ACCIDENT

Aircraft Type and Registration:	Europa XS (prototype motorglider), G-CBHI
No & Type of Engines:	1 Rotax 912 ULS piston engine
Year of Manufacture:	2001
Date & Time (UTC):	18 October 2011 at 1530 hrs
Location:	Chilbolton (Stonefield Park) Airfield, Hampshire
Type of Flight:	Flight test
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Propeller blade tip and wheelbay damaged
Commander's Licence:	Commercial Pilot's Licence
Commander's Age:	58 years
Commander's Flying Experience:	11,311 hours (of which 80 were on type) Last 90 days - 24 hours Last 28 days - 13 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and AAIB enquires

Synopsis

The pilot landed the aircraft with the landing gear unintentionally in the retracted position.

History of the flight

The pilot had been conducting a series of spin trials on a prototype motor glider and was on his third flight that day when he returned to Chilbolton Airfield. As the wind strength had started to increase, he elected to land into wind by landing at a slight angle across the grass runway. This required the pilot to fly a curved approach and a short final while taking care to remain clear of a tall hedge, overhead cables and their supporting poles. The pilot states that while he carried out his pre-landing checks, due to the short final approach and his focus in ensuring that he cleared the obstacles, he had given himself insufficient time to confirm that he had completed all the checks before landing. The aircraft landed with the landing gear retracted and the airbrakes extended.

Aircraft description

G-CBHI is an Europa XS, home-built aircraft that at the time of the incident had been fitted with a glider wing and was operating on a Permit Flight Release Certificate, issued by the Light Aircraft Association (LAA), in order for spin tests to be carried out.

The Europa XS is normally fitted with a 27.12 ft wing equipped with trailing edge flaps. The flaps and the

landing gear are operated by a single lever mounted on the centre console located between the seats (see Figure 1). Moving this lever rearward causes the flaps and landing gear to extend. At normal approach speeds, with the flaps retracted, the aircraft adopts a high-nose attitude which reduces the pilot's view of the runway. Selecting the landing gear and flaps to the extended position results in the aircraft adopting a significant nose-down attitude, which alerts the pilot to the fact that the gear has been extended. It was for this reason that it had been perceived that there was no requirement for a gear warning system.

The motor glider variant of the Europa XS is equipped with a 47.25 ft glider wing fitted with trailing edge airbrakes. On G-CBHI the airbrake lever had been mounted next to the landing gear lever. Moving the airbrake lever rearward causes the airbrakes to extend. With the landing gear and airbrakes extended, there is negligible change in the aircraft attitude and therefore the pilot would be unable to tell from the attitude of the aircraft if the landing gear had been extended.

Neither variant of the Europa XS is fitted with a landing gear position indicator or a warning horn.

Comment

The pilot had considerable experience on the standard, short wing variant of the Europa XS where there is a significant change in the pitch attitude when the landing gear and flaps are extended. However, this change in attitude does not occur on the motor glider variant of the Europa XS. Ergonomic factors resulting from the positioning of the airbrake and landing gear lever, which also operate in the same sense, might also have been a factor in this accident.

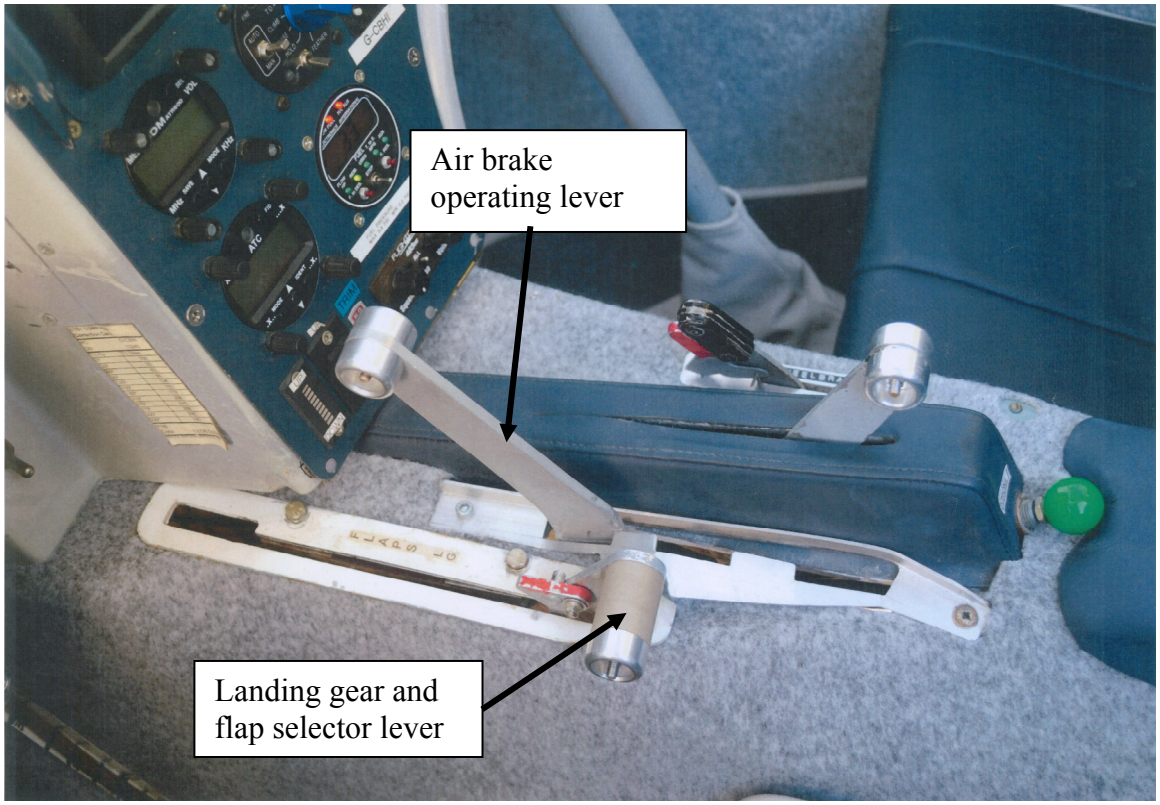

Figure 1

Location of landing gear and flap operating lever

At the time of the accident, G-CBHI was the only prototype variant of the Europa XS motor glider operating in the UK. The LAA have advised that they would review the location of the landing gear and airbrake levers, and the need for a gear position warning system, during the acceptance process prior to Type Approval being awarded.