



AIRWORTHINESS BULLETIN

AWB 57-017 Issue 1 – 9 July 2020

Piper PA-28 and PA-32 Wing Spar Fatigue

1. Effectivity

Piper Models PA-28-151, PA-28-181, PA-28-235, PA-28R-180, PA-28R-200, PA28R-201T, PA-28RT-201, PA-28RT-201T, PA-32-260, PA-32-300, PA-32R-300, PA-32RT-300, PA-32RT-300T All Serial Numbers.

PA-28R-201 (All serial numbers except 2844029, 2844030, 2844081, 2844125, 2844136, 2844147 through 2844151, 28R-7737078, 28R-7737142, 28R-7837108, 28R-7837125 and 28R-7837257).

When an airplane has either accumulated 5,000 or more hours TIS; has had either main wing spar replaced with a serviceable main wing spar (more than zero hours TIS); or has missing and/or incomplete maintenance records.

2. Purpose

To promulgate information on a reported structural failure of a wing lower spar cap.

To advise of an impending FAA AD and the SNPRM FAA-2018-1046 comment closure date.

Note 1: A notice of proposed rulemaking (**NPRM**) is a public notice that is issued under US law when the FAA wishes to add, remove, or change a rule or regulation in this case an FAA airworthiness directive as part of the rulemaking process. A supplemental notice of proposed rulemaking (**SNPRM**) is used by the FAA if additional public consultation is required if the proposed regulation is changed.

3. Background

In December 2018 a wing separated from a Piper PA-28R-201 operated at a US flight school due to fatigue cracking of the left wing lower main spar cap (Figure 1.), two pilots were fatally injured. The right wing from the wreckage showed similar cracks in the lower spar attach outer bolts (see Figure 2). A further 16 aircraft from 4 other flight schools were inspected and one was found to be cracked in the same location. Other failures have occurred in the past on similar models, and in a similar location. These areas are not easily inspected during existing routine maintenance.

Piper have released Service Bulletin No.1345 to inspect for cracking in the wing lower spar cap outer bolts (2 bolts) on each wing. The service bulletin



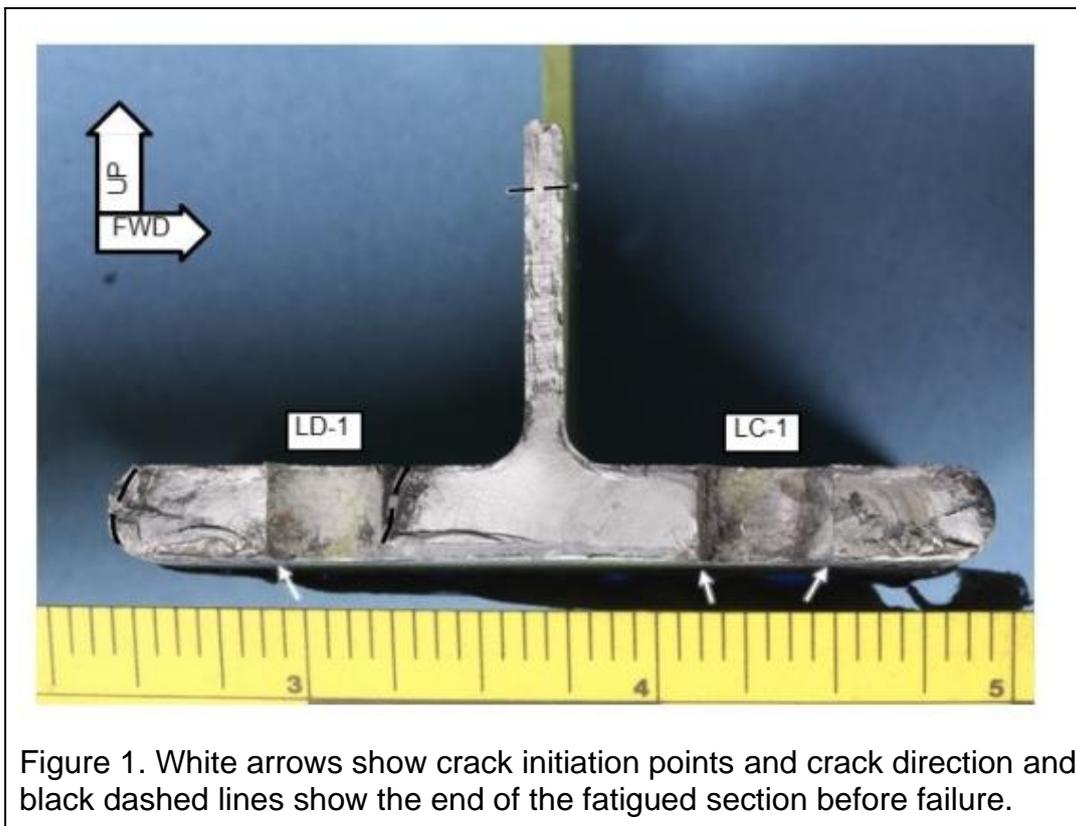
has criteria for carrying out the bolt hole eddy current procedure. The effectivity has been modified by the FAA in the SNPRM due to similarity of design features in other Piper models. This expanded effectivity is shown above in section 1.

The FAA actions included an initial NPRM that would inspect the wing spar failure location using a Bolt Hole Eddy Current Method on a range of models believed to be affected. Following feedback from the initial NPRM and after the NTSB investigation (ERA18FA120) had concluded the FAA modified the effectivity and released a Supplemental NPRM. Closure date for comments on this SNPRM is 20 JULY 2020.

CASA encourage owners and operators to submit a formal comment with any questions and feedback on the SNPRM to the FAA prior to the 20 JULY 2020 closure date as it is likely an AD will soon be released.

