ACCIDENT

Aircraft Type and Registration:	Europa XS, G-JAGY	
No & Type of Engines:	1 Rotax 914-UL piston engine	
Year of Manufacture:	2000 (Serial no: A094)	
Date & Time (UTC):	4 February 2018 at 1429 hrs	
Location:	Compton Verney, Wellesbourne, Warwickshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - 1 (Minor)	Passengers - N/A
Nature of Damage:	Aircraft extensively damaged	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	61 years	
Commander's Flying Experience:	263 hours (of which 7 were on type) Last 90 days - 9 hours Last 28 days - 0 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

During a local flight from Wellesbourne Mountford airfield the aircraft's engine abruptly stopped and could not be restarted, resulting in a forced landing in a field. The aircraft nosed-over during the forced landing, causing damage to the aircraft and minor injuries to the pilot. An inspection of the aircraft after the accident did not establish the cause of the engine failure.

History of the flight

The pilot was making a local flight from Wellesbourne Mountford airfield to gain experience with the aircraft that he had recently purchased and imported from the USA. There was sufficient fuel for the flight and the fuel level sight gauge showed ¾ full. Approximately fifteen minutes into the flight, whilst 3 nm east-north-east of Wellesbourne Mountford airfield at an altitude of 1,400 ft, the engine abruptly stopped. The pilot did not consider that he had sufficient height to glide back to the airfield and turned onto a southerly heading to avoid a village. The pilot made a MAYDAY call to Wellesbourne Information and attempted to restart the engine by engaging the starter motor, without success.

The pilot selected a large field to land in that was downwind, with slight downslope in the selected landing area. The aircraft touched down in the field on the main landing gear, before the nose landing gear leg dug in, causing the aircraft to nose-over and come to rest inverted (Figure 1). The pilot reported that the field was soft due to recent wet weather.

He sustained minor injuries and stated that he found egress from the aircraft difficult due to damage to the upper fuselage and the broken canopy. He recalled hearing the sound of at least one of the aircraft's electric fuel pumps running whilst he was in the aircraft, prior to his egress, and stated that all of the aircraft's switches were in the normal positions for flight.

Figure 1
Accident site

Aircraft examination

Following the importation of the aircraft from the USA, as part of the initial LAA Permit to Fly inspection, the pilot and an LAA Inspector had replaced the fuel pressure regulator, fuel filters, turbo control unit and both carburettors. The aircraft had flown for approximately 10 hours since the LAA Permit to Fly was issued, with no problems identified with the engine or the aircraft's fuel system.

The aircraft was examined by the LAA following the accident, however this examination did not determine the reason for the engine failure. The engine's crankshaft turned normally by hand, with compression on all four cylinders, and no abnormalities were evident with the aircraft's spark plugs. The aircraft's two electric fuel pumps[1] were tested and functioned normally when supplied with electrical power, and the fuel filters were not clogged.

Footnote

[1] The Rotax 914 piston engine fitted to G-JAGY does not have a mechanical engine-driven fuel pump. Fuel pressure is supplied by two independent electric fuel pumps; one primary fuel pump and one secondary fuel pump.

The LAA aircraft examination identified that the aircraft's instrument panel featured switches to control electrical power to each of the aircraft's electric fuel pumps (Figure 2).

Figure 2

Fuel pump switches

This arrangement is contrary to the Europa XS build manual, which requires that the primary electric fuel pump is powered directly from the engine's alternator with overload protection provided by a 5 amp circuit breaker. This design ensures that the primary fuel pump is powered whenever the engine is running.

The initial LAA Permit to Fly inspection following the aircraft's importation from the USA did not detect the non-standard fuel pump switching arrangement in G-JAGY. The LAA publishes guidance on the inspection of imported homebuilt aircraft in Technical Leaflet TL 1.06[2], which includes the need to check that the imported aircraft complies with the LAA-approved design standard. Despite this variation in the aircraft's fuel system configuration, there was no evidence to show that it had been the cause of the engine failure and the pilot recalled hearing at least one of the aircraft's fuel pumps running following the accident.

Footnote

[2] http://www.lightaircraftassociation.co.uk/engineering/TechnicalLeaflets/Building,%20Buying%20or%20Importing/TL%201.06%20Imported%20Aircraft.pdf

Conclusion

The aircraft's engine abruptly stopped during a local flight and with the aircraft in a position with insufficient height to glide back to Wellesbourne Mountford airfield. During the resulting forced landing in a field the aircraft nosed-over, coming to rest inverted, and the pilot received minor injuries. The cause of the engine failure was not established.