

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2004-19960; Directorate Identifier 2004-CE-47-AD; Amendment 39-14153; AD 2005-13-16]**

**RIN 2120-AA64**

#### **Airworthiness Directives; The New Piper Aircraft, Inc. PA-34 Series Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA adopts an airworthiness directive to supersede AD 93-24-14 applicable to all The New Piper Aircraft, Inc. (Piper) PA-34 series airplanes. This AD results from many service difficulty reports related to the collapse of the nose landing gear (NLG). Consequently, this AD retains the actions required in AD 93-24-14, requires you to inspect the NLG and components of the NLG using new procedures for rigging the nose gear installation, and requires you to replace unserviceable parts. We are issuing this AD to detect, correct, and prevent failure in certain components of the NLG, lack of cleanliness of the NLG due to inadequate maintenance, or lack of lubricant in the NLG or NLG components. This failure of the NLG could lead to loss of control of the airplane during take-off, landing, or taxiing operations.

**DATES:** This AD becomes effective on August 8, 2005.

As of August 8, 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 The New Piper Aircraft, Inc., 2926 Piper Drive, Vero Beach, Florida 32960. To review 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](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-2004-19960; Directorate Identifier 2004-CE-47-AD.

**FOR FURTHER INFORMATION CONTACT:** Hassan Amini, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, Georgia 30349; telephone: (770) 703-6080; facsimile: (770) 703-6097.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

*What events have caused this AD?* Several incidents where the nose landing gear (NLG) on The New Piper Aircraft, Inc. (Piper) PA-34 series airplanes collapsed caused us to issue AD 93-24-14, Amendment 39-8762 (58 FR 65115, December 13, 1993). AD 93-24-14 currently requires the repetitive replacement of the bolt and stack up that connect the upper drag link to the nose gear trunnion on all Piper PA-34 series airplanes.

Since AD 93-24-14 was issued, FAA has received 186 service difficulty reports (SDRs) related to the NLG on Piper PA-34 series airplanes. There are 71 SDRs that describe the collapse or involuntary retraction of the NLG.

A review of the SDRs related to the NLG and the collapse or involuntary retraction of the NLG found that one or more of the following conditions could result in collapse of the NLG:

- Nose gear steering control excessive travel and the disengagement of the tiller roller;
- Failure or out of tolerances of the retraction links and bolts;
- Crack(s) in the nose gear trunnion;
- Failure of the nose gear upper drag link attach bolt;
- Failure of the nose gear retraction link retention spring;
- Out of rig and failure of the nose gear down lock link assembly;
- Failure of the nose gear actuator mounting bracket and its attachments;
- Failure of the attachment of the retraction link to the actuator mounting bracket;
- Lack of lubricant in the NLG or NLG components; or
- Lack of cleanliness of the NLG or the NLG components.

The exact cause of the collapse or involuntary retraction of the NLG cannot be determined.

Consequently, Piper took the following actions to prevent future failure of the NLG:

- Modified certain components to improve their long-term service life;
- Corrected and clarified the rigging procedures for the nose gear installation; and
- Revised the periodic inspection requirements of the applicable maintenance manuals.

*What is the potential impact if FAA took no action?* Failure in certain components of the NLG, a lack of cleanliness of the NLG, or a lack of lubricant in the NLG or the NLG components could result in failure of the NLG. This failure of the NLG could lead to loss of control of the airplane during take-off, landing, or taxiing operations.

*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 The New Piper Aircraft, Inc. (Piper) PA-34 series airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on February 9, 2005 (70 FR 6782). The NPRM proposed to supersede Airworthiness Directive (AD) 93-24-14, which applies to all Piper PA-34 series airplanes. AD 93-24-14 currently requires you to repetitively replace the bolt and stack up that connect the upper drag link to the nose gear trunnion. The NPRM proposed to retain the actions required in AD 93-24-14 and would require you to inspect the NLG and components of the NLG using new procedures for rigging the nose gear installation, and replace unserviceable parts.

## Comments

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

### Comment Issue No. 1: No Justification for the NPRM Based on the Types of Operations

*What is the commenter's concern?* The commenter states that the NPRM does not distinguish between the types of operations based on the Service Difficulty Reports (SDRs). The commenter specifically states:

- The incidents are primarily operational and maintenance issues, not design issues.
- The FAA should withdraw the NPRM until a pattern or relationship to the kinds of operations involved is developed.
- The NPRM gives equal weight to improper maintenance with operational errors as the justification for the AD.

The commenter believes that, unless FAA can develop a specific correlation to why the problems are occurring, then the AD should be withdrawn.

Therefore, the commenter does not believe that AD action is justified.

