



## 適航指令發布單

### Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2018-05-005	發布日期 Date issued	2018/5/17
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	The Boeing Company Model 747-200B, 747-300, and 747-400 series airplanes, certificated in any category, as identified in Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017.		
主旨摘要	To prevent electrical current from passing through the low-pressure oxygen flex-hoses in the gaseous passenger oxygen system, which can cause the flex-hoses to melt or burn, and a consequent oxygen fed fire in the passenger cabin.		
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	設計國民航主管機構 Original Authorities <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> FAA  <input type="checkbox"/> EASA  <input type="checkbox"/> Brazil  <input type="checkbox"/> Transport Canada Civil Aviation  <input type="checkbox"/> DGAC             </div> <div style="width: 50%;"> <input type="checkbox"/> Germany LBA  <input type="checkbox"/> CAA-NL  <input type="checkbox"/> UK CAA  <input type="checkbox"/> Japan CAB  <input type="checkbox"/> CAA of Israel  <input type="checkbox"/> Other _____             </div> </div>		
	設計國 AD 編號 Original AD number	2018-09-12	
	1. 直接採用原 AD 之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) _ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ 2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)		
備註 Note	Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017.		
註： 1. AD 內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： <a href="mailto:adcaa@mail.caa.gov.tw">adcaa@mail.caa.gov.tw</a> Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： <a href="mailto:adcaa@mail.caa.gov.tw">adcaa@mail.caa.gov.tw</a>			

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2018-0362; Product Identifier 2018-NM-020-AD; Amendment 39-19269; AD 2018-09-12]**

**RIN 2120-AA64**

### **Airworthiness Directives; The Boeing Company Airplanes**

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

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

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 747-200B, 747-300, and 747-400 series airplanes. This AD requires replacing certain low-pressure oxygen flex-hoses with new non-conductive low-pressure oxygen flex-hoses in the gaseous passenger oxygen system in airplanes equipped with therapeutic oxygen. This AD also requires a general visual inspection of the low-pressure passenger oxygen system to ensure there is minimum clearance of the oxygen system components from adjacent structure and systems. This AD was prompted by reports of low-pressure flex-hoses of the flightcrew oxygen system that burned through due to inadvertent electrical current from a short circuit. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective May 30, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of May 30, 2018.

We must receive comments on this AD by June 29, 2018.

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0362.

### **Examining the AD Docket**

You may examine the AD docket on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0362; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Susan L. Monroe, Aerospace Engineer, Cabin Safety and Environmental Systems Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3570; email: [susan.l.monroe@faa.gov](mailto:susan.l.monroe@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Discussion**

This AD was prompted by reports of low-pressure oxygen flex-hoses in the continuously pressurized flightcrew oxygen system that burned through due to inadvertent electrical current from a short circuit. Conductive oxygen hoses in the flight deck were addressed previously in AD 2010-16-05, Amendment 39-16382 (75 FR 47208, August 5, 2010) (“AD 2010-16-05”).

The gaseous passenger oxygen system equipped with therapeutic oxygen is not continuously pressurized and must be activated by the flightcrew. Exposure to electrical faults, such as unintended short circuits, can result in localized electrical heating of the low-pressure oxygen flex-hoses. This condition, if not corrected, could result in electrical current passing through the low-pressure oxygen flex-hoses, which can cause flex-hoses to melt or burn, and a consequent oxygen-fed fire in the passenger cabin.

#### **Other Relevant Rulemaking**

We issued AD 2010-16-05 for certain The Boeing Company Model 747 airplanes. AD 2010-16-05 was prompted by reports of low-pressure flex-hoses of the flightcrew oxygen system that burned through due to inadvertent electrical current from a short circuit in the audio select panel. AD 2010-16-05 requires inspecting to verify the part number of the low-pressure flex-hoses of the flightcrew oxygen system installed under the oxygen mask stowage boxes in the flight deck, and replacing the flex-hose with a new non-conductive low-pressure flex-hose if necessary. We issued AD 2010-16-05 to prevent inadvertent electrical current, which can cause the low-pressure flex-hoses of the flightcrew oxygen system to melt or burn, causing oxygen system leakage and smoke or fire.

