ACCIDENT

Aircraft Type and Registration:	Europa, G-MIME
No & Type of Engines:	1 Rotax 912 ULS piston engine
Year of Manufacture:	2001
Date & Time (UTC):	13 July 2008 at 1135 hrs
Location:	Caernarfon Airfield, Gwynedd
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Propeller and wing damaged
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	52 years
Commander's Flying Experience:	17,734 hours (of which 221 were on type) Last 90 days - 200 hours Last 28 days - 83 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

The aircraft departed the runway during landing due to the right landing gear outrigger failing to lock down. The reason for its failure to lock down could not be determined.

History of the flight

On start-up prior to departure, the pilot, who owned the aircraft, noted that the landing gear outrigger down and locked indicator lights were not operating. Since both lights were affected, he concluded that there was a continuity problem in the common earth return lead. As this was an owner modification and not required for flight, he elected to continue with the flight.

The circuit to land on Runway 26 at Caernarfon was uneventful and as there was a pair of slower microlight aircraft in the circuit ahead of him, the pilot ensured that his speed was not excessive. He lowered the flaps and landing gear on the base leg at an airspeed of between 60 and 65 kt. He did this in a slow and progressive fashion, to avoid sudden trim changes from rapid flap deployment. There was a slight crosswind from the left and he applied left aileron after touchdown to compensate. As the aircraft slowed on the runway it began to roll to the right and it quickly became evident that the right landing gear outrigger had not locked down. Despite the application of full left aileron and right rudder, the pilot was unable to prevent the aircraft from veering to the left and departing the runway. It pitched nose down sufficiently for the propeller blade

tips to strike the runway surface. On subsequent examination the right outrigger was found to be locked down.

Aircraft information

G-MIME was equipped with the monowheel landing gear configuration, comprising a single large retractable mainwheel, a fixed tailwheel and a pair of small wheels fitted to retractable outrigger legs mounted on the wings, outboard of the flaps. The landing gear and flap systems were interconnected and were mechanically-operated via a single lever in the cockpit. The rate of movement of the lever directly controls the rate of downward movement of the landing gear and flaps. The outriggers are locked down via latch mechanisms. Since the position of the outriggers cannot be seen from the cockpit when lowered, the pilot had modified his aircraft to incorporate a pair of green lights which illuminate when the outriggers are locked down.

The pilot had incorporated additional modifications to the aircraft, in conjunction with the PFA (now LAA) and the aircraft manufacturer, to address certain mechanical problems identified in the landing gear outrigger system.

Discussion

The pilot suggested that the right outrigger may have locked down when the load on it was briefly removed when the aircraft left the runway, due to the slight drop between the edge of the runway and the grass. Examination did not identify any reason for its failure to lock down initially.

The owner was aware of other previous cases of Europa landing gear outriggers failing to lock down. Possible causes are thought to include mechanical reasons, due to the limitations of the design, or lowering the flaps and landing gear at too high an airspeed. Owners have reported that when the flaps landing gear are lowered at speeds in the region of 75 to 80 kt, the outriggers do not always lock down immediately, but will do so once the airspeed has reduced.

Given that, according to the pilot, modifications to the outriggers of G-MIME had eliminated any mechanical shortcomings and that the airspeed was not excessive when he lowered the flaps and landing gear, both outriggers should have locked down. On this occasion, he had lowered the flap and landing gear system in a slow and progressive fashion, to avoid the trim effects of rapid flap deployment. After discussion with another owner of this aircraft type, he concluded that a more positive lowering of the system might be advantageous in that it would achieve more rapid rotation of the outrigger legs, which would assist them in locking down**.**