

ACCIDENT

Aircraft Type and Registration:	Easy Raider 503(1), G-SRII
No & Type of Engines:	1 Rotax 503-DCDI-2V piston engine
Year of Manufacture:	2001 (Serial no: BMAA/HB/163)
Date & Time (UTC):	12 July 2020 at 1320 hrs
Location:	Near Dunnington, York
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - 1 (None) Passengers - N/A
Nature of Damage:	Engine seized, damage to propeller, landing gear, tail and fuselage
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	53 years
Commander's Flying Experience:	212 hours (of which 116 were on type) Last 90 days - 4 hours Last 28 days - 4 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional enquiries by the AAIB

Synopsis

The aircraft made a successful forced landing in a crop field following an engine seizure and associated loss of engine power. The pilot had inadvertently omitted to add two-stroke oil to the fuel when preparing for the flight and the engine seized due to a lack of sufficient lubrication.

History of the flight

The pilot had planned to fly from Baxby-Hustwaite Airfield, North Yorkshire, where his aircraft was based, to Sturgate Airfield in Lincolnshire, and back again. The Easy Raider is a high-winged, two-seat microlight aircraft powered by a two-stroke Rotax 503 engine. Prior to departing, he prepared two 20 litre jerry cans of Mogas (motor gasoline) by adding a measured dose of two-stroke oil. He used one can to fill the aircraft's wing fuel tanks and secured the other in the aircraft, to be used for the return leg. The outbound flight was uneventful. Prior to departing Sturgate for the return leg, the pilot topped-up the fuel tanks using the jerry can he had brought with him. He did not have a step ladder and so filled the tanks by reaching up from the ground.

Approximately 40 minutes into the return flight, as the aircraft was cruising at 1,800 ft agl, the engine started to run rough and subsequently seized, resulting in a total loss of engine power. The pilot declared a MAYDAY and selected a suitable field in which to land. The

pilot completed a successful forced landing in a crop field and was uninjured, exiting the aircraft without assistance, but the aircraft sustained substantial damage due to the furrowed surface of the field (Figure 1). After landing, he examined the unused fuel in the jerry can and discovered that there was no evidence of the dye he would have expected to see if two-stroke oil had been present in the fuel.



Figure 1
G-SR11 after landing

Pilot's comments

Fuel was not permitted in the hangar where the aircraft was kept, so when preparing the Mogas prior to the flight, the pilot left the jerry cans outside. He measured out the two-stroke oil in the hangar, returning to the fuel cans each time to add the oil. Although each jerry can was a different colour, he subsequently realised that he must have experienced a lapse in concentration while doing this, which resulted in him adding both doses of oil to the first can, and none to the second.

This was the first time the pilot had prepared two identical volumes of fuel in jerry cans. He would normally fuel the aircraft directly from the fuel supply at the airfield and only prepare one jerry can to carry in the aircraft.

The pilot stated that in future he would add the two-stroke oil as he poured the fuel into the aircraft fuel tanks. If he did need to prepare a jerry can in advance, he would take the oil to the fuel cans, rather than measure it out in the hangar.

He also considered that when fuelling the aircraft prior to the return flight, doing so from below meant he did not have the opportunity to see the colour of the fuel and observe that it did not contain any two-stroke dye.

When asked what factors had contributed to the successful outcome of the forced landing, the pilot said that as a microlight pilot he was always aware that an engine failure can occur

at any time, especially with a two-stroke engine. It was therefore his custom to regularly consider potential landing sites and how far he could glide from his present position, as part of his checks throughout a flight.

The pilot's licence had expired the previous autumn and he was unable to renew it for about eight months. Several days before the accident, he had undertaken a General Skills Test (GST) in another aircraft to renew his licence. The next day he flew for approximately one hour in G-SRII at his home airfield to ensure he was current, in anticipation of undertaking a longer flight. In preparation for his GST he had revised the forced landing procedure and associated decision making. He also watched several videos about choosing a suitable field for a forced landing and one relating to field landings for glider pilots.

The pilot considered that the handling qualities of the aircraft, his routine checking for potential landing sites and the preparation undertaken for his recent GST were all factors which contributed to the successful outcome.

Conclusion

The engine seized in flight due to a lack of sufficient lubrication. When preparing for the flight the pilot inadvertently omitted to add two-stroke oil to the aircraft's fuel. The manner in which the fuel was added to the aircraft prevented him from detecting the absence of the two-stroke oil. The pilot completed a successful forced landing because his training and practice enabled him to identify a suitable landing site within the gliding capability of the aircraft.