Comments on the SNPRM can be submitted using the following weblink;

<https://www.federalregister.gov/documents/2020/06/03/2020-11343/airworthiness-directives-piper-aircraft-inc-airplanes>



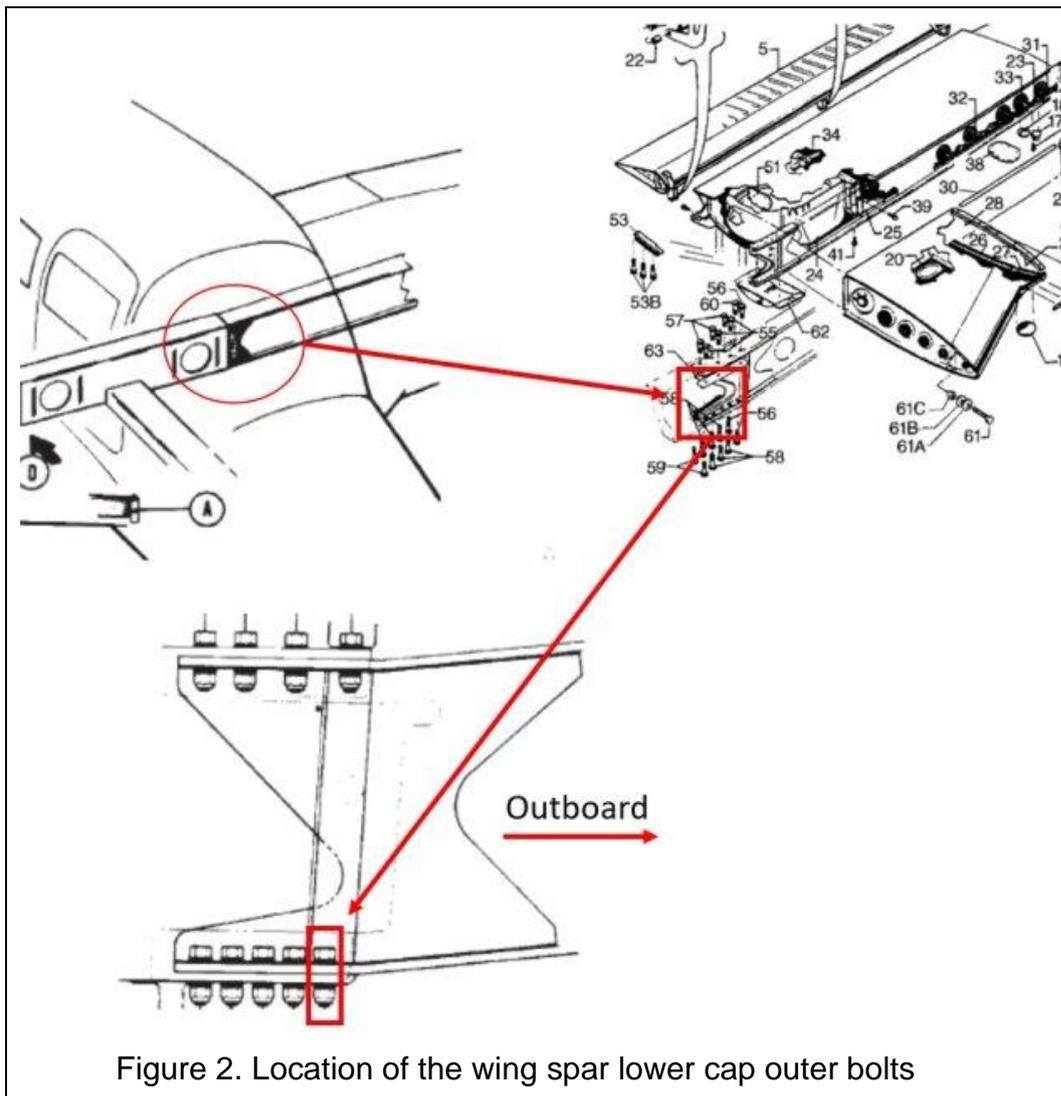


Figure 2. Location of the wing spar lower cap outer bolts

4. Recommendations

CASA recommends if meeting the criteria in Section 1 Effectivity, to review the airplane maintenance records to determine the factored service hours in accordance with the formula in the proposed FAA AD paragraph (h)(2).

On accumulating 5000 factored service hours remove the two lower outboard main wing spar bolts (2 bolts on each wing) and inspect all layers inside bolt holes for cracks using bolt hole eddy current inspection method. Replace any main wing spar if a crack is detected with a new spar (zero hours TIS). Install new wing attach bolts. Reference Piper SB 1345.

Note 2: Removal of wing bolts should be carried out with care as damage may occur if bolts are forced out.

For aircraft already in excess of these factored hours carry out the inspection at the next maintenance opportunity but not greater than 100 hours TIS.



Note 3: Wing removal is not required however CASA note at the time of AWB issue all reported cracks have been detected in wings that have been removed from the aircraft therefore care should be taken during the in-situ inspection.

The NTSB report stated that the cracked wing from one flight school was initially cleared however on wing removal and inspection using the bolt hole and surface scan methods the wing was found to be cracked.

5. Reporting

Any defects found should be reported to CASA via the Defect Reporting System and to Piper.

Comments on the proposed AD should be made direct to the FAA Atlanta office as detailed in the SNPRM. Comments close 20 JULY 2020.

CASA continue to monitor Piper wing spar cracks through service difficulty reporting for the purpose of updating the appropriate airworthiness response to this issue.

6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link email address:

AirworthinessBulletin@casa.gov.au

or in writing, to:

Airworthiness and Engineering Standards Branch
Standards Division
Civil Aviation Safety Authority
GPO Box 2005, Canberra, ACT, 2601