



SUBJ: Wings - Piper PA-28, PA-32, PA-34, and PA-44 Corrosion on Flap Hinges, Brackets, and Ribs **SAIB: CE-11-10**
Date: January 5, 2011

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) alerts you, owners and operators of **all Piper Aircraft, Inc. PA-28, PA-32, PA-34, and PA-44 models**, of potential corrosion on the flap hinge and flap ribs. This also provides our recommendation to focus on the aircraft service manual (SM) as mitigating action.

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

Background

Aircraft may develop corrosion during their lifetime. Some of the variables involved in the probability of corrosion development are:

- potential increases with calendar time / age
- potential increases with incompatible materials (e.g., aluminum and steel)
- potential increases in certain environments (e.g., high moisture or salt water)
- potential decreases with adequate protective coatings (e.g., zinc chromate primer)
- potential decreases with adequate inspection

This information is presented in response to service data showing corrosion on the flap hinge and flap ribs of Piper PA-28 and PA-34 aircraft. Affected part numbers are 62324-xx (hinge), 62328-xx (rib), 62323-00 and 65899-00 (brackets). See Figures 1 and 2 below as examples. There were nineteen (19) occurrences found during routine maintenance over a 12-year period, with an average in-service time of 3,200 hours. There is one related major flap failure incident from 2002 that resulted in no injuries or fatalities. Note: The steel brackets and aluminum ribs are common to all PA-28, PA-32, PA-34, and PA-44 aircraft.

Service manuals or progressive inspection manuals for the PA-28, PA-32, PA-34, and PA-44 provide specific instructions targeting the problem area. Here is a typical excerpt from the manual:

For airplanes with wing flap(s) which have accumulated ten (10) years time-in-service, conduct the following special inspection each 200 hours: Inspect the interior of the wing flap for evidence of dissimilar metal corrosion where aluminum sheet metal is in contact with steel flap brackets. Use a bore scope or other suitable tool. Installation of a new wing flap will relieve this inspection requirement until such time as the replacement wing flap reaches ten (10) years time-in-service.



Figure 1



Figure 2

Recommendations

The FAA recommends that owners and operators increase their focus on the inspections provided in Piper’s service manuals or progressive inspection manuals for the PA-28, PA-32, PA-34, and PA-44 related to the flap brackets, hinges, and ribs. We strongly recommend increased detail inspection for those aircraft at higher risk due to age, environment, lack of protective coatings, etc., discussed above.

If damage is found, a Malfunction / Defect Report or Service Difficulty Report (SDR) should be filed. The SDR system is available at <http://av-info.faa.gov/sdrx/>. There are currently no established allowable limits on the subject parts so repair or replacement will be necessary if damage is found.

For Further Information Contact

Gregory K. (“Keith”) Noles, Aerospace Engineer, Atlanta ACO, 1701 Columbia Ave., College Park, GA 30337; phone: (404) 474-5551; fax: (404) 474-5606; email: gregory.noles@faa.gov

For Related Service Information Contact

Piper Aircraft Inc., 2926 Piper Drive, Vero Beach, Florida, 32960; website: <http://www.piper.com/>