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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

[Docket No. 2003-CE-03-AD; Amendment 39-13376; AD 2003-24-07]

**RIN 2120-AA64**

**Airworthiness Directives; The New Piper Aircraft, Inc. Models PA-31, PA-31-300, PA-31-325, PA-31-350, PA-31P, PA-31T, PA-31T1, PA-31T2, PA-31T3, and PA-31P-350 Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD) that applies to all The New Piper Aircraft, Inc. (Piper) Models PA-31, PA-31-300, PA-31-325, PA-31-350, PA-31P, PA-31T, PA-31T1, PA-31T2, PA-31T3, and PA-31P-350 airplanes. This AD requires you to install an inspection hole (or use for inspection the tooling hole in the rudder bottom rib), conduct a detailed visual inspection of the rudder torque tube and associated ribs for corrosion, and, if corrosion is found, replace or repair the rib/rudder torque tube assembly. This AD is the result of reports of rudder tube corrosion. The actions specified by this AD are intended to detect and correct corrosion in the rudder torque tube assembly and rudder rib, which could result in failure of the rudder torque tube. This failure could lead to loss of rudder control.

**DATES:** This AD becomes effective on February 9, 2004.

As of February 9, 2004, the Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulation.

**ADDRESSES:** You may get the service information referenced in this AD from The New Piper Aircraft, Inc., Customer Services, 2926 Piper Drive, Vero Beach, Florida 32960; telephone: (772) 567-4361; facsimile: (772) 978-6584.

You may view this information at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 2003-CE-03-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** William O. Herderich, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, Georgia 30349; telephone: (770) 703-6082; facsimile: (770) 703-6097.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

*What events have caused this AD?* The FAA has received several reports of rudder tube and rib corrosion on Piper PA-31 Series airplanes. The area surrounding the rudder torque tube assembly and rudder rib does not have a means or access to inspect in this area and neither means nor exits for water to drain out.

*What is the potential impact if FAA took no action?* Corrosion in the rudder torque tube assembly and rudder rib could result in failure of the rudder torque tube. This failure could lead to loss of rudder control.

*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 Piper Models PA-31, PA-31-300, PA-31-325, PA-31-350, PA-31P, PA-31T, PA-31T1, PA-31T2, PA-31T3, and PA-31P-350 airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on June 3, 2003 (68 FR 33030). The NPRM proposed to require you to install an inspection hole, conduct a detailed visual inspection of the rudder torque tube and associated ribs for corrosion, and, if corrosion is found, replace the rib/rudder torque tube assembly.

### **Comments**

*Was the public invited to comment?* We provided the public the opportunity to participate in the development of this AD. The following presents the comments received on the proposal and FAA's response to each comment:

#### **Comment Issue No. 1: Extend the Compliance Time**

*What is the commenter's concern?* A commenter recommends extending the compliance time from 100 hours time-in-service (TIS) to 150 hours TIS. The commenter states that the extension is necessary due to a reported lack of parts and the difficulty in scheduling involved with AD compliance.

*What is FAA's response to the concern?* The FAA agrees that 150 hours TIS would be a more realistic compliance time.

We are changing the final rule AD action accordingly.

#### **Comment Issue No. 2: Allow Option to Repair Parts**

*What is the commenter's concern?* The commenter recommends the following: if you find "light corrosion" or "corrosion that could significantly weaken the rib/rudder torque tube assembly that is less than 50 percent of the thickness over an area less than two square inches" then you may clean up, repair, and coat the corroded area to prevent further damage and continue the part in service.

*What is FAA's response to the concern?* The FAA is currently unaware of any approved repair design for the rib/rudder torque tube assembly. However, FAA has no objection to operation of aircraft with parts that have been repaired or reworked per an FAA-approved repair design.

Therefore, we are changing the final rule AD action to provide the option of repairing with an FAA-approved design.

#### **Comment Issue No. 3: Special Flight Permits Are Not Addressed in the NPRM**

*What is the commenter's concern?* The commenter states that since special flight permits are not addressed in the NPRM, the current 14 CFR part 39 applies and that there is no restriction against issuing a special flight permit.

*What is FAA's response to the concern?* 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 special flight permits. This material previously was included in each individual AD. Since this material is included in 14 CFR part 39, we did not include it in this AD action.

We are not making any changes to the final rule AD action.

#### **Comment Issue No. 4: Allow an Alternate Method of Inspection**

*What is the commenter's concern?* The commenter suggests an alternative to installing an inspection hole in the rudder skin for the rudder torque tube assembly. This alternative method of inspection is to use the tooling hole in the rudder bottom rib since this is convenient and does not contribute to corrosion. Further, you could enlarge the tooling hole to ease use of inspection tools.

*What is FAA's response to the concern?* The FAA agrees that the proposed alternative use of the tooling hole (with optional enlargement) in the rudder bottom rib is an acceptable substitute to installing an access hole.

We are changing the final rule AD action accordingly.

#### **Comment Issue No. 5: Allow Application of Corrosion Inhibitor**

*What is the commenter's concern?* The commenter recommends allowing application of rust inhibitor compound.

*What is FAA's response to the concern?* The application of rust inhibitor compound to the contact surfaces is identified in Piper Service Bulletin No. 1105A, dated September 22, 2003. As a minor correction, we are also noting to protect bare metal per Section 8, FAA Advisory Circular (AC) 43.13-1B.

We are incorporating the referenced correction in the final rule AD action.

