

ACCIDENT

Aircraft Type and Registration:	Christen A-1 Husky, G-WATR	
No & Type of Engines:	1 Lycoming O-360-C1G piston engine	
Year of Manufacture:	1988 (Serial no: 1040)	
Date & Time (UTC):	7 August 2013 at 1619 hrs	
Location:	Loch Awe, Argyll and Bute	
Type of Flight:	Training	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Damage to cowlings, forward fuselage, floats, landing gear and wings. Other damage as a result of water immersion	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	42 years	
Commander's Flying Experience:	407 hours (of which 99 were on type) Last 90 days - 99 hours Last 28 days - 48 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

Synopsis

This tandem-seat, amphibian aircraft was being used to train a pilot prior to the renewal of his Single-Engine Piston (SEP) (Land) rating. During the flight and with the landing gear extended, an engine failure was simulated when overhead Loch Awe. The instructor told the student to imagine a landing strip on the surface of the loch and to aim for that. The student expected to be told when to climb away but instead the instructor invited him to continue and land. The landing gear remained extended and this caused the aircraft to flip onto its back when water contact was made. Both pilots escaped without injury.

History of the flight

The aircraft was being used to train a pilot in preparation for the renewal of his Single-Engine Piston (SEP) (Land) rating. The flight commenced with a water takeoff from Loch Earn. This was coached by the instructor, as the student had some previous experience of water takeoffs and landings. From Loch Earn they flew to Oban Aerodrome where they refuelled, before conducting a series of circuits to the asphalt runway. Three touch-and-go landings and one practice engine failure exercise were completed before they headed to the east for upper airwork. Once at an appropriate altitude, the student practised some stall recoveries, both with the landing gear extended and with the landing gear

retracted. By this time the aircraft was in the vicinity of Loch Awe and was at 2,500 ft amsl. Prior to the flight, the instructor had discussed the actions to be employed if an engine failed, and he now initiated a Practice Forced Landing (PFL). The terrain around the loch was heavily wooded and inhospitable, so the instructor suggested that they imagine an airstrip on a stretch of water parallel to the western shore, and the student used this as his aiming point. The landing gear was extended and both pilots initially anticipated that they would discontinue the approach and climb away from a height of around 500 ft, but the instructor changed his mind and decided they could continue for a water landing. When he was not told to climb away, the student queried the intention and was told that he should continue and land at the aiming point.

The rear wheels and floats made water contact first and the aircraft started to decelerate rapidly. Once the front wheels touched the water, the aircraft started to pitch onto its nose. This could not be controlled and it ended up inverted, with the front of the floats submerged and the tail clear of the water. The pilots said that the rotation did not feel particularly violent and neither of them was injured. They reported that their five-point harnesses released easily and that they were able to open the door and egress without difficulty. At this stage, there was still buoyancy in the wings and the student was able to climb onto a wing, without getting wet, and phone for assistance. Two local fishing boats came to their aid. Although the aircraft settled in the water, with only the floats and wheels visible, a boat was able to tow it to a suitable beach for recovery.

Discussion

In the Husky, the landing gear indications are presented on the left side of the instrument panel. With the landing gear up, four blue lights indicate the correct configuration

for a water landing, while four green lights indicate landing gear down, for land operations. In addition to this, there is an aural alert with an associated flashing annunciator. On decelerating to less than 65 kt, a male voice declares "GEAR DOWN FOR RUNWAY LANDING" or, alternatively, a female voice declares "GEAR UP FOR WATER LANDING". The alerts continue until the annunciator is pressed. From the rear seat the instructor can hear the aural alerts, but has to look over the student's left shoulder to see the indications. During this PFL the landing gear was down throughout. As far as the student was concerned, this was the correct configuration for an approach to an airstrip, albeit a simulated one. He did not recall pressing the annunciator to cancel an aural message and commented that the annunciator may have failed because of a possible loose connection. In the circumstances, he understood the landing gear to be in the correct position.

The instructor did not remember hearing an aural message and did not visually check the landing gear lights after he made the decision that they would land on the water. He acknowledged that he had caused confusion by suggesting that they use a stretch of water as an imaginary airstrip. The aircraft's checklist for an emergency landing on water specifies that the landing gear must be 'UP'. For emergency landings on land, the checklist specifies landing gear 'DOWN' for smooth terrain but 'UP' for rough terrain.

This Christen A-1 Husky is one of a handful of amphibian aircraft that operate in the UK. Although the accident that occurred on Loch Awe could only have happened to this class of aircraft, it does highlight how confusion can be caused within the training environment.

The incorrect selection of landing gear is usually associated with 'gear-up' arrivals on land. This subject

is explored in a video that has recently been promulgated on the website of the European General Aviation Safety Team (EGAST), which is part of the European Strategic

Safety Initiative (ESSI). This video along with a growing number of safety leaflets can be viewed at: <http://www.easa.europa.eu/essi/egast/> .