

ACCIDENT

Aircraft Type and Registration:	Tecnam P2008-JC, G-TSFC	
No & Type of Engines:	1 Rotax 912-S2 piston engine	
Year of Manufacture:	2015 (Serial no: 1047)	
Date & Time (UTC):	22 March 2021 at 1505 hrs	
Location:	Stapleford Aerodrome, Essex	
Type of Flight:	Training	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Right main landing gear collapsed	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	45 years	
Commander's Flying Experience:	481 hours (of which 6 were on type) Last 90 days - 6 hours Last 28 days - 6 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Whilst taxiing after a normal landing, the right main landing gear collapsed due to a failed attachment bolt. Examination of the bolt determined that the failure was due to a fatigue crack, most likely initiated by wear and damage to the bolt's surface protection.

The operator's maintenance organisation had recently transitioned the aircraft from a generic maintenance schedule to the maintenance schedule specified by the manufacturer. The new schedule includes a specific check on the condition of these attachment bolts annually or every 100 hours. In addition, the maintenance organisation has stated that it intends to replace these bolts every 200 to 300 hours.

Aircraft information

The Tecnam P2008 is a single engine, two-seat, high wing aircraft of conventional layout with tricycle landing gear. The main landing gear legs are of a flat spring type. They are attached to the fuselage by a saddle clamp and two bolts at the outboard edge of the fuselage and a single bolt towards the centre of the fuselage, (Figure 1).

Investigation

After a normal landing the right main landing gear collapsed as the aircraft taxied clear of the runway. Examination identified that the bolt securing the inboard end of the landing gear leg had failed in fatigue, (Figures 1 and 2). Wear and damage to the surface protection

was likely to be the initiation of the fatigue crack. The wear indicated that the bolt had been moving in its bushings.