#### **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 the changes discussed above and minor editorial corrections. We have determined that these changes and 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 2,269 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 accomplish the installation of inspection and drain holes and inspection of torque tube and associated ribs for corrosion:

<b>Labor cost</b>	<b>Parts cost</b>	<b>Total cost per airplane</b>	<b>Total cost on U.S. operators</b>
3 workhours x \$60 per hour = \$180.	\$10	\$190	2,269 x \$190 = \$431,110

We estimate the following costs to accomplish any necessary corrosion repairs/replacements of the rib/torque tube assembly that would be required based on the results of this proposed inspection. We have no way of determining the number of airplanes that may need this repair/replacement:

<b>Labor cost</b>	<b>Parts cost</b>	<b>Total cost per airplane</b>
16 workhours x \$60 per hour = \$960	\$800	\$1,760

### **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 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 "2003-CE-03-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. FAA amends § 39.13 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).

**2003-24-07 The New Piper Aircraft, Inc.:** Amendment 39-13376; Docket No. 2003-CE-03-AD.

## When Does This AD Become Effective?

- (a) This AD becomes effective on February 9, 2004.

## What Other ADs Are Affected by This Action?

- (b) None.

## What Airplanes Are Affected by This AD?

- (c) This AD affects the following airplane models and serial numbers that are certificated in any category:

<b>Model</b>	<b>Serial numbers</b>
PA-31, PA-31-300, PA-31-325	31-2 through 31-8312019
PA-31-350	31-5001 through 31-8553002
PA-31P	31P-1 through 31P-7730012
PA-31P-350	31P-8414001 through 31P-8414050
PA-31T	31T-7400001 through 31T-8120104
PA-31T1	31T-7804001 through 31T-1104017
PA-31T2	31T-8166001 through 31T-1166008
PA-31T3	31T-8275001 through 31T-5575001

## What Is the Unsafe Condition Presented in This AD?

- (d) This AD is the result of reports of rudder tube corrosion. The actions specified by this AD are intended to detect and correct corrosion in the rudder torque tube assembly and rudder rib, which could result in failure of the rudder torque tube. This failure could lead to loss of rudder control.

## What Must I Do to Address This Problem?

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

Actions	Compliance	Procedures
(1) Install an inspection hole in the rudder skin for the rudder torque tube assembly; OR instead of installing an inspection hole, use the tooling hole in the rudder bottom rib. You may enlarge the diameter of the tooling hole no more than 0.25 inches to facilitate inspection and corrosion treatment.	Within the next 150 hours time-in-service (TIS) after February 9, 2004 (the effective date of this AD), unless already accomplished.	Install an inspection hole per The New Piper Aircraft, Inc. Service Bulletin No. 1105A, dated September 22, 2003. Protect bare metal per Section 8, FAA Advisory Circular (AC) 43.13-1B.
(2) Visually inspect the rudder torque tube and associated ribs for corrosion.	Before further flight after the installation required in paragraph (e)(1) of this AD and thereafter at intervals not to exceed 12 calendar months.	Follow The New Piper Aircraft, Inc. Service Bulletin No. 1105A, September 22, 2003.
(3) If you find corrosion damage: (i) Replace the rib/rudder torque assembly; OR (ii) Repair the damaged torque tube using an FAA-approved repair design.	Before further flight after any inspection required in paragraph (e)(2) of this AD where corrosion damage is found.	Follow The New Piper Aircraft, Inc. Service Bulletin No. 1105A, dated September 22, 2003. Repairs must address items in paragraph (f) of this AD and may be approved per FAA Order 8300.10 (Volume 2, Chapter 1), Airworthiness Inspector's Handbook.

(f) All repairs must address the following:

(1) Detect hidden corrosion damage:

(i) In the faying surface between the rudder ribs and torque tube assembly attachments.

(ii) Inside the bore of the torque tube.

(2) Establish procedures for removing corrosion or for corrosion prevention of repaired parts.

Advisory Circular (AC) 43.13-1B Acceptable Methods, Techniques, and Practices-Aircraft Inspection and Repair, and AC 43-4A, Corrosion Control for Aircraft, provide resources for establishment of these procedures.

(3) For repairs involving material removal without reinforcement: Define a clear, accurate, and complete description of negligible damage limits. Note that acceptable amounts of material removal may be location-dependent. Higher-stressed areas will be less tolerant of material removal.

(4) For all repairs involving reinforcement: A clear, accurate, and complete description of the repair design must be established per 14 CFR part 21.31.

(5) Verify that all repairs follow Subpart C—Strength Requirements and Subpart D—Design and Construction of Civil Aviation Regulations (CAR) 3, dated May 15, 1956 (the original certification basis for the Piper PA-31 Series as shown in type certificate data sheets A8EA and A20SO).

### May I Request an Alternative Method of Compliance?

(g) You may request a different method of compliance or a different compliance time for this AD by following the procedures in 14 CFR 39.13. Send your request to the Manager, Atlanta Aircraft Certification Office (ACO), FAA. For information on any already approved alternative methods of

compliance, contact William O. Herderich, Aerospace Engineer, FAA, Atlanta ACO, One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, Georgia 30349; telephone: (770) 703-6082; facsimile: (770) 703-6097.

**Does This AD Incorporate Any Material by Reference?**

(h) You must do the actions required by this AD following the instructions in The New Piper Aircraft, Inc. Service Bulletin No. 1105A, dated September 22, 2003. The Director of the Federal Register approved the incorporation by reference of this service bulletin per 5 U.S.C. 552(a) and 1 CFR part 51. You may get a copy from The New Piper Aircraft, Inc., Customer Services, 2926 Piper Drive, Vero Beach, Florida 32960; telephone: (772) 567-4361; facsimile: (772) 978-6584. You may review copies at FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Issued in Kansas City, Missouri, on November 24, 2003.

James E. Jackson,  
Acting Manager, Small Airplane Directorate, Aircraft Certification Service.  
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