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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2006-24983; Directorate Identifier 2005-NM-196-AD; Amendment 39-15068; AD 2007-11-11]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Airbus Model A318, A319, A320, and A321 Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is superseding an existing airworthiness directive (AD), which applies to all Airbus Model A318, A319, A320, and A321 airplanes. That AD currently requires a one-time inspection to determine the serial number of both main landing gear (MLG) sliding tubes, repetitive detailed inspections for cracking of the affected MLG sliding tubes, and corrective actions if necessary. This new AD retains these inspections and adds new repetitive inspections for cracking of the MLG sliding tubes. This AD also requires eventual replacement of both MLG shock absorbers. Doing this replacement terminates the repetitive inspection requirements of this AD. This AD results from a determination that additional inspections and mandatory replacement of the MLG shock absorbers are necessary. We are issuing this AD to detect and correct cracking in an MLG sliding tube, which could result in failure of the sliding tube, loss of one axle, and consequent reduced controllability of the airplane.

**DATES:** This AD becomes effective June 29, 2007.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of June 29, 2007.

On June 23, 2004, (69 FR 31867, June 8, 2004), the Director of the Federal Register approved the incorporation by reference of Airbus All Operators Telex A320-32A1273, Revision 01, dated May 6, 2004.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC.

Contact Airbus, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France, for service information identified in this AD.

**FOR FURTHER INFORMATION CONTACT:** Tim Dulin, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2141; fax (425) 227-1149.

## **SUPPLEMENTARY INFORMATION:**

### **Examining the Docket**

You may examine the airworthiness directive (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 street address stated in the ADDRESSES section.

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 2004-11-13, amendment 39-13659 (69 FR 31867, June 8, 2004). The existing AD applies to all Airbus Model A318, A319, A320, and A321 airplanes. That NPRM was published in the Federal Register on June 12, 2006 (71 FR 33658). That NPRM proposed to retain the inspections required by the existing AD and add new repetitive inspections for cracking of the MLG sliding tubes. That NPRM also proposed to require eventual replacement of both MLG shock absorbers, which would terminate the repetitive inspection requirements proposed by that NPRM.

### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comments that have been received on the NPRM.

### **Support for the NPRM**

Airbus concurs with the contents of the NPRM.

### **Request To Retain Inspection in Existing AD**

The Air Transport Association (ATA) on behalf of its members United Airlines (UAL), Northwest Airlines (NWA), and U.S. Airways (USAir), requests that we retain the 10-day inspection required by AD 2004-11-13. The commenters state that they consider the current 10-day visual inspection to be the most effective and appropriate inspection method to check and recheck in-service parts for a crack, because that inspection emulates the process which identified the first and only crack found on the transition area of the main landing gear (MLG) sliding tube after an overweight/heavy landing.

We agree with the commenters that the visual inspection is currently the most effective method of detecting cracks in the high stress transition area. As the 10-day visual inspection required by AD 2004-11-13 is retained in this AD, it is not necessary to change the AD in this regard.

## **Request To Change Magnetic Particle Inspection (MPI) Interval**

The same commenters request that we change the interval for repeating the MPI from intervals not to exceed 1200 flight cycles to intervals not to exceed 2500 flight cycles or the gear overhaul cycle. NWA asserts that an MPI is most effective when applied in a shop environment, as the MPI could yield false readings that require removing the protective coating from the MLG sliding tube and re-inspecting to prove that no crack exists. NWA asserts that the effort to locally remove the protective coating could lead to damage of the MLG sliding tube and introduce a further unsafe condition. NWA recommends that the MPI remain at an overhaul interval schedule instead of the in situ interval proposed by the NPRM. UAL asks that we change the MPI repetitive interval to 2,500 flight cycles or a less intrusive interval that corresponds with a heavy maintenance check, and that we change the MPI inspection area to the high stress area. NWA notes that, according to Airbus, the 1,200 flight cycle MPI interval is based on the highest stress areas, which are specifically excluded from the MPI inspection areas and are subject only to the detailed visual inspection. NWA further notes that, according to Airbus, the remaining axle stresses are not significant enough for a crack to reach critical size within one overhaul interval of 10 years or 20,000 flight cycles, and that utilizing a safety factor of 3 yields the required interval of 6,666 flight cycles.

