39.13) to make it effective to all persons.

### **Comments Invited**

This AD is a final rule that involves requirements that affect flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any relevant written data, views, or arguments regarding this AD. Send your comments to an address listed in the ADDRESSES section. Include "Docket No. FAA-2005-22252; Directorate Identifier 2005-NM-182-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD. We will consider all comments received by the closing date and may amend the AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of our docket web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You can review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78), or you can visit <http://dms.dot.gov>.

### **Examining the Dockets**

You may examine the AD docket on the Internet at <http://dms.dot.gov>, or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza

level of the Nassif Building at the DOT street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after the Docket Management System receives them.

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in subtitle VII, part A, subpart III, section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD 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.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If this emergency regulation is later deemed significant under DOT Regulatory Policies and Procedures, we will prepare a final regulatory evaluation and place it in the AD Docket. See the ADDRESSES section for a location to examine the regulatory evaluation, if filed.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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. The Federal Aviation Administration (FAA) amends § 39.13 by removing amendment 39-14080 (70 FR 24703, May 11, 2005) and adding the following new airworthiness directive (AD):

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

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

*We post ADs on the internet at [www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**AD 2005-18-51 Boeing:** Amendment 39-14260. Docket No. FAA-2005-22252; Directorate Identifier 2005-NM-182-AD.

## Effective Date

(a) This AD becomes effective September 14, 2005, to all persons except those persons to whom it was made immediately effective by emergency AD 2005-18-51, issued on August 29, 2005, which contained the requirements of this amendment.

## Affected ADs

(b) This AD supersedes AD 2005-10-03.

## Applicability

(c) This AD applies to all Boeing Model 777-200, -300, and -300ER series airplanes, certificated in any category.

## Unsafe Condition

(d) This AD results from a recent report of a significant nose-up pitch event. We are issuing this AD to prevent the operational program software (OPS) from using data from faulted (failed) sensors, which could result in anomalies of the fly-by-wire primary flight control, autopilot, auto-throttle, pilot display, and auto-brake systems. These anomalies could result in high pilot workload, deviation from the intended flight path, and possible loss of control of the airplane.

## Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

## Installation of OPS

(f) Within 72 hours after the effective date of this AD, do the actions specified in paragraphs (f)(1) and (f)(2) of this AD.

(1) Install OPS, part number (P/N) 3470-HNC-100-03, in the air data inertial reference unit (ADIRU), in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-34A0137, dated August 26, 2005.

(2) Revise the Limitations section of the Airplane Flight Manual (AFM) by inserting a copy of the Boeing operations manual bulletins in Table 1 of this AD.

**TABLE 1.—OPERATIONS MANUAL BULLETINS**

<b>Boeing 777 operations manual bulletin</b>	<b>Date</b>
(i) CS3–3093	August 26, 2005.
(ii) CS3–3155	August 26, 2005.

(g) When the information in the operations manual bulletins in Table 1 of this AD has been incorporated into the general revisions of the AFM, the general revisions may be incorporated into the AFM, and these operations manual bulletins may be removed from the AFM.

### **Parts Installation**

(h) As of the effective date of this AD, only OPS, P/N 3470-HNC-100-03, may be loaded into the ADIRU.

### **Alternative Methods of Compliance (AMOCs)**

(i) The Manager, Seattle Aircraft Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

### **Related Information**

(j) None.

### **Material Incorporated by Reference**

(k) You must use the service information in Table 2 of this AD to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of these documents in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for a copy of this service information. You may review copies at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, call (202) 741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

**TABLE 2.—MATERIAL INCORPORATED BY REFERENCE**

<b>Service information</b>	<b>Date</b>
Boeing Alert Service Bulletin 777–34A0137	August 26, 2005.
Boeing 777 Operations Manual Bulletin CS3–3093	August 26, 2005.
Boeing 777 Operations Manual Bulletin CS3–3155	August 26, 2005.

Issued in Renton, Washington, on September 1, 2005.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 05-17762 Filed 9-8-05; 8:45 am]

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