

ACCIDENT

Aircraft Type and Registration:	Taylor Titch, G-BARN	
No & Type of Engines:	1 Continental Motors Corp C90-12F piston engine	
Year of Manufacture:	1986 (Serial no: PFA 060-11136)	
Date & Time (UTC):	14 October 2017 at 1400 hrs	
Location:	Ripe-Kittyhawk Farm Airfield, Sussex	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Landing gear collapse, ground contact damage to the aircraft underside, lower cowling and propeller	
Commander's Licence:	National Private Pilot's Licence	
Commander's Age:	79 years	
Commander's Flying Experience:	1,027 hours (of which 337 were on type) Last 90 days - 15 hours Last 28 days - 5 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The pilot was landing his aircraft at an airfield which he had flown into on numerous previous occasions and after an apparently normal touchdown, the landing gear collapsed. The aircraft then slid along the ground on its underside for several metres before coming to stop. The pilot made the aircraft safe and vacated the cockpit unaided. The aircraft sustained damage to its underside, lower cowling and propeller. The landing gear collapse was due to breakage of the centre re-enforcing bracket in the landing gear attachment, caused by a failure in a welded joint.

Engineering discussion

The aircraft was built in 1986 by its current owner and had accrued 337 hours and 605 landings. The aircraft is fitted with a non-retractable two-piece spring steel 'blade' undercarriage mounted on a wooden plate in front of the main spar. Three steel re-enforcing brackets transfer the landing loads from the undercarriage through its mounting plate and into the main spar. The brackets are a simple right-angle plate, braced on each side by a web welded in place. The brackets are arranged so that the centre bracket takes a tensile load and the left and right outer brackets take compressive loads during landing. In this case the centre bracket welded joints, which held the side webs in place, failed, allowing

them to open out. With no centre bracing the mounting plate could not sustain the landing loads, resulting in the collapse of the landing gear blades.

An examination of the failed bracket revealed poor penetration of the weld on the side web outer edges, where they attach to the right-angle section of the bracket. The presence of light corrosion on the inner edge faces of the failed joints support this diagnosis.

Cause

The aircraft had accrued 605 landings prior to the landing gear collapse so it is likely that a fatigue process within the weakened welds led to the eventual bracket failure.