We partially agree. We have determined that an MPI interval that corresponds with a gear overhaul interval of 10 years or 20,000 flight cycles would not provide an adequate level of safety. Further, the highest stress areas described by NWA have highly contoured geometries that cannot be reliably inspected with MPIs. However, we agree that the MPI and applicable corrective actions should be performed during scheduled heavy maintenance when these actions could be done properly. Therefore, we have revised the repetitive interval in paragraph (h) of the AD to read “not to exceed 2,500 flight cycles or 21 months, whichever occurs earlier.”

## **Request for Alternative Terminating Action**

The same commenters request that we consider other methods of terminating action. UAL asserts that the acoustic resonance inspection system (ARIS) and phased array eddy current methods of non-destructive testing are able to detect subsurface flaws in complex geometries and, therefore, offer much more precise test results than the MPI. UAL states that the ARIS, which uses an electromagnetic acoustic transducer (EMAT), exploits the unique physical properties of ultrasonic resonance to produce constant sound waves of controllable depth and length that change only if an anomaly is scanned in the material under test. UAL also asserts that the phased array eddy current method, developed by Iowa State University with FAA funding, has proved effective in inspections for cracking of MLG cylinders required by AD 2005-19-08, amendment 39-14273, which is applicable to DC-9 series airplanes.

We disagree. The commenters have not provided any data to demonstrate that these two methods will conclusively and positively identify subsurface flaws. Further, Airbus has investigated and determined that these two inspection methods would not reliably demonstrate the presence of any subsurface flaws. Therefore, we have not changed the AD in this regard. However, any operator may request an alternative method of compliance (AMOC) in accordance with the procedures in paragraph (m) of the AD, provided that sufficient data are submitted to substantiate that the proposed AMOC would provide an acceptable level of safety.

## **Request To Withdraw MPI and Mandatory Shock Absorber Replacement**

The same commenters request that the mandatory terminating action be removed from the NPRM. UAL accepts the requirement for the initial and repetitive detailed inspections, but asserts that the risk of MLG failure is so small that the expense of the MPI inspection and the mandatory shock absorber replacement is not justified. The commenters note that, in 2003, Airbus determined that the frequency of occurrence of the subject failure was one event in 1.33 billion component hours; and that, since then, the fleet has continued to operate with no incidents of MLG failure. Further, UAL notes that the root cause of the event was determined to be a manufacturing process condition that could be random within the volume of the part and asserts, therefore, that volumetric analysis would be more appropriate. Finally, UAL notes that, although the MPI increases the chances of identifying the surface indication of a crack, the areas to be inspected are not in the transitional area of the MLG sliding tube where the initial crack occurred. NWA asserts that the MPI is unable to detect subsurface flaws or inspect complex geometrical contours and might not be able to detect the most critical flaws, which could give a false sense of security. The commenters request, therefore, that the requirements for the MPI and mandatory shock absorber replacement be removed.

We do not agree. As the probability of manufacturing flaws can not be precisely determined and an MLG collapse at high speed could be catastrophic, the absence of a completely reliable method of finding subsurface flaws requires that we use the best methods currently available to detect surface cracks until the affected MLG shock absorbers are replaced. As such, the MPI provides additional capability to detect surface cracks and, therefore, supplements the detailed inspections. We have not changed the AD in this regard.

## **Request To Make Terminating Action Optional**

The same commenters request that, if not removed, the terminating action be made optional. UAL asserts that operators should have the choice to continue repeating the required inspections indefinitely or to replace the affected MLG sliding tubes. UAL contends that Airbus and Messier-Dowty have not justified that sufficient need exists to require replacing the MLG sliding tubes by a certain date.

We do not agree. According to FAA policy, design changes should be implemented to remove the source of a problem, rather than relying on inspections to ensure the problem does not occur, especially when the results could be catastrophic and the inspection is difficult, as in this case. We have not changed the AD in this regard.

## **Clarification of AMM**

To prevent confusion, we have revised paragraph (i) of the AD to clarify that the Airbus A318/A319/A320/A321 aircraft maintenance manual, chapter 32-11-13, page block 401, describes one approved method of removing and replacing the MLG shock absorbers.

## **Conclusion**

We have carefully reviewed the available data, including the comments that have been received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that this change will neither increase the economic burden on any operator nor increase the scope of the AD.