*What is FAA's response to the concern?* The FAA's SDR database shows 186 reports related to NLG problems, with 71 of these NLG problems resulting in collapses. The data shows that the majority of the incidents are maintenance related. This led to FAA reviewing the maintenance procedures currently in place. Based on this review, we have determined that the current maintenance procedures are not adequate to prevent problems with the nose landing gear on these airplanes, and additional inspections and modifications are necessary to prevent an unsafe condition.

The only vehicle FAA has for mandating such inspections and modifications is through an AD. In this case, we issued an NPRM and are following it with a final rule.

Therefore, we are not changing the final rule as a result of these comments.

### Comment Issue No. 2: FAA Should Do More Studies To Determine Exact Cause

*What is the commenter's concern?* The commenter believes that FAA should continue to study this issue to determine what is causing the majority of the problems, and thus direct the thrust of the corrective action in a more targeted manner. The commenter states that FAA is using a "shotgun" approach, and that this is unwise because it treats this problem in a vacuum.

*What is FAA's response to the concern?* The FAA does not concur. The FAA in collaboration with Piper has examined this issue for the past 5 years. Piper conducted several ground and flight tests in an effort to determine the source of the problem. Unfortunately, due to the complicated design of the NLG, Piper could not isolate one specific problem. However, the tests and type design show that the components of the NLG must be within the tolerances called out in the appropriate maintenance manuals and appropriate service Bulletins for the NLG to operate properly. Specifically, the actions of Piper Service Bulletin No. 1123A must be incorporated.

As stated earlier, the only vehicle FAA has for mandating such inspections and modifications is through an AD. In this case, we issued an NPRM and are following it with a final rule.

Therefore, we are not changing the final rule as a result of these comments.

### **Comment Issue No. 3: Improper Cleaning Is Serious for Mechanic Training and Should Not Be Targeted to Only Piper PA-34 Series Airplanes**

*What is the commenter's concern?* The commenter states that, if the improper cleaning of NLG parts is this serious of an issue, then why is FAA targeting only Piper PA-34 series airplanes? The commenter believes that FAA should target the Airframe & Powerplant (A&P) training methods.

*What is FAA's response to the concern?* As stated earlier, cleaning is only one aspect of the maintenance of these components that the NPRM is addressing. Due to the nature of the Model PA-34 NLG design, it is critical that every aspect of maintenance be fully complied with to preclude any type of failure. This includes incorporating the actions of Piper Service Bulletin No. 1123A.

As stated earlier, the only vehicle that FAA has for mandating such inspections and modifications is through an AD. In this case, we issued an NPRM and are following it with a final rule. The FAA routinely evaluates the current training methods of A&P mechanics and makes any necessary adjustments.

Based on this comment, we are not changing the final rule as a result of these comments.

### **Comment Issue No. 4: The Problem Seems To Be Isolated to Part 135 and Training Operations; the AD Should Be Written Against These Types of Operations Only**

*What is the commenter's concern?* The commenter states that, if operators are breaking nose gear parts during training or part 135 operations, it makes little sense to mandate a very costly AD on the entire fleet. The commenter wants FAA to revise the AD to only apply to those airplanes in these types of operations.

*What is FAA's response to the concern?* The FAA does not agree that the failure of the NLG is strictly limited to training schools or part 135 operations. We have determined this AD mandates inspections that are required to prevent the failure of the NLG, regardless of operation. The FAA does not issue ADs against specific operation, but against the type design of the specific product.

Therefore, we are not changing the final rule as a result of these comments.

### **Comment Issue No. 5: The NPRM Does Not Address Any Serious Injuries That Have Resulted from the SDR Reports**

*What is the commenter's concern?* The commenter states that the NPRM does not include any information about any serious injuries that have resulted from the problem, specifically any incidents of loss of life. The FAA infers from the commenter that, without this information, the NPRM is not justified and should be withdrawn.

*What is FAA's response to the concern?* The FAA does not concur. The decision to issue an AD is not based on occurrences of injuries but it is based on whether an unsafe condition exists. In this case, FAA determined that the frequency of occurrences that lead to the unsafe condition justified AD action.

Therefore, we are not changing the final rule as a result of these comments.

### **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.

## Docket Information

*Where can I go to view the docket information?* You may view the AD docket that contains information relating to this subject in person at the DMS Docket Offices between 9 a.m. and 5 p.m. (eastern standard time), Monday through Friday, except Federal holidays. The Docket Office (telephone 1-800-647-5227) is located on the plaza level of the Department of Transportation NASSIF Building at the street address stated in ADDRESSES. You may also view the AD docket on the Internet at <http://dms.dot.gov>.

## 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 2,047 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 inspections and the rigging of the nose gear installation:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
9 workhours × \$65 per hour = \$585	No cost for parts	\$585	2,047 × \$585 = \$1,197,495.

