

AAIB Bulletin No: 11/95

Ref: EW/G95/08/09

Category: 1.3

Aircraft Type and Registration: Piper PA-38-112 Tomahawk, G-BOLF

No & Type of Engines: 1 Lycoming O-235-L2C piston engine

Year of Manufacture: 1979

Date & Time (UTC): 7 August 1995 at 1120 hrs

Location: Teesside Airport, Co Durham

Type of Flight: Private (Training)

Persons on Board: Crew - 2 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Damage to propeller, engine cowling and nose landing gear

Commander's Licence: Basic Commercial Pilot's Licence

Commander's Age: 27 years

Commander's Flying Experience: 680 hours (of which 111 were on type)
Last 90 days - 197 hours
Last 28 days - 76 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and telephone enquiries by the AAIB

The aircraft was engaged on a dual instructional detail prior to a third solo. After three satisfactory touch-and-goes, the fourth landing was also satisfactory but, as the nosewheel made contact a violent shimmy developed. The instructor reports that the student immediately raised the nose but there was a loud bang and the nose leg piston detached from the cylinder, allowing the propeller and cowling to strike the runway.

The aircraft was stopped and after shutdown the crew evacuated without injury. There was no fire but the airport fire services attended promptly and organised its removal from the runway. Subsequent examination showed that the torque link apex bolt had broken and the instructor believes that there may have been an externally undetectable amount of free play in the bolt or the bushes which allowed the shimmy to develop. The PA-38 does not have a shimmy damper and condition of the torque link attachments is crucial in preventing nosewheel shimmy. Unfortunately, the bolt was not recovered to enable a check of its fit in the bushes to be carried out.

The maintenance organisation has stated that, after the accident, several instructors reported that the aircraft had been prone to nosewheel shimmy.