

## ACCIDENT

<b>Aircraft Type and Registration:</b>	Groppo Trail, G-CIGR	
<b>No &amp; Type of Engines:</b>	1 Sauer S 2400 UL piston engine	
<b>Year of Manufacture:</b>	2015 (Serial no: LAA 372-15229)	
<b>Date &amp; Time (UTC):</b>	14 July 2018 at 1420 hrs	
<b>Location:</b>	South Longwood Farm, Owslebury, Hampshire	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - 1
<b>Injuries:</b>	Crew - 1 (Minor)	Passengers - None
<b>Nature of Damage:</b>	Extensive	
<b>Commander's Licence:</b>	Light Aircraft Pilot's Licence	
<b>Commander's Age:</b>	74 years	
<b>Commander's Flying Experience:</b>	3,228 hours (of which 164 were on type) Last 90 days - 7 hours Last 28 days - 24 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

## Synopsis

The aircraft took off from a farm strip but did not climb sufficiently to clear a high hedge beyond the end of the runway.

## History of the flight

On the morning of the accident the pilot and a passenger flew from a farm strip in Wiltshire, where the aircraft was usually kept, to West Tisted Airfield which was hosting a fly-in. The weather was fine and warm with light winds and the ground conditions were very dry as there had been a prolonged spell of hot dry weather in the south of England. The flight was uneventful. The aircraft later took off from the westerly runway at West Tisted and flew directly towards the next destination, South Longwood Farm strip, Owslebury, where it landed. The pilot reported there had not been any problems with the aircraft on either flight.

The pilot and his passenger set off from South Longwood in the early afternoon. The pilot calculated that the aircraft weighed 516 kg, 4 kg below the maximum takeoff weight of 520 kg. At the western end of grass Runway 06 are several steel-framed hangars, and at the eastern end is a public road with a high hedge on the far side. A windsock near the hangars at the western end indicated a light crosswind from the north (left for Runway 06), and the pilot assessed the wind locally as light and variable. He also assessed there was a downslope on Runway 06 and decided to take advantage of it and take off in an easterly direction. The temperature was around 27°C.

The pilot and passenger pushed the aircraft back towards the hangars to make maximum use of the available runway. The takeoff roll started normally and the aircraft lifted off, as the pilot expected, around the mid-point of the 650 m runway. The aircraft climbed to about 15 - 20 ft, but then stopped climbing. The pilot could see trees ahead across a road beyond the end of the runway and turned slightly left to try to avoid them. The aircraft crossed above the public road and struck a telegraph pole. The pole gave way and the aircraft dropped into the hedgerow. The fuselage was significantly damaged but the occupants, who were wearing full four-point shoulder harnesses, were not injured and were able to exit the aircraft unassisted. A search party took some time to locate the aircraft because it was hidden from view by surrounding foliage.

### **Aerodrome information**

South Longwood is a privately owned and operated farm strip located at the bottom of a valley with steep hills nearby. It is situated within the Southampton Control Zone and Southampton ATC must be contacted for entry or departure instructions. The pilot, before his flight, had contacted the airstrip operator and received a texted briefing about the airstrip. The passenger had visited the airstrip previously.

The grass runway orientated 060/240°M has a length of 650 m, width of 14 m and a downslope for the first 200 m of Runway 06. There is also a down slope from left to right for the first half of Runway 06. The airfield windsock is located by buildings at the western end of the airstrip.

There was no telephone landline available at the airfield at the time of the accident and the mobile reception was poor.

### **Other information**

The Groppo Trail is a high-wing, tailwheel aircraft with two tandem seats. The Sauer S 2400 UL piston engine has a power output of 100 hp at 3,500 rpm; no performance data is available for the aircraft when fitted with this engine.

The 1420 hrs METAR from Southampton Airport, 6 nm to the south west, indicated a surface wind from 220°M at 8 kt. A pilot, who landed on Runway 24 at South Longwood soon after the accident, recalled being advised by Southampton ATC of a surface wind at Southampton Airport of 200°M at 4 kt.

A witness who observed the departure commented that the aircraft did not seem to lift off until nearly  $\frac{2}{3}$  of the way along the runway and that it then remained in a nose high attitude and did not climb. He saw it enter the hedgerow and heard the sound of a collision. He alerted the emergency services and Solent Radar using his mobile telephone; to obtain a signal he had to stand on a filing cabinet in the airfield hangar. He then went by car to the accident location but was unable to see the aircraft from the road. Tall saplings had folded and sprung back into position, concealing the wreckage.

When the aircraft was recovered from the hedgerow the broken telegraph pole was examined. Witness marks from the impact indicated that the leading edge of a wing had struck the pole at a point 6 m above ground level.

## Analysis

The aircraft was taking off at maximum weight on a warm day in light winds from a grass airstrip which had obstacles at either end. The pilot and his passenger had pushed the aircraft as far back along the runway as possible before starting the takeoff, which suggested they may have had some concern about the length of the strip.

The strip is 650 m in length but obstacles at either end were such that the takeoff distance to 50 ft should be considered as being within the runway length. Tailwind, temperature and takeoff weight would all have influenced the takeoff distance to 50 ft. The downslope on Runway 06 would have a performance benefit for the initial part of the takeoff roll, although this is likely to have been neutralised by the cross slope, but further along the slope is negligible.

The wind at nearby Southampton Airport was south-westerly and may indicate the general airflow in the area, although South Longwood is in a valley location and subject to variable local winds. The windsock was located close to the hangars and likely to have been shielded in a south-westerly airflow, which could have given the pilot a false indication of overall wind conditions. As the aircraft travelled along the runway it may have become subject to a tailwind, which would have increased after lift-off. In a westerly airflow local heating effects from the hangars and hard standing at the western end of the runway could also have affected the runway environment.

It is likely that a combination of factors on a warm day with light winds resulted in insufficient performance being available for the aircraft to climb above the line of trees at the end of the runway.

There was a potential difficulty in notifying the emergency services in the event of an accident at South Longwood.

## Conclusion

The aircraft was very close to its maximum takeoff weight when it began its takeoff roll in conditions of light wind and with a temperature of approximately 27°C. After lift-off the aircraft climbed by no more than about 15 - 20 ft and, after crossing a public road, it struck a telegraph pole and dropped into the hedgerow below. It is likely that the light wind and high temperature adversely affected the aircraft's takeoff performance.

## Safety action

Following the accident, the following Safety Action was taken:

The operator of South Longwood airstrip decided to produce a briefing document for visiting pilots. A draft version, dated 18 July 2018, showed a diagram of the airstrip, runway and circuit information and warning text in a red box which included the following guidance:

*'South Longwood is a challenging farm-strip suitable for experienced pilots flying aircraft of sufficient performance to safely negotiate the obstructions on approach and departure. It is unlikely that any aircraft that requires a landing or takeoff run of more than 300m will be suitable.'*

and

*'Due to the valley location, the windsock does not always provide reliable indication of wind direction or strength.'*

The airstrip operator had been negotiating for a landline to be installed prior to the accident and re-contacted the supplier to ask for the installation to be carried out as soon as possible.

The windsock was to be relocated to a position more central to the runway and would be set on a higher mast.

#### **Comment**

A similar accident involving a Pierre Robin R2100A, G-BICS is reported in this Bulletin (EW/G2018/05/06). It has a general AAIB comment on take off performance in general aviation aircraft at the end of the report.