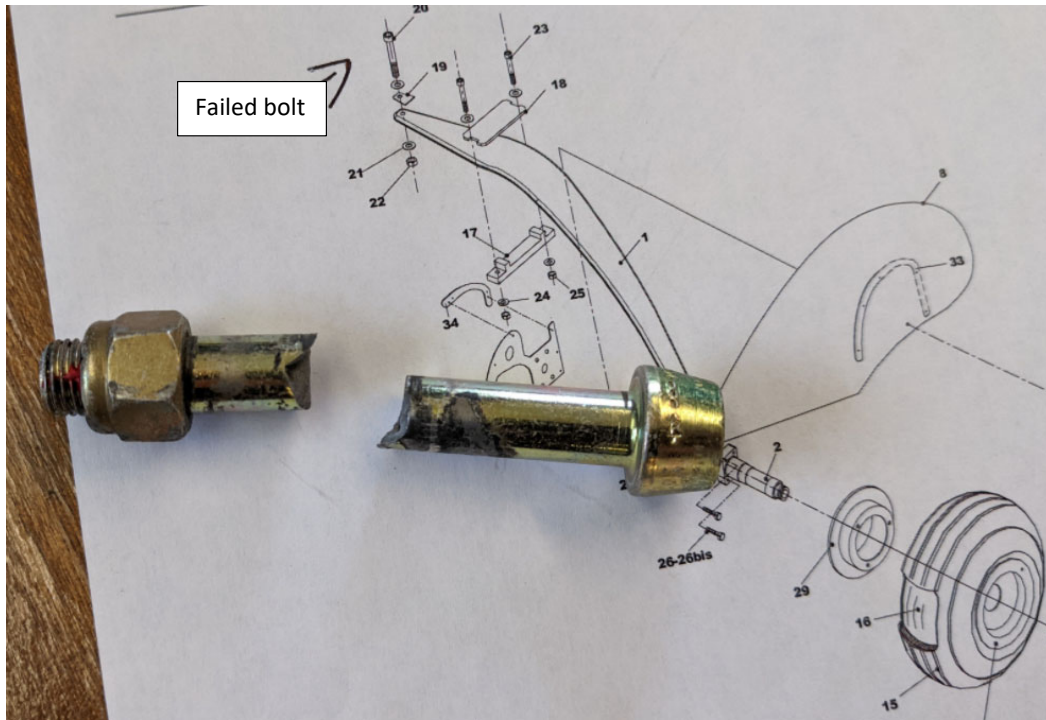


Figure 1
Failed bolt and diagram showing its location

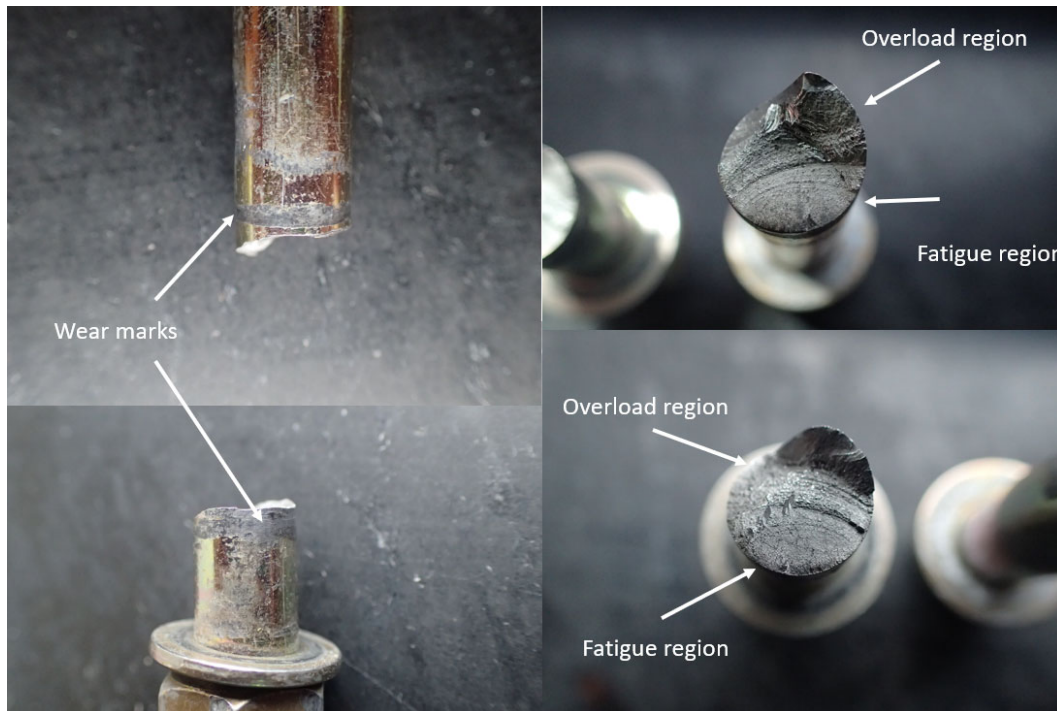


Figure 2
Detail showing wear marks and fracture surfaces of the failed bolt

The aircraft had been maintained using the LAMP (Light Aircraft Maintenance Programme). LAMP was a generic programme applicable to all light aircraft and it did not specifically require a detailed inspection of these bolts. The LAMP is being phased out in favour of Self Declared Maintenance Programmes. Shortly before the accident, the aircraft had been transitioned to the maintenance schedule specified by the aircraft manufacturer. This schedule includes the following specific inspection to determine the condition of these attachment bolts:

‘Annually or every 100 hours;

Inspect nose and main gear attachments, bolts and bushings for condition and security. Check especially for cracks, corrosion, and damaged surface protection. Inspect for looseness, condition and security of mounting points.’

The operator’s maintenance organisation has stated that, additionally, they will check the torque of the bolts every 50 hours and intend to replace them every 200 to 300 hours.

These changes should allow any degradation of these attachment bolts to be identified before failure and therefore prevent recurrence.