

## ACCIDENT

<b>Aircraft Type and Registration:</b>	Pegasus XL-R, G-MTOO	
<b>No &amp; Type of Engines:</b>	1 Rotax 447 piston engine	
<b>Year of Manufacture:</b>	1987	
<b>Date &amp; Time (UTC):</b>	12 June 2010 at 1601 hrs	
<b>Location:</b>	Newbridge Leisure Centre, Newbridge, Gwent	
<b>Type of Flight:</b>	N/A	
<b>Persons on Board:</b>	Crew - 1	Passengers - None
<b>Injuries:</b>	Crew - 1 (Serious)	Passengers - N/A
<b>Nature of Damage:</b>	Damaged beyond economic repair	
<b>Commander's Licence:</b>	Pilot under Training	
<b>Commander's Age:</b>	65 years	
<b>Commander's Flying Experience:</b>	40 hours (of which 15 were on type) Last 90 days - n/k hours Last 28 days - n/k hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the owner and subsequent AAIB telephone enquiries	

## Synopsis

The aircraft owner, who was not yet qualified as a pilot, had intended to conduct untethered ground runs at some playing fields following the completion of maintenance on the aircraft. During these ground runs the aircraft inadvertently became airborne and collided with goalposts. The owner sustained serious injuries and the aircraft was destroyed.

## History of the flight

The microlight was transported to the accident site, some playing fields near Newbridge, on the morning of the accident. The owner, who was undertaking training for a PPL (Microlights) had previously used this site to conduct untethered ground runs and considered it

suitable for his purposes due to its location and the expanse of land available. He conducted two 400 metre long ground runs of the trike unit at up to approximately 5,500 engine rpm, during which no anomalies were noted. He then rigged the wing to the trike unit and commenced a further untethered ground run, with the intent of determining at what point the wing produced lift, following recent reprofiling of the wing battens. On reaching a speed of approximately 24 mph, the owner felt the wing producing lift and attempted to bring the aircraft to a stop; however, he reported that the foot throttle had stuck in the open position. He attempted to pull the ignition kill-switch to stop the engine but was unable to reach it. In attempting to do so he believed

he pushed the A-frame forward, causing the aircraft to become airborne. The aircraft subsequently collided with goalposts.

### **Aircraft description**

The Pegasus XL-R is a two-seat flexwing microlight aircraft comprising a trike unit and wing, which are connected by a bolt through the monopole. The trike incorporates a tricycle undercarriage, powerplant and tandem seating arrangement for a pilot and one passenger. The aircraft is controlled via an A-frame, which consists of a control bar braced by fore and aft wires and two uprights attached to the wing keel tube.

The primary throttle control is foot-operated and this is complemented by a friction-damped cruise control hand throttle on the left side of the seat frame. Cables from both the foot and hand throttles enter a throttle splitter box. The splitter box is an aluminium tube with a nylon piston inside. The two throttle cables are attached to one side of the piston block; attached to the other side of the piston is a single cable which runs to the carburettor. Operating either throttle pulls the nylon block along the splitter box and controls the carburettor slide which regulates the flow of air and fuel to the engine. The foot throttle is sprung to return back to idle when pressure is removed; a friction device causes the hand throttle to remain in the selected position. If both the foot and hand throttle are actuated at the same time, the greater of the two inputs is taken by the splitter box to drive the carburettor slide.

The mixture control is located on the right side of the seat frame. An ignition kill-switch is fitted on the front seat base bracket, immediately below the pilot's knees.

### **Background**

The owner had acquired G-MTOO in 2007 and initially flew it with his instructor while undertaking pilot training. He subsequently decided to continue his training in a club aircraft, and consequently G-MTOO was not used for a period of approximately 22 months.

In May 2010 the owner decided that he wished to fly G-MTOO again. Accordingly, it was subjected to an engineering inspection and a check flight for the purpose of revalidating the Permit to Fly, which is required on an annual basis. The inspection and check flight were carried out by the same individual, who held both BMAA Inspector and Check Pilot status. No significant defects were reported during the engineering inspection. The aircraft performed acceptably during the check flight, however the Check Pilot noted a number of minor anomalies (but not sufficient to prevent revalidation of the Permit). These included a slight tendency of the aircraft to turn to the left and a sluggish engine response. He recommended that the owner reprofile the wing battens and decoke the engine. The new Permit was issued and the recommended maintenance was subsequently carried out by the owner.

### **Discussion**

The owner reported that the foot throttle had stuck in the open position, but he was not able to reproduce any throttle faults subsequent to the accident. Discussions with the BMAA and the aircraft manufacturer suggest that this type of throttle has been known to jam, as the nylon piston in the splitter box can swell due to moisture ingress. However, no anomalies were noted with the throttle operation during the recent Permit revalidation inspection, or during the ground runs conducted prior to the accident. In addition, the throttle splitter box had been replaced by the owner the previous year, and he

reported that the nylon piston moved freely both before and after the accident.

As two ground runs had already been carried out prior to the accident, the possibility that the hand throttle may have been left partially open following an earlier ground run could not be discounted. However, the owner could not recall this being the case. Had it been so, the hand throttle would have provided an overriding command, even when foot pressure was removed from the foot throttle. Subsequent models of

microlight aircraft from this manufacturer incorporate a microswitch that prevents operation of the starter if the hand throttle is open. Later designs of microlight from this manufacturer also incorporate a more accessible ignition kill-switch which is mounted on the seat frame.

The owner attributed the accident to poor selection of the test site where obstructions existed and his eagerness to conduct the ground runs, rather than waiting until his instructor was available to assist.