#### **Related Service Information Under 1 CFR Part 51**

We reviewed Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017. The service information describes procedures for replacing certain low-pressure oxygen flex-hose assemblies with non-conductive flex-hose assemblies at multiple locations and a general visual

inspection to ensure the oxygen system components have minimum clearance from adjacent structure and systems. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **AD Requirements**

This AD requires accomplishment of the actions identified as “RC” (required for compliance) in the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017, described previously, except as discussed under “Differences Between this AD and the Service Information,” and except for any differences identified as exceptions in the regulatory text of this AD.

For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0362.

### **Differences Between This AD and the Service Information**

Where the Condition column of Table 3 in paragraph 1.E., “Compliance,” of Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017, specifies “all airplanes,” for this AD, the Condition column of Table 3 is “airplanes on which one or more hose assemblies were replaced or disconnected.” As specified in step 3.B.12 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017, the oxygen system low-pressure leak test and applicable corrective actions are only accomplished if one or more hose assemblies were replaced or disconnected.

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

There are currently no domestic operators of this product. Therefore, we find that notice and opportunity for prior public comment are unnecessary and that good cause exists for making this amendment effective in less than 30 days.

### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment. However, we invite you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA-2018-0362 and Product Identifier 2018-NM-020-AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this final rule. We will consider all comments received by the closing date and may amend this final rule because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this final rule.

## Costs of Compliance

Currently, there are no affected U.S.-registered airplanes. If an affected airplane is imported and placed on the U.S. Register in the future, we provide the following cost estimates to comply with this AD:

Estimated Costs			
Action	Labor cost	Parts cost	Cost per product
Inspection and Replacement	Up to 22 work-hours × \$85 per hour = \$1,870	Up to \$4,535	Up to \$6,405.

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this AD.

## 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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

## Regulatory Findings

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.

For the reasons discussed above, I certify that this AD:

- (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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

## 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 FAA amends § 39.13 by adding the following new airworthiness directive (AD):



**FAA**  
**Aviation Safety**

## **AIRWORTHINESS DIRECTIVE**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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**2018-09-12 The Boeing Company:** Amendment 39-19269; Docket No. FAA-2018-0362; Product Identifier 2018-NM-020-AD.

**(a) Effective Date**

This AD is effective May 30, 2018.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to The Boeing Company Model 747-200B, 747-300, and 747-400 series airplanes, certificated in any category, as identified in Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017.

**(d) Subject**

Air Transport Association (ATA) of America Code 35, Oxygen.

**(e) Unsafe Condition**

This AD was prompted by reports of low-pressure flex-hoses of the flightcrew oxygen system that burned through due to inadvertent electrical current from a short circuit. We are issuing this AD to prevent electrical current from passing through the low-pressure oxygen flex-hoses in the gaseous passenger oxygen system, which can cause the flex-hoses to melt or burn, and a consequent oxygen-fed fire in the passenger cabin.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

Except as required by paragraph (h) of this AD: At the applicable times specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017, do all applicable actions identified as "RC" (required for compliance) in, and in accordance with, the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017.

## **(h) Exception to Service Information Specifications**

(1) For purposes of determining compliance with the requirements of this AD: Where Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017, uses the phrase “the original issue date of this service bulletin,” this AD requires using “the effective date of this AD.”

(2) Where Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017, specifies contacting Boeing, and specifies that action as RC: This AD requires repair using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(3) Where the Condition column of Table 3 in paragraph 1.E., “Compliance,” of Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017, specifies “all airplanes,” for this AD, the Condition column of Table 3 is “airplanes on which one or more hose assemblies were replaced or disconnected.”

## **(i) Parts Installation Prohibition**

As of the effective date of this AD, no person may install, on any airplane, the hose assembly part numbers identified as “Removed hose assembly part numbers” in Table 3, “Hose Assembly Replacement,” of Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017, in the locations for hose assembly installation as identified in Figures 1 through 14 of Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017.

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

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) Except as required by paragraph (h)(2) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (j)(4)(i) and (j)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.



## **(k) Related Information**

For more information about this AD, contact Susan L. Monroe, Aerospace Engineer, Cabin Safety and Environmental Systems Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3570; email: susan.l.monroe@faa.gov.

## **(l) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Special Attention Service Bulletin 747-35-2134, dated November 22, 2017.

(ii) Reserved.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Des Moines, Washington, on April 27, 2018.

Michael Kaszycki,  
Acting Director, System Oversight Division,  
Aircraft Certification Service.