## Costs of Compliance

This AD affects about 720 airplanes of U.S. registry. The following table provides the estimated costs for U.S. operators to comply with this AD at an estimated labor rate of \$80 per work hour. Operators should note that, although all U.S.-registered airplanes are subject to the requirements of the existing AD, there are only 297 possible affected MLG sliding tubes in the worldwide fleet. We have no way of knowing how many affected MLG sliding tubes, if any, are installed in U.S.-registered airplanes. Therefore, the estimated costs to perform the new requirements of this AD apply only to individual sliding tubes; no fleet cost can be determined for these actions.

### Estimated Costs to Perform Requirements of Existing AD 2004-11-13

Action	Work Hours	Parts	Cost Per Airplane	Fleet cost
General visual inspection to determine serial number	1	None	\$80	\$57,600

### Estimated Costs to Perform New Requirements of This AD

Action	Work Hours	Parts	Cost per Sliding Tube
Detailed inspection	1	None	\$80, per inspection cycle
Detailed inspection and magnetic particle inspection	9	None	\$720, per inspection cycle
Replacement of sliding tube	8	\$38,278 to \$45,310	\$39,918 to \$45,950

## 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.

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); and

(3) 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

### **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 39-13659 (69 FR 31867, June 8, 2004) and adding the following new airworthiness directive (AD):



**2007-11-11 Airbus:** Amendment 39-15068. Docket No. FAA-2006-24983; Directorate Identifier 2005-NM-196-AD.

### **Effective Date**

(a) This AD becomes effective June 29, 2007.

### **Affected ADs**

(b) This AD supersedes AD 2004-11-13.

### **Applicability**

(c) This AD applies to all Airbus Model A318, A319, A320, and A321 airplanes, certificated in any category.

### **Unsafe Condition**

(d) This AD results from a determination that additional inspections and mandatory replacement of the main landing gear (MLG) shock absorbers are necessary. We are issuing this AD to detect and correct cracking in an MLG sliding tube, which could result in failure of the sliding tube, loss of one axle, and consequent reduced controllability 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.

### **Service Information References**

(f) The term "service information," as used in this AD, means Airbus All Operators Telex (AOT) A320-32A1273, Revision 01, dated May 6, 2004; or the Accomplishment Instructions of Airbus Service Bulletin A320-32A1273, Revision 02, including Appendix 01, dated May 26, 2005. After the effective date of this AD, only Airbus Service Bulletin A320-32A1273, Revision 02, may be used.

Note 1: Airbus AOT A320-32A1273, Revision 01, and Airbus Service Bulletin A320-32A1273, Revision 02, refer to Messier-Dowty Service Bulletin 201-32-43, Revision 1, dated May 1, 2005; and Messier-Dowty Service Bulletin 200-32-286, Revision 1, dated March 1, 2005, as additional sources of service information for accomplishing the detailed inspections and magnetic particle inspections (MPI).

## **Restatement of Certain Requirements of AD 2004-11-13**

### **Serial Number (S/N) Identification**

(g) For all airplanes: Within 30 days after June 23, 2004 (the effective date of AD 2004-11-13), do a one-time general visual inspection to determine the S/N of both MLG sliding tubes, in accordance with the service information. Instead of inspecting the MLG sliding tubes, reviewing the airplane maintenance records is acceptable if the S/N of the MLG sliding tubes can be positively determined from that review.

(1) If the S/N of the MLG sliding tube is not listed in the service information: No further action is required by this paragraph for that sliding tube.

(2) If the S/N of the MLG sliding tube is listed in the service information: Do the actions in paragraph (g)(2)(i) or (g)(2)(ii) of this AD, as applicable.

(i) For any MLG not inspected before June 23, 2004: Before further flight, do a detailed inspection of the MLG for cracking in accordance with the service information.

(A) If no cracking is found in any MLG sliding tube: Repeat the detailed inspection thereafter at intervals not to exceed 10 days, until the MLG replacement specified by paragraph (g)(2)(i)(B), (h), or (i) of this AD has been accomplished.

