

No: 9/88

Ref: EW/C1068

Category: 3

**Aircraft Type and Registration:** Pegasus XL-R Microlight, G-MTOY

**No & Type of Engines:** 1 Rotax 447 Air cooled piston engine

**Year of Manufacture:** 1987

**Date and Time (UTC):** 21 May 1988 at 1800 hrs

**Location:** Crosland Moor Airfield, Huddersfield, Yorkshire

**Type of Flight:** Training

**Persons on Board:** Crew - 1                      Passengers - None

**Injuries:** Crew -1 (Fatal)                      Passengers - N/A

**Nature of Damage:** Extensive

**Commander's Licence:** Student Pilot

**Commander's Age:** 49 years

**Commander's Total Flying Experience:** Approximately 32 hours (of which 15 were on type)

**Information Source:** AAIB Field Investigation

After some limited three-axis experience, the pilot had started microlight flying at Doncaster in August 1987. He had flown G-MTOY on 24 April 1988 and had not flown again until the day of the accident when, on the advice of his instructor, he completed an extended dual check with a practise forced landing in the circuit, followed by 20 minutes of solo consolidation flying. The instructor had noted in the training record that the "student had been perfect in difficult weather conditions, ie thermic 5 mph downwind circuit pattern". After a brief rest the pilot planned a qualifying cross-country to Crosland Moor.

Crosland Moor is an unlicensed airfield whose single runway consists of 640 metres of asphalt and 250 metres of grass. The 25 end of the runway is laid on an embankment rising to about 10 metres above the surrounding terrain. The runway 25 threshold is displaced about 150 metres into the runway after which the runway has a distinct up-slope. The airfield flight guide states "Wherever possible land and take-off on runway 25. When runway 25 is in use pilots are advised to land well beyond the threshold".

Before the cross-country flight the instructor had examined the pilot's map and flight plan and suggested that, in view of the escarpment at the end of runway 25, he should land past the numbers half way along the asphalt. The standard circuit at Crosland was left-hand at 1000 feet. The pilot had planned to join overhead at 2000 feet and had noted that the airfield was 825 feet amsl. The weather at Crosland was fine and the surface wind was south-easterly at about 5 mph.

At midday on the day of the accident a Robin DR400 which was attempting to land on runway 07, had crashed into a wall approximately 300 metres to the east of the runway and 25 metres to the south of the extended centreline. Just beyond the Robin there was a sharp drop into a quarry. At the time of the accident to G-MTOY a number of pilots were working on the Robin and, together with other witnesses, were able to describe the flight path of the microlight.

The aircraft flew along the downwind leg at a height estimated at 200-300 feet. When the aircraft was abeam and relatively close to the end of the runway it turned left in a gradual descent towards the airfield with the engine described as being at a low power setting. The turn continued through the runway centreline until the aircraft was heading approximately south-westerly back towards the runway. It then appeared suddenly to descend more steeply from a height of between 30 and 50 feet towards a grass bank running parallel to the runway, but displaced 65 feet to the north. It was described as "dropping like a stone" without any increase in engine noise until it hit the bank in a nose-down attitude.

The ground marks showed that the nose wheel had struck first and broken off, allowing the exposed end of the base tube to dig into the ground causing a rapid deceleration and the aircraft to somersault. Turf was found in the nose wheel suspension which consisted of a leading link system which had rotated towards the vertical and contacted the turf. The trike frame had come to rest on level ground facing the direction of travel with the monopole bent through approximately 120°. Witness marks on the control bar and the vertical pole showed that the control bar was central at impact.

The nature of the damage to the propeller, and the size and distribution of the debris, indicated that the propeller was turning, but was not under any significant power at impact. The fuel tank contained over 1½ gallons of fuel/oil mix, the fuel filter was full of fuel and did not contain any perceptible debris and the spark plug electrodes were of a good colour. The wreckage was moved to Farnborough where the seat frame and propeller were changed to allow engine runs with the same electrics and controls and using the original fuel. The foot throttle was left disconnected, because of impact damage, and the engine was run up to take-off power using the hand throttle. The engine was then run at ground idle for 5 minutes to simulate engine conditions in the circuit and then slam accelerated. There was a barely perceptible lag before power was achieved and this was considered to be satisfactory.

A plastic container marked "9 stones" filled with sand had come adrift from its position in the upper seat during the impact sequence and had hit the underside of the sail. The top of the container had ruptured and sand was found in the pulled seams of the sail and over the engine. The container and remaining sand weighed 120 lbs. The AAIB has recommended "that the CAA recognises the use of ballast for performance reasons and issues requirements, applicable to both new and also in-use aircraft, to ensure that such ballast is adequately restrained".

The pilot was known to have suffered recently from influenza but there was no evidence from the autopsy of any other medical factor which might have caused or contributed to the accident.