

ACCIDENT

Aircraft Type and Registration:	Hummerchute, G-CKTA
No & Type of Engines:	1 Rotax 582 piston engine
Year of Manufacture:	2017/(Serial no: 482)
Date & Time (UTC):	14 April 2018 at 1330 hrs
Location:	Luffenham Aerodrome, Rutland
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - 1 (Minor) Passengers - 1 (Minor)
Nature of Damage:	Rear landing gear axle and propellor damaged
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	48 years
Commander's Flying Experience:	487 hours (of which 470 were on type) Last 90 days - 10 hours Last 28 days - 7 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

On becoming airborne on its maiden flight, the newly assembled powered parachute aircraft pitched steeply nose-up before falling backwards to the ground. A number of the lines securing the canopy to the 'trike' (accommodating the wheels, occupants and engine) were found to be of the wrong length. This caused the canopy to 'fly' in a different longitudinal position and attitude from normal, leading to loss of control of the aircraft.

The aircraft manufacturer has taken the safety actions of improving its quality checks during manufacture and flight testing aircraft prior to releasing them from the factory.

History of the flight

The pilot reported that he carried out a normal takeoff for a newly rigged aircraft of this type. This consisted of an extended taxi during which the canopy inflated and rose above the trike whilst he observed the rigging from the cockpit. After seeing that it appeared to be rigged correctly, he applied full power. The canopy then oscillated from side to side. The pilot retained control, assuming that it had encountered a thermal and continued the takeoff run. Immediately after becoming airborne, the canopy seemed to lose all forward speed whilst the trike continued forward, swinging upwards before falling backwards onto the ground. The impact broke the rear axle and propeller as well as inflicting minor injuries to the two occupants.

Aircraft information

The Hummerchute is a powered parachute, manufactured by Aerochute Pty Industries in Australia.

In flight, the occupants are seated side-by-side on a three-wheeled unit (the trike) suspended beneath the parachute canopy. The trike also accommodates the engine, positioned behind the occupants, driving a pusher propeller. The parachute lines are attached at four points on the structure of the trike behind the occupants. The shape of the parachute when in flight is affected by the layout and lengths of the numerous attachment lines.

The type is imported to the UK from Australia by the pilot involved in this accident. This was the first flight of this example. Following the accident, the pilot became aware that the Permit to Fly issued for the aircraft had expired shortly before the accident. He also became aware that, when valid, the Permit required such a flight to be carried out solo.

Aircraft examination

Following the accident, the parachute rigging was checked and appeared to be correct. The canopy was then compared with another which was known to have flown satisfactorily. It was established that a group of lines (known as D lines) were of similar length to another group (known as C lines). On the reference canopy, the D lines were of a different length from the C lines. It thus became clear that the parachute of the accident aircraft had been incorrectly manufactured.

Effect of manufacturing error

As a consequence of the incorrect lengths of some of the rigging lines, it appears that once airborne the parachute took up a position slightly behind, rather than directly above the trike.

It thus provided a significant braking effect, rather than just a lifting effect on the trike. This upset the longitudinal trim of the combination, leading to a loss of control.

Safety actions

On establishing the nature of the problem, the pilot immediately informed the owner/customer of a Hummerchute he had recently supplied and had inspected at the same time as G-CKTA. He advised the customer not to attempt a flight. The customer confirmed shortly afterwards that the D lines on his parachute were about 8 inches shorter than those on the reference parachute. The parachute manufacturer was contacted and subsequently confirmed that they had identified a batch which had been manufactured with incorrect length D lines. They reported that only two of them had left the factory and both had been supplied to the UK.

The manufacturer has informed the importer that all future parachutes will come with a full factory trim check and will also be check flown prior to shipping to the UK.