

ACCIDENT

Aircraft Type and Registration:	Piper PA-38-112 Tomahawk, G-OTFT	
No & Type of Engines:	1 Lycoming O-235-L2C piston engine	
Year of Manufacture:	1978	
Date & Time (UTC):	8 April 2011 at 1043 hrs	
Location:	RAF Henlow, Bedfordshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - 1 (Serious)
Nature of Damage:	Engine possibly shock-loaded	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	37 years	
Commander's Flying Experience:	144 hours (of which 118 were on type) Last 90 days - 2 hours Last 28 days - 2 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

Synopsis

The passenger's arm was struck by the propeller when she vacated the cockpit and stepped off the leading edge of the wing. The aircraft was stationary with its engine at idle power¹.

History of the flight

The aircraft was stationary with the engine running at idle power when the passenger got out of the cockpit and onto the right wing intending to collect a headset that had been left in the control tower. She closed the door, moved towards the leading edge of the wing and stepped

Footnote

¹ Idle power is the power produced by the engine when the throttle control is in the IDLE position, which for a stationary aircraft results in a lower propeller speed than if the throttle control were advanced.

off onto the grass manoeuvring area. As she moved off the leading edge, her arm was struck by the propeller.

Information from the pilot

During her initial inspection of the aircraft the pilot briefed the passenger on how to enter and exit the aircraft. When she had completed her inspection, she taxied the aircraft to the refuelling location and came to a halt near the fuel bowser pointing towards the control tower beyond. After she shut down the engine, she went to the control tower intending to complete her pre-flight preparation and collect a headset for the passenger. When she returned she gave a pre-flight briefing to the passenger before starting the engine.

After starting the engine the pilot noticed that the passenger did not have a headset on and realised that it had been left in the control tower. She instructed the passenger to get the headset from the tower and “re-stated how to exit the aircraft and the route to follow”. The pilot had been told during training that, in order to protect the engine, she should not shut down immediately after start and so, instead, she reduced the power to idle before the passenger stepped onto the wing. As the passenger moved towards the front of the aircraft, the pilot knocked on the windscreen and pointed towards the rear of the aircraft and believed that her gesture had been seen. She shut down the engine when she saw the passenger step down from the wing.

Information from the passenger

This was to have been the passenger’s first flight in a light aircraft and, before boarding from behind the trailing edge of the wing, the pilot told her to step only on the black walkway that ran along the inner section of the wing. This was the only briefing she received from the pilot apart from being told to fasten her seat belt when the pilot returned from the control tower.

When asked to get a headset, the passenger was not told how to exit the aircraft and the route to follow to the control tower, nor that she was to walk around the rear of the aircraft. When she stepped out onto the wing and closed the door, she saw the control tower ahead of the aircraft and walked towards it ensuring she remained on the black walkway. She did not believe that the pilot tried to gain her attention as she walked forwards. She stepped off the front of the wing and did not notice the propeller.

Air Navigation Order

Article 88 of the Air Navigation Order (ANO) states that the commander of an aircraft must take reasonable steps to ensure that passengers are made aware of the position

and method of use of the safety equipment on the aircraft. The Article does not specify additional briefing requirements with respect to specific types or classes of aircraft, such as single engine piston aircraft.

Published guidance

Safety Sense Leaflet 2 - ‘*Care of Passengers*’, published by the CAA, provides advice to aircraft captains on how to fulfil their responsibilities for the safety and well-being of their passengers. The leaflet advises pilots to:

- a) Point out that propellers and helicopter rotors are extremely hazardous and should be avoided at all times, even when stationary. Rotating propellers...may be hard to see, especially from the side or at night. The hazard may not be noticed if nearby aircraft have engines running.*
- b) Always shut down the engine(s) when passengers are boarding or leaving.....unless they are escorted by properly briefed helpers.*
- c) Advise passengers that when going to and from a propeller-driven aeroplane, they must approach/depart from behind the wing.*
- d) Ensure that even if the engine is stopped passengers do not step forward off the wing leading edge towards the propeller.’*

Discussion

The differences between the two accounts of events were not reconciled by the investigation. Nevertheless, the accident demonstrated the danger represented by propellers, highlighted the importance of pre-flight safety briefings and reinforced the points from Safety Sense Leaflet 2, any one of which had the potential to prevent this accident.