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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-20439; Directorate Identifier 2005-CE-04-AD; Amendment 39-14102; AD 2005-10-24]

RIN 2120-AA64

Airworthiness Directives; AeroSpace Technologies of Australia Pty Ltd. Models N22B, N22S, and N24A Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA adopts a new airworthiness directive (AD) to supersede AD 2003-14-20, which applies to all AeroSpace Technologies of Australia Pty Ltd. (ASTA) Models N22B and N24A airplanes. AD 2003-14-20 requires you to repetitively inspect, using either dye penetrant or magnetic particle methods, the rudder control lever shafts for cracks; inspect (one-time) all lever shaft side plates by measuring the thickness; and if cracks or discrepancies in thickness are found, replace unserviceable parts with new or serviceable parts. Since AD 2003-14-20 was issued, we determined that the AD should also affect Model N22S airplanes. The manufacturer has also revised the service information to include a rudder control lever shaft part number (P/N) that was not part of AD 2003-14-20. Consequently, this AD retains the actions of AD 2003-14-20, adds Model N22S airplanes to the applicability, and adds rudder control lever shaft P/N 1/N-45-1102 to the inspection requirements. We are issuing this AD to detect and correct cracks in the rudder control lever torque shafts and discrepancies in the thickness of the lever shaft side plates, which could result in failure of the rudder control lever torque shaft. Such failure could lead to reduced controllability of the airplane.

DATES: This AD becomes effective on June 30, 2005.

As of June 30, 2005, the Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulation.

ADDRESSES: To get the service information identified in this AD, contact Nomad Operations, Aerospace Support Division, Boeing Australia, PO Box 767, Brisbane, QLD 4001 Australia; telephone 61 7 3306 3366; facsimile 61 7 3306 3111.

To view the AD docket, go to the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-001 or on the Internet at <http://dms.dot.gov>. The docket number is FAA-2005-20439; Directorate Identifier 2005-CE-04-AD.

FOR FURTHER INFORMATION CONTACT: Doug Rudolph, Aerospace Engineer, Small Airplane Directorate, ACE-112, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4059; facsimile: (816) 329-4090.

SUPPLEMENTARY INFORMATION:

Discussion

What events have caused this AD? Reports of cracking and other discrepancies on rudder control lever shaft assemblies on certain ASTA Models N22B and N24A airplanes caused us to issue AD 82-12-06, Amendment 39-4399. AD 82-12-06 required the following:

- Repetitively inspecting visually all rudder control lever shafts for cracking;
- If cracks are found, replacing with new or serviceable rudder control shafts;
- Checking for clearance of the fit of all rod end bearings in lever shafts; and
- Discontinuing the repetitive visual inspections when lever shafts are inspected either by magnetic particle inspection or dye penetrant methods

The Civil Aviation Safety Authority (CASA), which is the airworthiness authority for Australia notified FAA of the need to change AD 82-12-06. The CASA reported failures of the rudder control lever shaft. All the failures occurred during ground operations. Nosewheel steering/rudder loads are considered the primary cause of the failures.

Some of the failures occurred on airplanes where the terminating action of AD 82-12-06 had been incorporated. This caused us to issue AD 2003-14-20, Amendment 39-13239 (68 FR 42954, July 21, 2003).

AD 2003-14-20 currently requires the following on all ASTA Model N22B and N24A airplanes:

- Repetitively inspecting, using either dye penetrant or magnetic particle methods and measurements, certain rudder control lever shafts, part numbers (P/N) 2/N-45-1102, 1/N-45-1103, and 1/N-45-1104 (or FAA-approved equivalent part numbers), for cracks;
- Inspecting (one-time) all lever shaft side plates by measuring the thickness; and
- If cracks or discrepancies in thickness are found, replacing unserviceable parts with new or serviceable parts.

What has happened since AD 2003-14-20 to initiate this action? Since AD 2003-14-20 was issued, we determined that Model N22S airplanes should be included in the applicability.

The manufacturer has also revised the service information to include a rudder control lever shaft P/N that was not part of AD 2003-14-20.

What is the potential impact if FAA took no action? This condition, if not detected and corrected, could result in failure of the rudder control lever torque shaft. Such failure could lead to reduced controllability of the airplane.

Has FAA taken any action to this point? We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to all ASTA Model N22B, N22S, and N24A airplanes. This proposal was published in the Federal Register as a notice of

proposed rulemaking (NPRM) on March 16, 2005 (70 FR 12819). The NPRM proposed to supersede AD 2003-14-20 with a new AD that would retain the actions of AD 2003-14-20, add Model N22S airplanes to the applicability, and add rudder control lever shaft P/N 1/N-45-1102 to the inspection requirements.

