

ACCIDENT

Aircraft Type and Registration:	Team Minimax 91, G-MZPJ	
No & Type of Engines:	1 Rotax 503 piston engine	
Year of Manufacture:	1993 (Serial no: PFA 186-12277)	
Date & Time (UTC):	11 August 2020 at 1215 hrs	
Location:	Gatton Bottom, Redhill, Surrey	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - 1 (Serious)	Passengers - N/A
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	National Private Pilot's Licence	
Commander's Age:	53 years	
Commander's Flying Experience:	218 hours (of which 176 were on type) Last 90 days - 1 hour Last 28 days - 1 hour	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

During a private cross-country flight, the microlight's engine stopped, forcing the pilot to make an emergency landing. The landing resulted in significant damage to the aircraft and serious injury to the pilot after the landing gear clipped an obstacle close to the ground, most likely rough vegetation. The subsequent investigation identified that the aircraft had probably run out of fuel.

History of the flight

The aircraft was based at Fairoaks Airfield. On the morning of the flight, the pilot refuelled the aircraft with 40 litres of fuel and began the pre-flight checks. He reported starting the engine at 0930 hrs and conducted some extended ground checks, prior to taking off and departing the airfield around 1000 hrs. He then flew south east towards the south coast, before turning north-east, just north of Brighton. He flew as far as Royal Tunbridge Wells, before turning west and flying till he was overhead the M23 motorway. He then flew north until he saw the M25 and followed it westward with the intention of returning to Fairoaks to land. However, just north of Reigate, at a height of approximately 1,300 ft, the engine stopped. The pilot made a mayday call, which was logged at 1210 hrs. The pilot reported he circled to find an area suitable for a forced landing, before making his approach. As the aircraft reached the touch down point, the pilot believed the left landing gear clipped something, causing the aircraft to turn 90 degrees to the left and hit the ground. This was

broadly corroborated by a nearby eyewitness. The aircraft broke up as a result of the impact with the ground and the pilot was knocked unconscious, suffering serious facial injuries.

Accident site

The accident site was in an area of parkland next to Hop Garden Pond, within the grounds of Gratton Park National Trust. The area was covered with large trees and rough vegetation, particularly around the location of the wreckage.

Aircraft information

The Team Minimax 91 is a fixed wing microlight with a 300 kg maximum takeoff weight. G-MZPJ was amateur built and was powered by a two cylinder, two-stroke, Rotax 503 engine, which ran on MOGAS. The manufacturer quoted a fuel consumption rate for the engine in its Operators Manual of 25 l/h at takeoff performance and 15 l/h at 75% continuous performance.

Aircraft examination

The front of the aircraft was significantly damaged by the impact with the ground. Fire and Rescue first responders stated that they attempted to defuel the aircraft in order to make it safe but did not find any fuel present. The pilot reported that he did some basic checks on the engine after the wreckage was recovered but no mechanical issues were identified.

Analysis

The duration of the accident flight from the time the engine was started to the MAYDAY call was 2 hours and 40 minutes. The pilot reported that he refuelled the aircraft with 40 litres of fuel. Using the manufacturer's fuel consumption rate of 15 l/hr, this gives an endurance of 2 hours and 40 minutes. Allowing for a reduced consumption rate at idle power and increased fuel consumption at takeoff power, the timing of the engine stopping is consistent with the aircraft running out of fuel. This analysis is supported by the lack of fuel observed by the Emergency Services who attended the scene and was acknowledged by the pilot as the most likely cause in his accident report form.

Conclusion

The pilot performed a forced landing after the engine stopped due to fuel starvation, when the aircraft ran out of fuel. As the aircraft touched down the landing gear clipped something, most likely rough vegetation, causing the aircraft to turn 90 degrees and hit the ground. This resulted in significant damage to the front of the aircraft and a serious facial injury for the pilot.