DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [60 FR 67321 12/29/95]

Docket No. 95-CE-28-AD; Amendment 39-9472; AD 95-26-13

Airworthiness Directives; The New Piper Aircraft, Inc. (formerly Piper Aircraft Corporation) PA28 and PA32 Series Airplanes

AGENCY: Federal Aviation Administration, DOT

ACTION: Final Rule.

SUMMARY: This amendment supersedes Airworthiness Directive (AD) 76-25-06, which currently requires replacing oil cooler hoses on The New Piper Aircraft, Inc. (Piper) Model PA28-140 airplanes, and inspecting for a minimum clearance between the oil cooler hose assemblies and the front exhaust stacks and adjusting if proper clearance is not obtained. This action maintains the clearance inspection and oil cooler hose replacements, requires this inspection and these replacements to be repetitive, and extends the applicability to include PA32 series and other PA28 series airplanes. It also provides the option of installing approved TSO-C53a, Type D oil cooler hose assemblies as terminating action for the repetitive inspection requirement. Numerous incidents/accidents caused by oil cooler hose rupture or failure on the affected airplanes prompted this action. The actions specified by this AD are intended to prevent these oil cooler hoses from failing or rupturing, which could result in engine stoppage and subsequent loss of control of the airplane.

EFFECTIVE DATE: February 5, 1996.

ADDRESSES: Information that relates to this AD may be examined at the Federal Aviation Administration (FAA), Central Region, Office of the Assistant Chief Counsel, Attention: Rules Docket 94-CE-28-AD, Room 1558, 601 E. 12th Street, Kansas City, Missouri 64106.

FOR FURTHER INFORMATION CONTACT: Ms. Juanita Craft-Lloyd, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office, Campus Building, 1701 Columbia Avenue, suite 2-160, College Park, Georgia 30337-2748; telephone (404) 305 -7373; facsimile (404) 305-7348.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to Piper Model PA28-140 airplanes was published in the **Federal Register** on March 8, 1995 (60 FR 12714). The action proposed to supersede AD 76-25-06, Amendment 39-2788, with a new AD that would retain the clearance inspection and oil cooler hose replacement for the Piper Model PA28-140 airplanes, and make the inspection and replacement repetitive for these airplanes as well as other PA28 series and the PA32 series airplanes. It would also provide the option of installing approved TSO-C53a, Type D oil cooler hose assemblies as terminating action for the repetitive inspection requirement.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

One commenter states that the proposal should take into account that the affected airplanes could have oil cooler hose assemblies installed other than those manufactured from Piper. The FAA concurs and has changed the AD to reflect that the AD applies to airplanes with oil cooler hose assemblies that do not meet TSO-C53a, Type D requirements.

This same commenter points out that paragraph (b)(2) of the proposed AD contains the words "oil cooler assembly" when it should contain the words "oil cooler hose assembly". The FAA concurs and has changed paragraph (b)(2) of the AD to reflect the above-referenced language.

This commenter also believes that the cost of the oil cooler hoses is too low and that the FAA did not take into account that each airplane has two oil cooler hoses installed. The commenter states that the price of an oil cooler hose is between $122 and $279, and the FAA estimates $110. The FAA will change the economic paragraph of the final rule to incorporate the upper end of the price range for oil cooler hoses of $279 per hose with two oil cooler hoses per airplane ($558 per airplane for parts).

A commenter proposes that the FAA clarify whether the date used to determine the eight-year replacement interval is the installation date, rubber cure date, or the pressure test date. The FAA will specify in the AD that the date used to determine the eight-year replacement interval is the installation date.

One commenter believes that the FAA should withdraw the notice of proposed rulemaking (NPRM) because a pilot can inspect these oil cooler hoses and, therefore, the action does not warrant the expense and record keeping required by AD action. Another commenter does not request that the AD be withdrawn, but requests that the FAA include the provision of allowing the pilot to inspect the oil cooler hoses. The FAA does not concur with either of these comments. Sections 43.3(g) and 43.7(f) of the Federal Aviation Regulations (14 CFR 43.3 and 14 CFR 43.7) contain the provision to allow a pilot to perform preventive maintenance and return the airplane to service. Part 43, Appendix A of the Federal Aviation Regulations (14 CFR, part 43, Appendix A) outlines what is considered preventive maintenance. Inspections of oil cooler hose assemblies are not authorized as preventive maintenance actions as detailed in the above-referenced portion of the regulations. The AD is unchanged as a result of these comments.

A commenter believes the NPRM should be withdrawn because the 20 reported incidents over a 19-year period with no damage reported do not justify repetitive 100-hour time-in-service (TIS) inspections and 8-year (or 1,000 hours TIS) repetitive oil cooler hose assembly replacements. The FAA does not concur. The FAA has received 26 incident/accident occurrences relating to oil cooler hose failure since 1985. In addition, 24 service difficulty reports (SDR) have been filed on this subject since 1987. The FAA has determined that oil cooler hoses that fail or rupture could result in engine stoppage and subsequent loss of control of the airplane. The AD is unchanged as a result of this comment.