Comments

Was the public invited to comment? We provided the public the opportunity to participate in developing this AD. We received no comments on the proposal or on the determination of the cost to the public.

Conclusion

What is FAA's final determination on this issue? We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed except for minor editorial corrections. We have determined that these minor corrections:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Changes to 14 CFR Part 39—Effect on the AD

How does the revision to 14 CFR part 39 affect this AD? On July 10, 2002, the FAA published a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's AD system. This regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. This material previously was included in each individual AD. Since this material is included in 14 CFR part 39, we will not include it in future AD actions.

Costs of Compliance

How many airplanes does this AD impact? We estimate that this AD affects 15 airplanes in the U.S. registry.

What is the cost impact of this AD on owners/operators of the affected airplanes? We estimate the following costs to do the initial inspection:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
12 workhours × \$65 per hour = \$780	Not Applicable	\$780	15 × \$780 = \$11,700.

We estimate the following costs to do the necessary repetitive inspections:

Labor cost	Parts cost	Total cost per airplane
2 workhours × \$65 per hour = \$130	Not Applicable	\$130.

We estimate the following costs to do any rudder control lever shaft replacement that will be required based on the results of the inspections. We have no way of determining the number of airplanes that may need such replacement:

Labor cost	Parts cost	Total cost per airplane
12 workhours × \$65 per hour = \$780	\$930	\$780 + \$930 = \$1710.

We estimate the following costs to do any lever shaft side plate replacements that will be required based on the results of the inspection. We have no way of determining the number of airplanes that may need such replacement:

Labor cost	Parts cost	Total cost per airplane
12 workhours × \$65 per hour = \$780	\$930	\$780 + \$930 = \$1710.

What is the difference between the cost impact of this AD and the cost impact of AD 2003-14-20? The only difference between AD 2003-14-20 and this AD is the addition of Model N22S airplanes to the applicability section. There are no additional actions required in this AD.

Authority for This Rulemaking

What authority does FAA have for issuing this rulemaking action? 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 AD.

Regulatory Findings

Will this AD impact various entities? 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.

Will this AD involve a significant rule or regulatory action? 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 the 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 summary of the costs to comply with this AD (and other information as included in the Regulatory Evaluation) and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include "Docket No. FAA-2005-20439; Directorate Identifier 2005-CE-04-AD" in your request.

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 Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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 removing Airworthiness Directive (AD) 2003-14-20, Amendment 39-13239 (68 FR 42954, July 21, 2003), and by adding a new AD to read as follows:

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"

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).

2005-10-24 Aerospace Technologies of Australia Pty Ltd.: Amendment 39-14102; Docket No. FAA-2005-20439; Directorate Identifier 2005-CE-04-AD; Supersedes AD 2003-14-20, Amendment 39-13239.

When Does This AD Become Effective?

- (a) This AD becomes effective on June 30, 2005.

What Other ADs Are Affected By This Action?

- (b) This AD supersedes AD 2003-14-20, Amendment 39-13239.

What Airplanes Are Affected By This AD?

- (c) This AD affects Models N22B, N22S, and N24A airplanes, all serial numbers, that are certificated in any category.

What Is The Unsafe Condition Presented in This AD?

- (d) This AD is the result of continuing airworthiness information (MCAI) issued by the airworthiness authority for Australia. The actions specified in this AD are intended to detect and correct cracks in the rudder control lever torque shafts and discrepancies in the thickness of the lever shaft side plates, which could result in failure of the rudder control lever torque shaft. Such failure could lead to reduced controllability of the airplane.

What Must I Do To Address This Problem?

- (e) To address this problem, you must do the following:

