Civil Aviation Authority

SAFETY NOTICE

Number: SN–2024/002

Version 2 Issued: 3 June 2024

Piper PA-28 and PA-32 Undercarriage Inspections

This Safety Notice contains recommendations regarding operational safety.

Recipients must ensure that this Notice is copied to all members of their staff who need to take appropriate action or who may have an interest in the information (including any 'in-house' or contracted maintenance organisations and relevant outside contractors).

Applicability:	
Aerodromes:	Not primarily affected
Air Traffic:	Not primarily affected
Airspace:	Not primarily affected
Airworthiness:	Part 145, Part CAO/CAMO Organisations
Flight Operations:	Operators of General Aviation Aircraft
Licensed/Unlicensed Personnel:	All Engineers

1 Introduction

1.1 The purpose of this Safety Notice (SN) is to recommend that owners, operators and maintainers of Piper PA-28 and PA-32 aircraft (all models) carry out inspections of the nose and main undercarriage assemblies at the next routine maintenance inspection, following two recent accidents involving two different PA-28 aircraft.

1.2 The first incident involved the failure of both upper torque link attachment lugs on the main landing gear cylinder due to fatigue cracking (Figure 2). The second incident involved the nose wheel fork assembly fracturing because of fatigue cracks from corroded bolt holes in the fork assembly. Following both accidents, the undercarriage components were removed from the aircraft and were subject to an AAIB investigation (AAIB reports AAIB-29130 and AAIB-29086 refers). These types of failures can remain undetected until the aircraft touches the ground during landing, leading to the collapse of the landing gear, consequential airframe damage and loss of control. These events could carry the risk of injury.

1.3 Where possible owners, operators, and maintainers should look to implement the recommendations outlined in this SN to mitigate the risk of landing gear failures on PA-28 and PA-32 aircraft as well as preserving the longevity of these aircraft.

2 Recommended Actions to be Taken.

2.1 With regards to the nose wheel fork assembly, it is recommended at the next routine maintenance inspection:

- In accordance with the Aircraft Maintenance Manual (AMM) remove the nose wheel fork assembly fork attachment block (Appendix 1 Figure 1).

- Visually inspect the area for corrosion, signs of wear and cracking around the attachment block bolt holes. Consideration should also be given for inspecting the area by applying a liquid penetrant dye to detect any signs of cracking.

- If no defects are found, clean and re-protect the area as required in accordance with the AMM.

- If defects are found, rectification is to be carried out in accordance with the AMM. If cracking is found as noted in Appendix 1 Figure 1, the CAA should be notified using the following email address - certification.gau@caa.co.uk.

- It is recommended that the above inspection or similar is incorporated into the aircraft maintenance programme.

- It is also noted, The Australian Civil Aviation Authority (CASA) have also provided an Airworthiness Bulletin AWB 32-019 Issue 1 with regards to nose landing gear fork failures.

2.2 With regards to the main landing gear assembly, it is recommended:

- To verify compliance with Piper Service Bulletin SB1131A (if applicable) and to incorporate the SB into the aircraft maintenance programme.

- At the next routine maintenance inspection, to visually inspect the areas highlighted in Appendix 1 Figures 2 and 3 for corrosion, signs of general wear as well as cracking around the attachment upper and lower torque link attachment lugs in accordance with the AMM.

- If defects are found, rectification is to be carried out in accordance with the AMM. If cracking is found as noted in Appendix 1 Figure 2, the CAA should be notified using the following email address - certification.gau@caa.co.uk.

- It is also important to note that fatigue cracking of the torque link attachment lugs has been known to occur on the cast main landing gear cylinders fitted to PA-28 and PA-32 aircraft manufactured between 1961 and 1977. Aircraft manufactured since 1977 were fitted with a forged cylinder which can be used as a replacement for the cast cylinders.