We estimate the following costs to do all the necessary replacements that would be required based on the results of this inspection. We have no way of determining the number of airplanes that may need these replacements:

Labor cost	Parts cost	Total cost per airplane
44 workhours × \$65 per hour = \$2,860	\$920 (only if cracks or damage found in the NLG).	\$2,860 + \$920 = \$3,780.

## 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-2004-19960; Directorate Identifier 2004-CE-47-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](http://www.faa.gov)"*

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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).

**2005-13-16 The New Piper Aircraft, Inc.:** Amendment 39-14153; Docket No. FAA-2004-19960; Directorate Identifier 2004-CE-47-AD.

## **When Does This AD Become Effective?**

- (a) This AD becomes effective on August 8, 2005.

## **What Other ADs Are Affected by This Action?**

- (b) This AD supersedes AD 93-24-14, Amendment 39-8762.

## **What Airplanes Are Affected by This AD?**

- (c) This AD affects Models PA-34-200, PA-34-200T, and PA-34-220T airplanes, all serial numbers, that are certificated in any category.

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

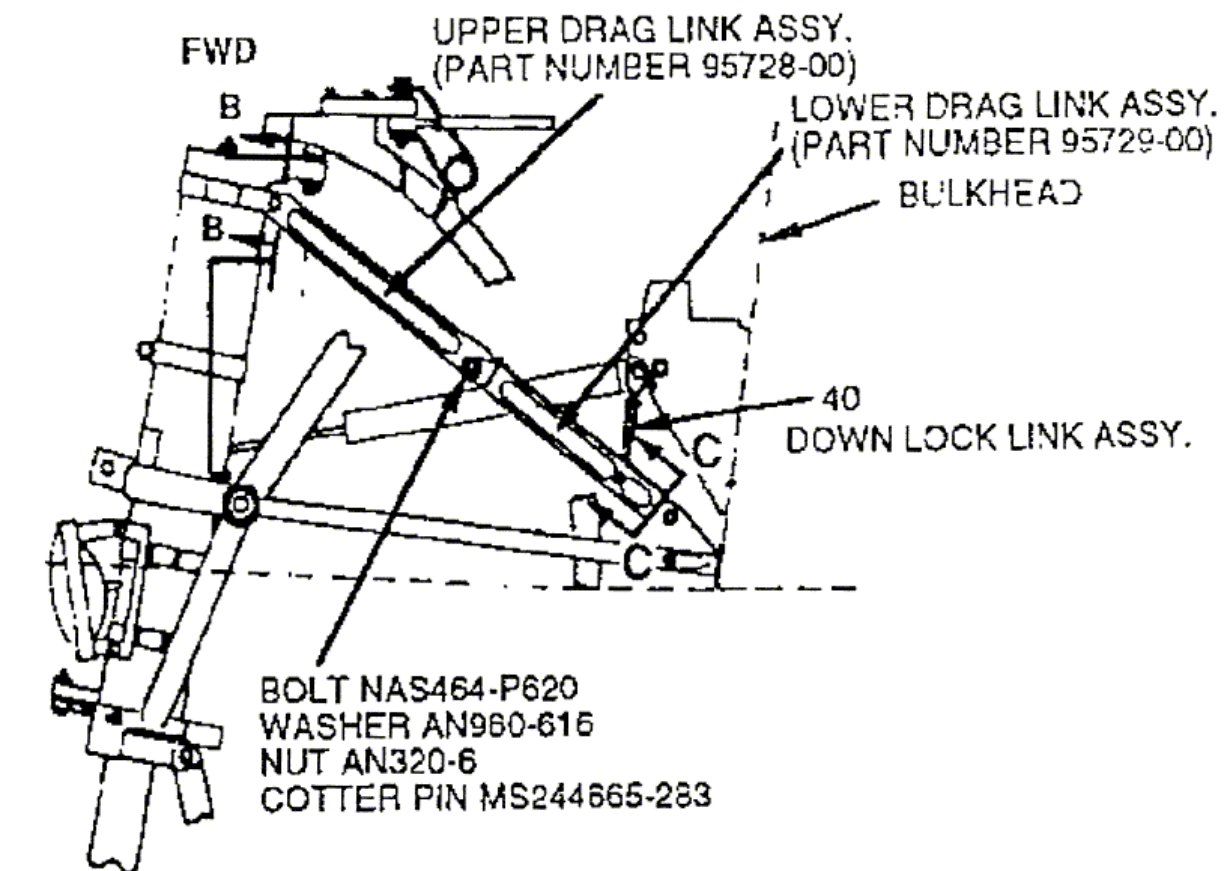
- (d) This AD is the result of service difficulty reports related to the collapse or involuntary retraction of the nose landing gear (NLG). The actions specified in this AD are intended to detect, correct, and prevent failure in certain components of the NLG, lack of cleanliness of the NLG due to inadequate maintenance, or lack of lubricant in the NLG or NLG components. This failure of the NLG could lead to loss of control of the airplane during take-off, landing, or taxiing operations.