Another commenter requests that the FAA withdraw the NPRM because the actions are the same as what is listed in the Piper service manuals. The commenter quotes the following from the FAA Airworthiness Directive Manual, FAA-AIR-M-8040.1:

"An AD should not be issued to assure the use of normal maintenance practices on a product where individual cases of improper maintenance or lack of maintenance have contributed to an unsafe condition. Corrective action in those instances should be taken through normal Flight Standards maintenance communication channels, such as General Alerts, Maintenance Bulletins, and Notices."

The FAA does not consider inspecting oil cooler hoses on the affected Piper PA28 and PA32 series airplanes a general maintenance action. The close proximity of the oil cooler hose assemblies to the exhaust stack causes the oil cooler hoses to rupture instead of developing leaks over time. A general maintenance action on oil cooler hoses would be to check for leaks; however, the service history of the affected airplanes is indicating ruptured oil cooler hoses. For this reason, the FAA has determined that the close proximity of the oil cooler hose assemblies to the exhaust stack require special inspections for the oil cooler hoses through AD action to prevent these hoses from failing or rupturing. The AD is unchanged as a result of this comment.

One other commenter (an owner of a Piper Model PA28R-201T airplane) recommends that the NPRM be withdrawn because no corrosion was found on this commenter's airplane oil cooler hoses when the tanks were removed and the hoses replaced. In addition, this owner operates the airplane away from seashores in a dry climate. For these reasons, this commenter believes the NPRM should be withdrawn. The FAA does not concur. AD's are issued based on a known "unsafe condition that could exist or develop on airplanes of the same type design." In this instance, the owner operates a Piper Model PA28R-201T airplane, which is not affected by this AD because this particular model does not have external oil cooler hose assemblies. The AD is unchanged as a result of this comment.

One commenter feels that the FAA is inferring that Piper airplane operators are less competent than other operators by only writing the AD against certain Piper PA28 and PA32 series airplanes. The commenter states that every reciprocating engine-powered aircraft has oil lines and hoses and that the AD should be written against all such aircraft. The FAA does not concur. As stated in the NPRM, "other airplane models have shown a history of oil cooler hose problems; however, most of these have been attributed to leaking oil cooler hoses instead of ruptured hoses or broken hoses as are detailed in the incident/accident reports of the affected PA28 and PA32 series airplanes. The close proximity of the oil cooler hose assemblies to the exhaust stacks in some of the affected airplanes contributes to the hazardous nature of these oil cooler hose failures." The AD is unchanged as a result of this comment.

A commenter states that Type D oil cooler hoses are less flexible than other hoses and, therefore, cannot always be interchanged. This commenter further explains that this less-flexible hose could kink during oil cooler hose installation or during flight because of in-service vibration. This could prevent oil passage and result in engine stoppage. The FAA concurs that these Type D oil cooler hoses are less flexible and could kink. The FAA is changing the AD to require a minimum bend radius of 6.5 inches on oil cooler hose assemblies incorporating 0.75-inch outer diameter hoses.

Another commenter requests that the FAA either delete the repetitive replacement requirement or have the replacement intervals coincide with every 10th annual inspection. The FAA does not concur. The close proximity of the oil cooler hose assemblies to the exhaust stacks causes the heat from the exhaust stacks to affect the life of the hoses. This also causes the hoses to rupture instead of leak. With this in mind, the FAA believes that repetitively inspecting the oil cooler hoses every 100 hours TIS and replacing all hoses every 8 years will accomplish the intent of eliminating the unsafe condition addressed in this action. The AD is unchanged as a result of this

comment.

After careful review of all available information related to the subject presented above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed except for the wording change to limit the applicability to oil cooler hose assemblies that do not meet TSO-C53a, Type D requirements; the rewording of "oil cooler assembly" to "oil cooler hose assembly" in paragraph (b)(2) of the AD; the change in the economic paragraph to reflect more accurate oil cooler hose price information; the clarification that the replacement interval is based on the installation date; the addition of requiring a minimum bend radius of 6.5 inches on oil cooler hose assemblies requiring a 0.75-inch outer diameter hose; and minor editorial corrections. The FAA has determined that the minor addition, changes, corrections, and clarification will not change the meaning of the AD and will not add any additional burden upon the public than was already proposed.

The replacement compliance time for this AD is presented in both hours TIS and calendar time with the prevalent compliance time being that which occurs first. Deterioration or failure of the oil cooler hose assemblies could occur as a result of normal flight operation or as a result of time. Therefore, the FAA has determined that this dual replacement compliance time is needed to assure that the oil cooler hose assemblies are replaced before they deteriorate and rupture or fail.