3 Queries

3.1 Any queries or requests for further guidance as a result of this communication should be addressed to:

GA Unit, Safety & Airspace Regulation Group
Civil Aviation Authority Aviation House
Gatwick Airport South
West Sussex
RH6 0YR
E-mail: **GA@caa.co.uk**

4 Cancellation

4.1 This Safety Notice will remain in force until further notice.

Appendix 1

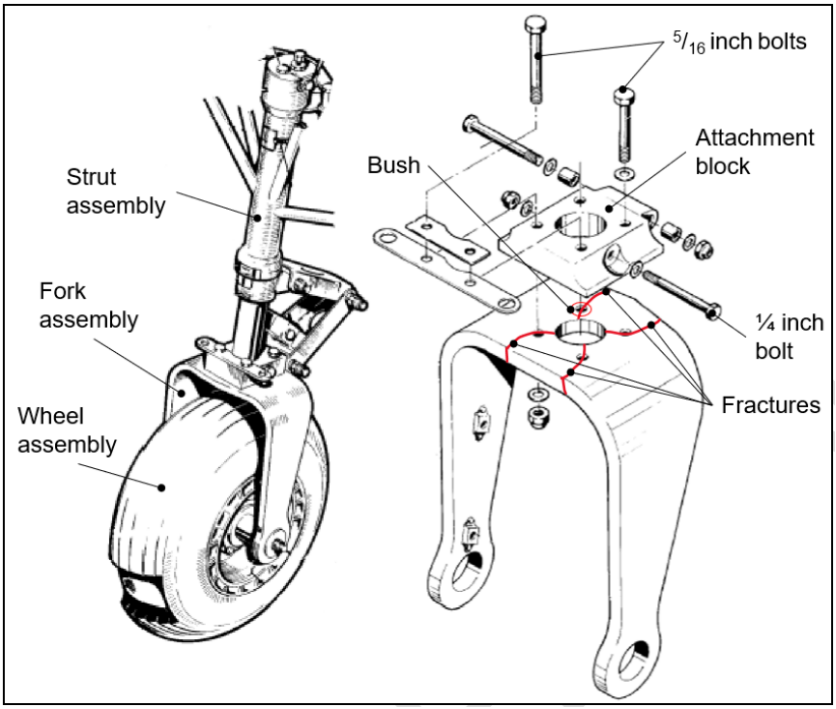

Figure 1 Nose Wheel Fork Assembly

Figure 2 Lower Main Landing Gear Cylinder

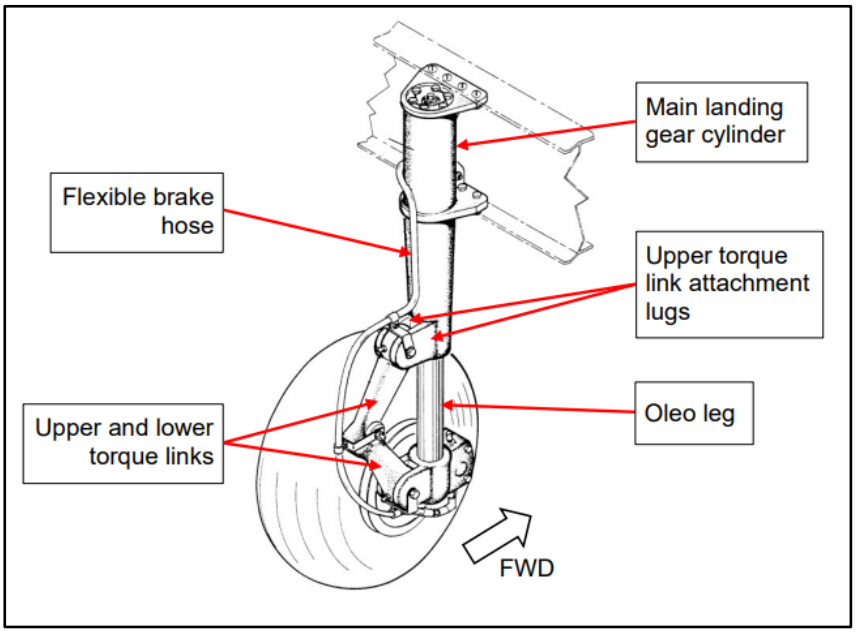

Figure 3 Main Landing Gear Leg Assembly