

ACCIDENT

Aircraft Type and Registration:	Lancair 320, G-PJMT	
No & Type of Engines:	1 Lycoming IO-320-D1B piston engine	
Year of Manufacture:	1998 (Serial no: PFA 191-12348)	
Date & Time (UTC):	7 October 2022 at 1025 hrs	
Location:	Little Snoring Airfield, Norfolk	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Shock loading to engine, front caster wheel detached, destroyed propeller, scratching to starboard flap and wingtip	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	45 years	
Commander's Flying Experience:	2,964 hours (of which 17 were on type) Last 90 days - 30 hours Last 28 days - 3 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquires made by the AAIB	

Synopsis

During pre-landing checks the pilot observed that the right main landing gear had not locked down. Despite the use of emergency procedures, it remained retracted, and the pilot landed the aircraft on the nose and left landing gear. As the aircraft slowed, it slewed off the runway and sustained damage to the wing tip, propeller and nose landing gear. The pilot and passenger were uninjured. Examination of the aircraft found the right landing gear shock absorber had discharged and prevented the strut from extending as its wheel left the ground. In this condition the tyre caught on the edge of the wheel bay and prevented the gear from lowering.

History of the flight

The aircraft was completing an uneventful flight and was being configured for landing during approach to Little Snoring Airfield. The pilot selected landing gear down and during his prelanding checks saw that only two of the three green down-and-locked indicator lights were illuminated. The right main landing gear was not indicating down and locked. The in-built filament test confirmed that it was not just an indication problem, so the pilot recycled the landing gear up and down. As before, the right main landing gear did not indicate down and locked. He requested a visual check via his radio to a nearby aircraft which reported that the right landing gear had not lowered. The pilot attempted several high energy

manoeuvres to free the gear but to no avail. He also used the emergency lowering feature to release pressure in the hydraulic system and repeated the high energy manoeuvres. The right main gear did not move throughout.

He briefed his passenger on the situation and that he would be carrying out a landing with the left main and nose landing gear locked down only. He made a stable approach and landed and used the right aileron to hold the wing off the ground during the landing rollout and maintained directional control using differential braking. Eventually, as the aircraft slowed, it slewed off the paved surface. The nose gear collapsed as it entered a rut at the edge of a field alongside (Figure 1). He made the aircraft safe and vacated the cockpit. The pilot and passenger were uninjured.



Figure 1

Aircraft accident site

Aircraft examination and cause

The aircraft was fitted with tricycle landing gear with hydraulic extension and retraction. Fairings are attached to the landing gear struts to ensure an aerodynamic surface on the underside of the wing when the gear is retracted. The main landing gear lifts and folds inwards towards the fuselage. Figure 2 shows the general arrangement of the main landing gear assembly.

During the lifting process as the aircraft was recovered, the right main gear lowered of its own accord. Later examination by the aircraft maintenance organisation found the right main air-shock absorber was discharged. This had resulted in the landing gear strut articulated link not fully extending as the weight came off the wheel after takeoff. In this position the tyre had caught on the edge of the wheel well and prevented the gear from lowering (Figure 3). With the tyre impinging on the edge of the wheel well, the hydraulic actuator does not have a mechanical advantage and could not overcome the restriction.



Figure 2
Main landing gear general arrangement

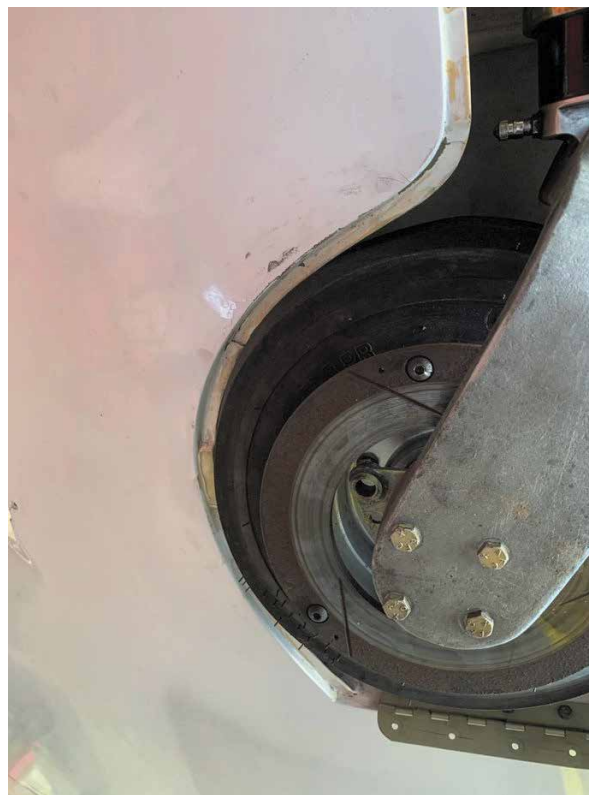


Figure 3
Landing gear tyre and wheel well impingement (fairings removed)

Discussion

Further examination found the left main landing gear shock absorber was also partially discharged, although to a lesser extent. When the pilot did his pre-flight checks the discharged state of both shock absorbers caused minimal difference between the height above ground of each wing tip, so went unnoticed. The cause of the discharged condition of the shock absorbers is not known but the pilot is of the opinion they gradually discharged over time and therefore had not drawn attention to the problem.