The FAA estimates that 25,000 airplanes in the U.S. registry will be affected by this AD, that it will take approximately 2 workhours (1 workhour per inspection and 1 workhour per replacement) per airplane to accomplish the required action, and that the average labor rate is approximately $60 an hour. Parts cost approximately $558 per airplane ($279 per oil cooler hose with two hoses per airplane). Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $16,950,000 or $678 per airplane. This figure does not take into the account the cost of repetitive inspections or repetitive replacements. The FAA has no way of determining the number of repetitive inspections or replacements each owner/operator would incur over the life of the airplane.

The regulations adopted herein will not have substantial direct effects 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. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this action (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. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption "ADDRESSES".

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, pursuant to 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 USC 106(g), 40101, 40113, 44701.

Section 39.13 - [AMENDED]

2. Section 39.13 is amended by removing Airworthiness Directive (AD) 76-25-06, Amendment 39-2788, 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

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, 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 FAR Subpart 39.3).

95-26-13 THE NEW PIPER AIRCRAFT, INC.: Amendment 39-9472. Docket 95-CE-28-AD. Supersedes AD 76-25-06, Amendment 39-2788.

Applicability: The following airplane models (all serial numbers), certificated in any category, that are equipped with oil cooler hose assemblies that do not meet TSO-C53a, Type D requirements:.

PA28-140	PA28-150	PA28-160	PA28S-160
PA28-180	PA28S-180	PA28R-180	PA28R-200
PA28R-201	PA28-151	PA28-161	PA28-181
PA28-235	PA28-236	PA32-260	PA32-300
PA32S-300	PA32-301	PA32R-300	PA32RT-300
PA32R-301(SP)	PA32R-301(HP)	PA32RT-300T	PA32R-301T
PA32-301T			

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (f) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated in the body of this AD, unless accomplished previously.

To prevent oil cooler hoses from failing or rupturing, which could result in engine stoppage and subsequent loss of control of the airplane, accomplish the following:

(a) Within the next 100 hours time-in-service (TIS) after the effective date of this AD,

and thereafter at intervals not to exceed 100 hours TIS, inspect the oil cooler hoses to ensure that the hoses meet the criteria presented in the paragraphs below.

(1) For airplanes that have any oil cooler hose assembly mounted at the front or back of the airplane, or both, the fire sleeve of the hose should not be soaked with oil or have a brownish or whitish color, and there should be no evidence of deterioration as a result of heat, brittleness, or oil seepage. Prior to further flight, replace any hose that is soaked with oil, has a brownish or whitish color, or has evidence of deterioration.

(2) On airplanes that have any oil cooler hose assembly mounted in the front of the airplane, ensure that the following exists, and, prior to further flight, adjust accordingly:

(i) The hose passes underneath and behind the electrical ground cable and in front of the lower of the two engine mount struts when the hose is routed to the rear of the engine; and

(ii) The hose is tied to the engine mount strut and a clearance of at least 2 inches exists between the oil hose and exhaust stack.

NOTE 2: Figure 1 of this AD relates to the conditions specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this AD.

(b) Upon the accumulation of 8 years or 1,000 hours TIS after installation of each oil cooler assembly, whichever occurs first, and thereafter every 8 years or 1,000 hours TIS (whichever occurs first), accomplish one of the following:

(1) Replace each oil cooler hose assembly with a part number specified in the APPLICABILITY section of this AD, and reinspect in accordance with paragraph (a) of this AD at intervals not to exceed 100 hours TIS; or

(2) Replace each oil cooler hose assembly with an approved TSO-C53a, Type D, hose assembly ensuring that there is a minimum of 2 inches between the oil cooler hoses and exhaust stacks (as applicable) upon installation. Ensure that there is a minimum bend radius of 6.5 inches on oil cooler assemblies incorporating 0.75-inch outer diameter hoses.

(c) The replacement specified in paragraph (b)(2) of this AD may be accomplished at any time prior to the 8-year or 1,000-hour compliance time as terminating action for the 100-hour TIS repetitive inspection requirement of this AD.

(d) After adjusting or installing oil cooler hoses, prior to further flight, run the engine for 5 minutes to ensure that there are no oil leaks and that the 2-inch clearance is maintained (as applicable) when the engine is warm. Prior to further flight, replace any leaking oil cooler hoses and adjust the clearance accordingly.

NOTE 3: Although not required by this AD, the FAA recommends that an oil cooler hose flexibility test be accomplished at each 100-hour TIS inspection interval. Oil cooler hose flexibility may be determined by gently lifting the hose in several places from the bottom of its downward arc to the oil cooler. If the oil cooler hose moves slightly either from side-to-side or upward with the hand at the center of an even arc, then some flexibility remains. If the oil cooler hose appears hardened or inflexible, replacement is recommended.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(f) An alternative method of compliance or adjustment of the initial or repetitive compliance times that provides an equivalent level of safety may be approved by the Manager, Atlanta Aircraft Certification Office (ACO), Campus Building, 1701 Columbia Avenue, suite 2-160, College Park, Georgia 30337-2748. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

NOTE 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta ACO.

