



**SAIB:** CE-09-13

**Date:** February 23, 2009

**SUBJ:** Landing Gear: Engine Mount-Nose Landing Gear Attach Section

*This is information only. Recommendations aren't mandatory.*

## Introduction

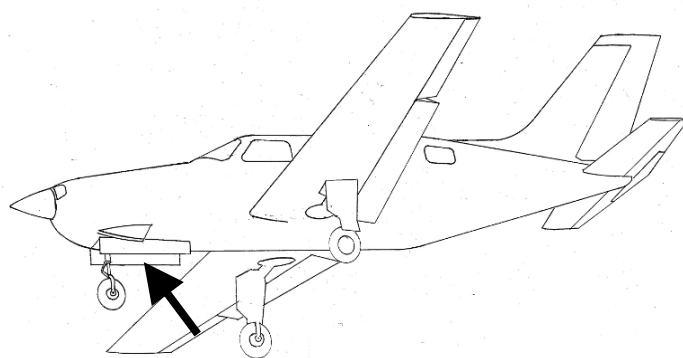
This Special Airworthiness Information Bulletin (SAIB) alerts you, an owner or operator, of certain Piper PA-46 series aircraft, of possible cracks in the engine mount where both the nose landing gear (NLG) trunnion and the NLG actuator attach. This condition is addressed in Piper Service Bulletins (SB) 1103C and 1154C and Piper Service Letter (SL) 1001. This SAIB emphasizes the importance of compliance with Piper service information.

Note; the information provided below is for reference only. See the latest version of the Piper service information for current information. Also, this SAIB does not address PA-46-310P and PA-46-350P aircraft modified by STC ST00541SE, conversion from piston to turboprop propulsion.

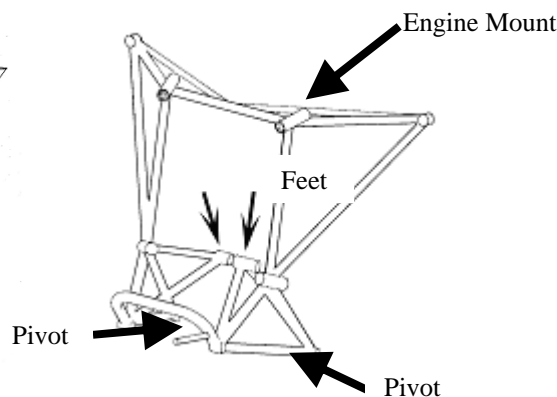
At this time, this airworthiness concern is not an unsafe condition that would warrant AD action under Title 14 of the Code of Federal Aviation Regulations (14 CFR) part 39.

## Background

This SAIB is a result of reported cracks being found in the engine mount, both where the actuator for the nose landing gear attaches, and at the pivot where the NLG trunnion attaches. The picture below shows the general area.



Arrow Shows General Location of  
Potential Engine Mount Cracks



Typical Engine Mount Crack Locations

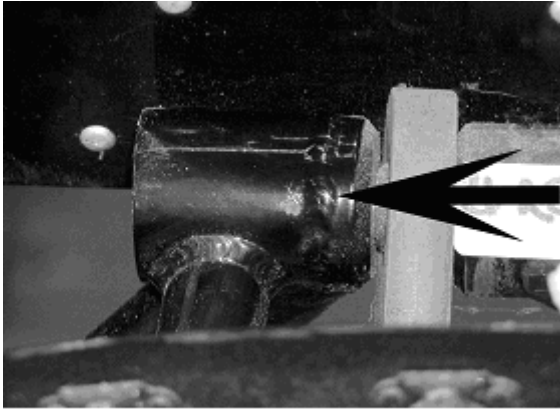
Below are descriptions of the areas where problems occur, what service information is available, and a summary of reported problems.

### LG actuator attachment

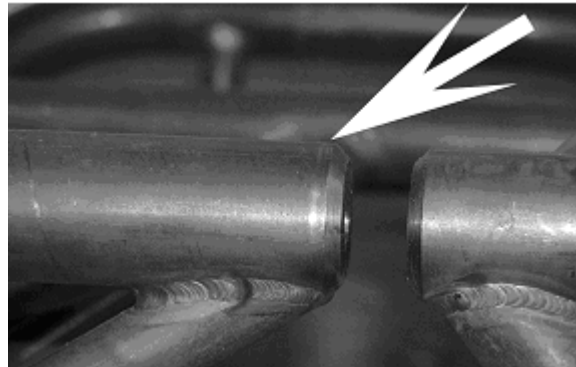
There are two types of cracking to be aware of at the NLG actuator attachment. The first type, and the subject of Piper Service Bulletin (SB) 1103C, is cracking around the circumference of the “foot” (the metal tube where the actuator bolt attaches). Some aircraft have a one-piece machined foot and do not

have this problem. See pictures below (from Piper SB 1103C) showing pictures of both welded and machined configurations.

The “foot” cracks only occur on some early engine mounts where the “foot” is made up of two parts; a metal disk welded to a metal tube. The cracks have been found in the welded area between the disk and tube.



