



FAA

Airworthiness Concern Sheet

Date: January 31, 2011	
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	Reason for Airworthiness Concern: Stress Corrosion Cracking of Stabilator Horn Fitting

FAA Description of Airworthiness Concern

The FAA is aware of in-service stress corrosion cracking in the stabilator horn for the PA-24 series aircraft. This condition, if undetected, could result in a potential safety of flight hazard such as loss of pitch control. This issue has come to light during inspection and replacement of the stabilator torque tubes. Reference Special Airworthiness Information Bulletin (SAIB) CE-04-88 issued in 2004, and Piper Service Bulletin (SB) 1160 issued in 2005.

A metallurgy report from National Institute for Aviation Research (NIAR) concluded the root cause to be stress corrosion cracking. An informal survey of PA-24, PA-30, and PA-39 operators by the International Comanche Society (ICS) has provided excellent data beyond that reported in Service Difficulty Reports (SDRs) and Malfunction/Defect Reports (MDRs). There were fifteen (15) positive findings, all on single-engine Comanches. There have currently been no reported in-flight failures related to this problem.

Piper has issued SB 1189 to replace and /or repetitively inspect the horns on all single (PA-24) and twin (PA-30, PA-39) Comanches. Stabilator torque tubes must be replaced when a new Piper horn is installed.

Request for Information (Proposed Alternate Inspection/Repair Procedures, Cost Impact, etc.):

The FAA is soliciting additional information from Associations and Type Clubs in accordance with the Small Airplane Directorate AD Manual Supplement. Any information such as service problems, proposed alternate inspection/repair procedures, cost impact, etc. should be returned in writing to the FAA (address listed above). All comments or replies need to be as detailed as possible and include specific examples to illustrate the comments/concerns.

This Airworthiness Concern Sheet (ACS) is intended as a means for FAA Aviation Safety Engineers to coordinate airworthiness concerns with aircraft owner/operators through associations and type clubs. At this time, the FAA has not made a determination on what type of corrective action (if any) should be taken. The resolution of this airworthiness concern could involve an AD action or an SAIB, or the FAA could determine that no action is needed at this time. The initial Risk Assessment for this concern indicates that an Airworthiness Directive would be considered. The FAA's final determination will depend in part on the information received in response to this Airworthiness Concern Sheet.

The FAA endorses dissemination of this technical information to all manufacturers and requests association and type club comments.

Attachments:

- Piper SBs 1160 and 1189 available at <http://www.piper.com/pages/Publications.cfm>
- SAIB CE-04-88 available at <http://rgl.faa.gov>
- Risk Assessment
- Contact List

For Further Information Contact:

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Attachments: *SDR(s) *A/IDS *SL(s) *SAIB *FAASR/*NTSBSR *AD *AMOC *RA

Notification: FAA *AOPA *EAA Type Club *TC Holder Other: Repair Station groups

Response Requested 03/04/2011: Emergency (10 days) Alert (30 days) Information (90 days)

*Service Difficulty Reports (SDRs); Accident/Incident Data System (A/IDS); Service Letter (SL); Special Airworthiness Information Bulletin (SAIB); Federal Aviation Administration (FAA)/National Transportation Safety Board (NTSB) Safety Recommendation (FAASR/NTSBSR); Airworthiness Directive (AD); Alternate Method of Compliance (AMOC); Risk Assessment (RA); Aircraft Owners & Pilots Association (AOPA); Experimental Aircraft Association (EAA); Type Certificate (TC)