(B) If any cracking is found in any MLG sliding tube: Before further flight replace the part with a new or serviceable part in accordance with a method approved by either the FAA or the Direction Generale de l'Aviation Civile (DGAC) (or its delegated agent). Chapter 32 of the Airbus A318/A319/A320/A321 Aircraft Maintenance Manual (AMM) is one approved method. Installing an MLG sliding tube having an S/N that is not listed in the service information terminates the repetitive inspections required by paragraph (h) of this AD for that MLG sliding tube only.

(ii) For any MLG that has been inspected before June 23, 2004: Within 10 days after that inspection, do the detailed inspection required by paragraph (g)(2)(i) of this AD.

### **New Requirements of This AD**

#### **Detailed Inspection and Magnetic Particle Inspection (MPI)**

(h) For any airplane equipped with any MLG having a sliding tube installed that is identified with a S/N listed in the service information: Within 500 flight cycles after the effective date of this AD, perform a detailed inspection and an MPI of the MLG sliding tube for cracking in accordance with the service information. Repeat these inspections thereafter at intervals not to exceed 2,500 flight cycles or 21 months, whichever occurs earlier, until paragraph (i) of this AD has been accomplished. If any cracking is discovered during any inspection required by this paragraph, before further flight, replace the cracked sliding tube with a new or serviceable sliding tube in accordance with the service information. Replacing the MLG sliding tube with a sliding tube having a S/N not listed in the service information terminates the repetitive inspection requirements of this paragraph and paragraph (g)(2)(i)(A) of this AD for that sliding tube only.

#### **Terminating Action**

(i) Within 41 months after the effective date of this AD, replace all MLG shock absorbers equipped with sliding tubes having S/Ns listed in the service information with new or serviceable MLG shock absorbers equipped with sliding tubes having S/Ns not listed in the service information, using a method approved by either the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the DGAC (or its delegated agent). Airbus A318/A319/A320/A321 AMM 32-11-13, page block 401, is one approved method. Replacing the MLG shock absorbers in accordance with this paragraph terminates all repetitive inspections required by this AD.

## **Submission of Cracked Parts Not Required**

(j) The service information has instructions to send any cracked part to Messier-Dowty. This AD does not include such a requirement.

## **Reporting Requirement**

(k) Prepare a report of any crack found during any inspection required by paragraph (g) or (h) of this AD. Submit the report to Airbus Customer Services, Engineering and Technical Support, Attention: M.Y. Quimiou, SEE33, fax +33+ (0) 5.6193.32.73, at the applicable time specified in paragraph (k)(1) or (k)(2) of this AD. The report must include the MLG sliding tube P/N and S/N, date of inspection, a description of any cracking found, the airplane serial number, and the number of flight cycles on the MLG at the time of inspection. Under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.), the Office of Management and Budget (OMB) has approved the information collection requirements contained in this AD and has assigned OMB Control Number 2120-0056.

(1) For any inspection done after June 23, 2004, but before the effective date of this AD: Within 30 days after the inspection or 30 days after the effective date of this AD, whichever comes first.

(2) For any inspection done after the effective date of this AD: Within 30 days after the inspection.

## **Parts Installation**

(l) As of the effective date of this AD, no person may install, on any airplane, any sliding tube, or MLG shock absorber having a sliding tube installed, if the sliding tube has a S/N identified in the service information, unless the sliding tube has been inspected, and any applicable corrective actions have been done, in accordance with paragraph (g)(2)(i), (h), or (i) of this AD.

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

(m)(1) The Manager, International Branch, ANM-116, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

(2) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

## **Related Information**

(n) French airworthiness directive F-2005-115, dated July 6, 2005, also addresses the subject of this AD.

## **Material Incorporated by Reference**

(o) You must use Airbus All Operators Telex A320-32A1273, Revision 01, dated May 6, 2004, and Airbus Service Bulletin A320-32A1273, Revision 02, including Appendix 01, dated May 26, 2005; as applicable; to perform the actions that are required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of Airbus Service Bulletin A320-32A1273, Revision 02, including Appendix 01, dated May 26, 2005, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) On June 23, 2004 (69 FR 31867, June 8, 2004), the Director of the Federal Register approved the incorporation by reference of Airbus All Operators Telex A320-32A1273, Revision 01, dated May 6, 2004.

(3) Contact Airbus, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France, for a copy of this service information. You may review copies at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or 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 Renton, Washington, on May 15, 2007.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E7-10025 Filed 5-24-07; 8:45 am]