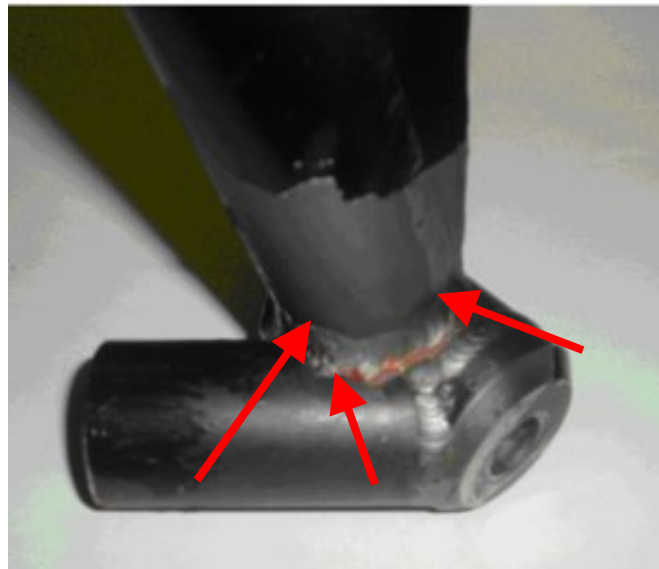
Old Engine Mount  
Weld Indicates Two (2) Piece Foot



New Engine Mount  
Note One Piece Machined Foot

#### Actuator Cluster

The second type of cracking is in the **actuator cluster weld**, which attaches the “foot” to the engine mount tubing and is the subject of service bulletin 1154C. This second type of cracking occurs in the welded joints where the foot attaches to the engine mount tubes (cluster weld). See picture below.



Cracks around Tube Cluster  
(Note crack extends into tube)

#### NLG trunnion attachment (pivot)

Piper Service Bulletin 1154C and Service Letter 1001 both address cracking in the engine mount where the NLG trunnion attaches. See the appropriate bulletin for your aircraft.

## Piper Service Information

Below is a list of current Piper Service information and applicability to specific model and serial numbers.

Service Information	Date	Model(s)/Serial Numbers	Description
Service Letter 1001	12/09/1987	PA-46-310P: 46-8408001 - 46-8608067 4608001-4608094	Engine mount cracks at NLG trunnion attachment point PA-46-310P Malibu:
Service Bulletin 1103C	11/25/2003	PA-46-310P: 46-8408001 – 46-8408087 46-8508001 – 46-8508109 46-8608001 – 46-8607067 4608001-4608140 PA-46-350P: 4622003-4622200 4636001-4636319 PA-46-500TP: 4697001-4697071 4697075-4697096 4697100 4697101 4697103-4697112 4697114 4697116	SB 1103 addresses engine mount cracks at NLG actuator attachment feet. SB 1103A supersedes SB 1103 in its entirety. Initial Inspection time and criteria added. Additionally, total time to accomplish engine mount replacement revised, aircraft warranty coverage expanded and revised aircraft effectivity. SB 1103B adds the requirement of inspecting the nose gear actuator mounting bolt to ensure sufficient thread engagement with the lock nut after the engine mount has been replaced. This inspection and bolt replacement is only required if the engine mount was found cracked and is being replaced or has been replaced with the engine mounts listed in Table 1 for your aircraft. SB 1103C removes the PA-46-500TP from the models affected (now covered under SB 1154C) and eliminates factory participation.
Service Bulletin 1154C	01/03/2008	PA-46-500TP: 4697001-4697240 4697242-4697244	SB 1154 addresses engine mount cracks at NLG actuator attachment feet (where feet are welded to tubes) and at NLG pivot (trunnion attachment). Replace with existing type engine mount (P/N 102460-002). SB 1154A provides a new engine mount, when installed will relieve the repetitive inspection of the engine mount. SB 1154B shortens the repetitive inspection requirement for the engine mount from 100 hours to 50 hours and deleted previous references to “New” Piper. SB 1154C Add timeline for engine mount replacement and warranty information.

## Service Difficulty and Accident Incident Data

Forty -nine reports of damaged engine mounts and/or collapsed nose landing gear were identified as of late 2007. These reports came from the National Transportation Safety Board’s accident database and the Federal Aviation Administration’s Service Difficulty and Accident-Incident databases.

Of these, 12 appeared to be associated with damage in the area of the NLG actuator attachment and 9 in the area of the trunnion pivot. Twenty-four contained insufficient information to determine any relationship to this SAIB, and the remainder did not apply.

## Engine Mount Part Numbers

Model	S/N Range	P/N Mount		Comments
		Original	New	
PA-46-310P	All	84010-002	84010-002	See Note (1)
PA-46-350P	4622001-4622189	89137-02	89137-041	See Note (2)
	4622190 and up	89137-041	89137-041	
PA-46-500TP		102460-002	102460-036	See Note (3)
PA-46R-350T		N/A	N/A	

(1) 84010-002 engine mounts may have either machined or welded feet. Visual verification is required.

(2) 89137-041 engine mounts may have either machined or welded feet. Visual verification is required.

(3) -036 may be identified by a one-piece machined NLG actuator attachment. The -002 has separate tubular feet.

### **Recommendation**

After reviewing the above data, we recommend that you **inspect the engine mount where the nose landing gear trunnion and actuator attach**. You should perform this inspection following the appropriate Piper service information SL 1001, SB 1103C, and/or SB 1154C, as appropriate, for the model and serial number of your aircraft and the configuration of your engine mount

### **For Further Information Contact**

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