NOTE 5: Alternative methods of compliance approved in accordance with AD 76-25-06 (superseded by this action) are not considered approved as alternative methods of compliance with this AD.

(g) Figure 1 of this AD may be obtained from the Atlanta ACO at the address specified in paragraph (f) of this AD. This document or any other information that relates to this AD may be inspected at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri.

(h) This amendment (39-9472) supersedes AD 76-25-06, Amendment 39-2788.

(i) This amendment (39-9472) becomes effective on February 5, 1996.

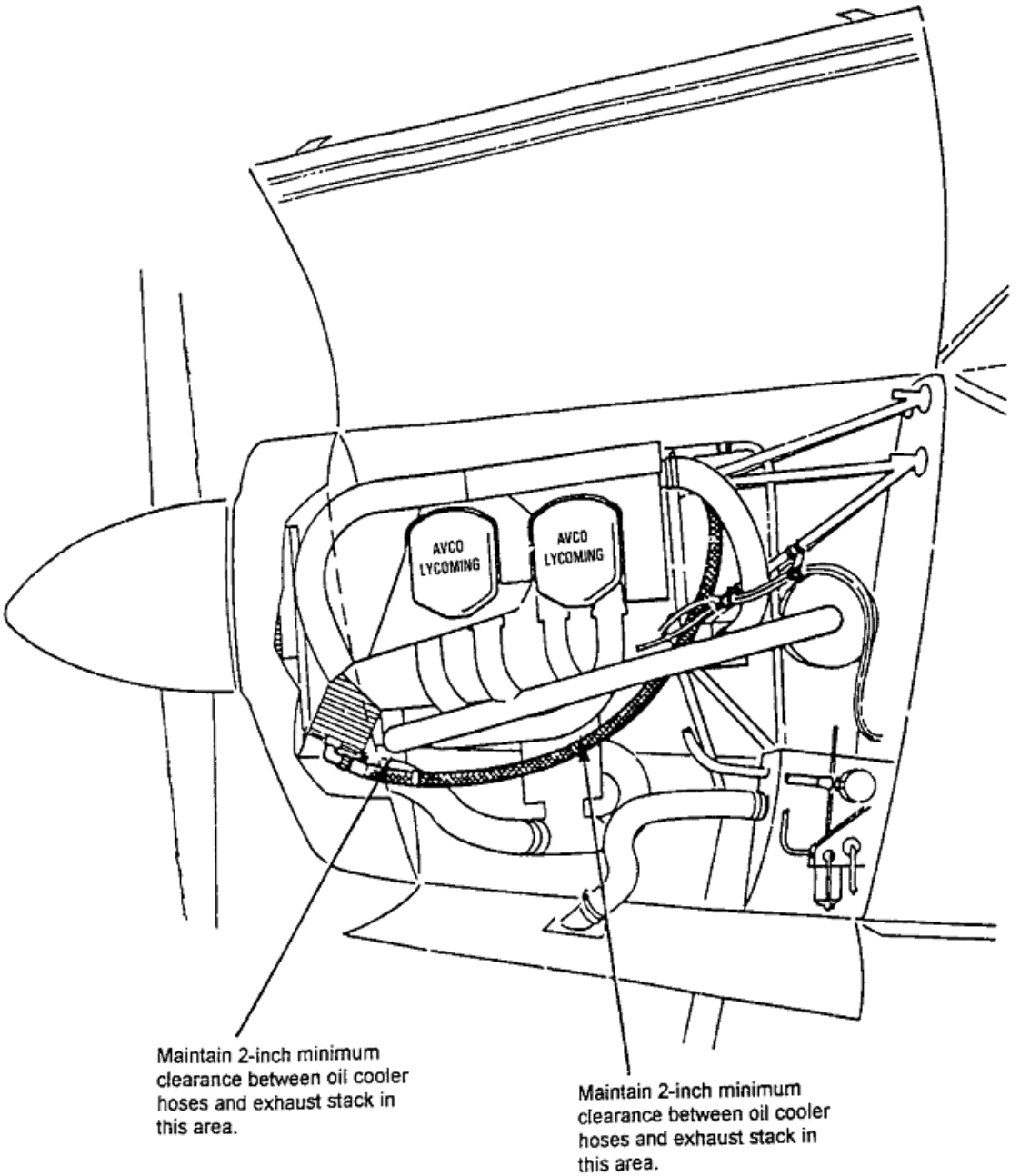

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Figure 1