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**ACCIDENT**

<b>Aircraft Type and Registration:</b>	Gemini Flash 2 Alpha microlight, G-MTJZ	
<b>No &amp; type of Engines:</b>	1 Rotax 503 piston engine	
<b>Year of Manufacture:</b>	1987	
<b>Date &amp; Time (UTC):</b>	11 July 2006 at 1100 hrs	
<b>Location:</b>	Field in Rocester, near Uttoxeter, Staffordshire	
<b>Type of Flight:</b>	Training	
<b>Persons on Board:</b>	Crew - 2	Passengers - None
<b>Injuries:</b>	Crew - None	Passengers - None
<b>Nature of Damage:</b>	Nosewheel collapsed and wing damaged	
<b>Commander's Licence:</b>	Private Pilot's Licence (Microlights) with Instructor Rating	
<b>Commander's Age:</b>	47 years	
<b>Commander's Flying Experience:</b>	670 hours (of which 120 were on type) Last 90 days - 60 hours Last 28 days - 19 hours	
<b>Information Source</b>	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

**Synopsis**

During a cross-country flight the engine failed due to fuel exhaustion. The subsequent forced landing in a field caused the nosewheel to collapse.

**History of the flight**

The Gemini Flash 2 Alpha is a two-seat flexwing microlight aircraft as depicted in Figure 1. The student pilot, who owned the aircraft, was on a training flight with his instructor. They had departed from Otherton airfield and were carrying out a cross-country flight to Darley Moor airfield, 20 nm to the north-east. The weather was good with no cloud, visibility greater than 10 km and a light south-westerly wind. The planned route was not

direct but involved a circuitous route of approximately 40 nm. While cruising at approximately 1,000 ft agl, 4 nm from the destination, the engine suddenly lost power as a result of fuel exhaustion. The instructor took control of the aircraft and decided to carry out a forced landing in a field, and then change fuel tanks once on the ground. During the glide approach to his selected field he encountered an unexpected downdraft which forced him to turn and land in a less suitable field. The aircraft hit a rut in the ground which caused the nosewheel to collapse and the right wing tip to hit the ground.



**Figure 1**

Gemini Flash 2 Alpha flexwing microlight

### **Fuel system and fuel burn rate**

The aircraft was fitted with two 20-litre fuel tanks located behind the aft seat. The tanks can be changed in flight but, according to the instructor, it was an awkward procedure that involved reaching aft with one hand to move the fuel cock. It was not possible to see the fuel cock while

seated so the procedure had to be done by feel.

Both fuel tanks were full prior to departure, giving a total fuel load of 40 litres. The instructor stated that with two people onboard the aircraft typically cruised at 50 mph and used fuel at a rate of 15 litres per hour. The engine ran out of fuel approximately one hour after departure so the actual fuel burn rate was closer to 20 litres per hour. The instructor believed that the high temperature of the day (29°C at Otherton) caused them to use a higher power setting than normal and this resulted in the higher fuel burn rate.

### **Conclusion**

The aircraft had sufficient fuel onboard for the flight but the fuel in one tank alone was not sufficient given the conditions of the day and the high power setting used. Because changing tanks in flight was an awkward procedure the instructor elected to land in a field. However, the field he had selected could not be reached so he landed in a less suitable field which resulted in the nosewheel collapse and subsequent aircraft damage.