Actions	Compliance	Procedures
<p>(1) Inspect the following:</p> <p>(i) The rudder control lever shafts, part numbers (P/N) 1/N-45-1102, 2/N-45-1102, 1/N-45-1103, and 1/N-45-1104 (or FAA-approved equivalent part numbers) for cracks. Use dye penetrant inspection while the shaft is installed. Use either dye penetrant or magnetic particle inspection if the shaft is removed; and</p> <p>(ii) All lever shaft side plates on P/Ns 1/N-45-1102, 2/N-45-1102, 1/N-45-1103, and 1/N-45-1104 (or FAA-approved equivalent part numbers) by measuring the thickness for discrepancies.</p>	<p>Initially inspect within the next 50 hours time-in-service (TIS) or 30 days after June 30, 2005 (the effective date of this AD), whichever occurs first, unless already done.</p>	<p>Following Nomad Alert Service Bulletin ANMD-27-51, Rev. 2, dated April 29, 2004, and the applicable maintenance manual.</p>
<p>(2) If no cracks are found in the rudder control lever shafts during the inspection required in paragraph (e)(1)(i) of this AD, repetitively inspect rudder control lever shafts P/Ns 1/N-45-1102, 2/N-45-1102, 1/N-45-1103, and 1/N-45-1104 (or FAA-approved equivalent part numbers) for cracks.</p>	<p>Repetitively inspect thereafter at intervals not to exceed 300 hours TIS after the initial inspection required in paragraph (e)(1) of this AD.</p>	<p>Following Nomad—Series N22 & N24 Inspection Requirements Manual, Temporary Revision 26, Fatigue Critical Areas, dated May 27, 2004.</p>
<p>(3) If cracks or discrepancies are found during any inspection required by this AD, do the following:</p> <p>(i) For rudder control lever shafts found with crack damage, replace with new or serviceable parts. After replacement, continue with the repetitive inspections required in paragraph (e)(2) of this AD.</p> <p>(ii) If the thickness of the lever shaft side plates is less than 0.050 inches, replace the lever shaft side plate with a new plate that measures at least 0.050 inches in thickness.</p>	<p>Before further flight after any inspection required by this AD in which cracks or discrepancies are found.</p>	<p>Following Nomad Alert Service Bulletin ANMD-27-51, Rev. 2, dated April 29, 2004, and the applicable maintenance manual.</p>
<p>(4) If at any time certain operating conditions occur that caused abnormal rudder pedal loads, inspect the rudder control lever shafts as specified in paragraph (e)(2) of this AD. Examples of such conditions are: heavy use of nosewheel steering over rough ground; excessive steering angle under tow; towing with rudder gust lock fitted; engine failure on takeoff; and aircraft left parked outside with rudder gust lock not fitted.</p>	<p>Before further flight.</p>	<p>Following Nomad—Series N22 & N24 Inspection Requirements Manual, Temporary Revision 26, Fatigue Critical Areas, dated May 27, 2004.</p>
<p>(5) Do not install a new lever shaft side plate that is less than 0.050 inches in thickness.</p>	<p>As of June 30, 2005 (the effective date of this AD).</p>	<p>As specified in Nomad Alert Service Bulletin ANMD-27-51, Rev. 2, dated April 29, 2004; and Nomad—Series N22 & N24 Inspection Requirements Manual, Temporary Revision 26, Fatigue Critical Areas, dated May 27, 2004.</p>

May I Request an Alternative Method of Compliance?

(f) You may request a different method of compliance or a different compliance time for this AD by following the procedures in 14 CFR 39.19.

(1) Unless FAA authorizes otherwise, send your request to your principal inspector. The principal inspector may add comments and will send your request to the Manager, Standards Office, Small Airplane Directorate, FAA. For information on any already approved alternative methods of compliance, contact Doug Rudolph, Aerospace Engineer, Small Airplane Directorate, ACE-112, 901 Locust, Rm 301, Kansas City, Missouri, 64106; telephone: (816) 329-4059; facsimile: (816) 329-4090.

(2) Alternative methods of compliance approved for AD 2003-14-20 are not considered approved as alternative methods of compliance for this AD.

Is There Other Information That Relates to This Subject?

(g) Australian AD GAF-N22/44, Amendment 2, dated November 2004, also addresses the subject of this AD.

Does This AD Incorporate Any Material By Reference?

(h) You must do the actions required by this AD following the instructions in Nomad–Series N22 & N24 Inspection Requirements Manual, Temporary Revision 26, Fatigue Critical Areas, dated May 27, 2004, and Nomad Alert Service Bulletin ANMD-27-51, Rev. 2, dated April 29, 2004, which incorporates the following pages:

Pages	Revision level	Date
1 and 3	2	April 29, 2004.
2	2	Jan. 29, 2004.
4	¹	Sept. 13, 2002.

¹Original issue.

(1) 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.

(2) To get a copy of this service information, contact Nomad Operations, Aerospace Support Division, Boeing Australia, PO Box 767, Brisbane, QLD 4001 Australia; telephone 61 7 3306 3366; facsimile 61 7 3306 3111. To review copies of this service information, go to the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html or call (202) 741-6030. To view the AD docket, go to the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-001 or on the Internet at <http://dms.dot.gov>. The docket number is FAA-2005-20439; Directorate Identifier 2005-CE-04-AD.

Issued in Kansas City, Missouri, on May 13, 2005.

David R. Showers,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

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