## **What Must I Do To Address This Problem?**

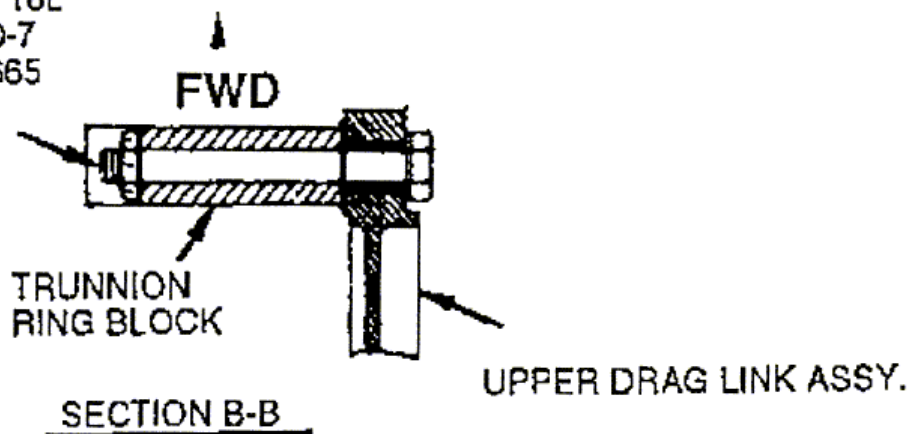
- (e) To address this problem, you must do the following:

Actions	Compliance	Procedures
(1) Replace the bolt and stack up that connects the upper drag link to the nose gear trunnion with new parts (or FAA-approved equivalent part numbers (P/N)) of the following: (i) Piper P/N 400 274 (AN7–35) bolt; (ii) Piper P/N 407 591 (AN960–716L) washer, as applicable; (iii) Piper P/N 407 568 (AN960–716); (iv) Piper P/N 404 396 (AN320–7) nut; and (v) Piper P/N 424 085 cotter pin.	Within the next 100 hours time-in-service (TIS) after January 28, 1994 (the effective date of AD 93–24–14), unless already done within the last 400 hours TIS before January 28, 1994 (compliance with AD 93–24–14). Repetitively replace thereafter at intervals not to exceed 500 hours TIS. Continue to repetitively replace until the actions in paragraphs (e)(2) and (e)(3) of this AD begin.	Follow Figure 1 of this AD.
(2) Do the inspections, replacements, and other corrective actions specified in Table 1 “Specified Maintenance” of Piper Service Bulletin No. 1123A, dated November 30, 2004.	Within the next 100 hours TIS after August 8, 2005 (the effective date of this AD), unless already done. Repetitively inspect thereafter at the intervals referenced in the Inspection Time column of the <i>INSTRUCTIONS</i> paragraph in Piper Service Bulletin No. 1123A, dated November 30, 2004.	Follow The New Piper Aircraft, Inc. Service Bulletin No. 1123A, dated November 30, 2004.
(3) Do any necessary corrective actions as a result of the actions specified in Table 1 “Specified Maintenance” of Piper Service Bulletin No. 1123A, dated November 30, 2004.	Before further flight after any action required by paragraph (e)(2) of this AD.	Follow The New Piper Aircraft, Inc. Service Bulletin No. 1123A, dated November 30, 2004.





AN7-35  
AN960-716  
OR  
AN960-716L  
AN320-7  
MS24665



"UPPER" DRAG LINK - TO -  
GEAR CONNECTION

Figure 1.

**Note 1:** Paragraph 2. Modified Components of the INSTRUCTIONS section of The New Piper Aircraft, Inc. Service Bulletin No. 1123A, dated November 30, 2004, specifies modified parts that you may install for improved service life.

**Note 2:** The Actions column of the table in paragraph (e) of this AD may include one or a combination of these actions: replacement, repair, adjustment, alignment, cleaning, lubricating, or other action.

### **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. 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, Atlanta Aircraft Certification Office (ACO), FAA. For information on any already approved alternative methods of compliance, contact Hassan Amini, Aerospace Engineer, FAA, Atlanta ACO, One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, Georgia 30349; telephone: (770) 703-6080; facsimile: (770) 703-6097.

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

(g) You must do the actions required by this AD following the instructions in The New Piper Aircraft, Inc. Service Bulletin No. 1123A, dated November 30, 2004. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To get a copy of this service information, contact The New Piper Aircraft, Inc., 2926 Piper Drive, Vero Beach, Florida 32960. 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](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-2004-19960; Directorate Identifier 2004-CE-47-AD.

Issued in Kansas City, Missouri, on June 15, 2005.

John R. Colomy,  
Acting Manager, Small Airplane Directorate, Aircraft Certification Service.  
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BILLING CODE 4910-13-P