

**ACCIDENT**

<b>Aircraft Type and Registration:</b>	Rolladen-Schneider LS7, G-CFMY	
<b>No &amp; Type of Engines:</b>	None	
<b>Year of Manufacture:</b>	1988 (Serial no: 7004)	
<b>Date &amp; Time (UTC):</b>	4 May 2019 at 1416 hrs	
<b>Location:</b>	Near Blaenau Ffestiniog, Gwynedd	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - None
<b>Injuries:</b>	Crew - 1 (Fatal)	Passengers - N/A
<b>Nature of Damage:</b>	Destroyed	
<b>Commander's Licence:</b>	British Gliding Association Gliding Certificate	
<b>Commander's Age:</b>	64 years	
<b>Commander's Flying Experience:</b>	3,349 hours Last 90 days - 30 hours Last 28 days - 17 hours	
<b>Information Source:</b>	AAIB Field Investigation	

**Synopsis**

The pilot was flying his glider on a cross-country flight from Talgarth Airfield in South Wales towards Snowdonia National Park. When the pilot did not return a search was launched. The glider and deceased pilot were found in a field 3 nm south of Blaenau Ffestiniog. A post-mortem examination of the pilot found he had suffered a heart attack in flight which would have either rendered him unconscious or been fatal.

**History of the flight**

The pilot was participating in a week-long gliding trip to Talgarth Airfield with his local club. On 28 April 2019 he had passed a local check flight at Talgarth and had then flown four times during the week. He had brought G-CFMY, which he co-owned in a syndicate, to Talgarth. Throughout the week the weather forecast for the Saturday had looked favourable for a cross-county flight to North Wales. He had planned, with another glider pilot, to fly north from Talgarth towards Long Mynd and Oswestry then to Lleweni (Denbigh) and then on to Snowdonia.

On 4 May 2019, the pilot attended the group briefing at 0900 hrs. The airfield records showed that he launched in G-CFMY at 1013 hrs with an aerotow and was released at 1,100 ft agl (2,000 ft amsl). A friend who helped with the launch reported that the pilot was well rested and well briefed before launch. He watched the glider take off, then climb in the local area before seeing it depart to the north-east.

The other glider pilot flying the same route launched 10 minutes later, they had agreed a frequency on which to communicate with each other if necessary, but they didn't make contact during the flight. He described the conditions as "challenging" with a "good 20 kt wind" aloft with wave influence near Oswestry. He landed in a field near Ruffin at approximately 1500 hrs. He tried to call the pilot of G-CFMY before he landed but didn't get an answer. He recalled that the conditions had flattened out with sea air degrading the thermals. He recalled the cloud base in North Wales was approximately 4,000 ft amsl.

G-CFMY's pilot spoke to his wife on his mobile phone twice during the flight. He initially tried to call her at 1248 hrs and 1251 hrs; but did not get an answer. She called back at 1257 hrs and they spoke for 1 minute 31 seconds. She called him again at 1349 hrs and they spoke for 33 seconds. She recalled that during this second conversation he said he was 9-10 miles from Snowdon. She asked him what the conditions were like and she recalled he said something like "not good, cloud ahead, might turn back".

The pilot took several photographs during the flight using his mobile phone. The last photograph was taken at 1401 hrs.

When the pilot did not return to Talgarth the alarm was raised. The Distress and Diversion cell (D&D) were informed at 1717 hrs. The local police were able to track the pilot's mobile phone and determine its approximate position. The coastguard helicopter launched at 1828 hrs, located the glider at 1846 hrs and landed on site at 1849 hrs. The glider was within 300 m of the location provided by the police. The helicopter crew found the deceased pilot still strapped into the glider.

## **Recorded information**

### *Sources of recorded information*

Data was successfully recovered from a memory card that had been fitted to the pilot's portable tablet computer<sup>1</sup>. The card had been ejected from the tablet computer during the impact. The tablet computer was installed with a flight navigation software application<sup>2</sup> that recorded a GPS track log of the accident flight, with position, track, altitude and groundspeed recorded at a rate of once every four seconds.

### *Accident flight*

GPS-derived data salient to the accident flight are presented in Figures 1, 2 and 3. The recorded altitudes have been reduced by 181 ft in order that the altitude of G-CFMY aligned with the elevation amsl of Talgarth during the takeoff roll. Altitudes are referenced to amsl unless stated and all times are UTC (local time was +1 hour).

The recording started at 1011 hrs when G-CFMY was positioned on Runway 33 at Talgarth. A few minutes later the glider was towed to an altitude of about 2,000 ft amsl. It then proceeded on a northerly course towards the town of Denbigh, Wales, which it

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## **Footnote**

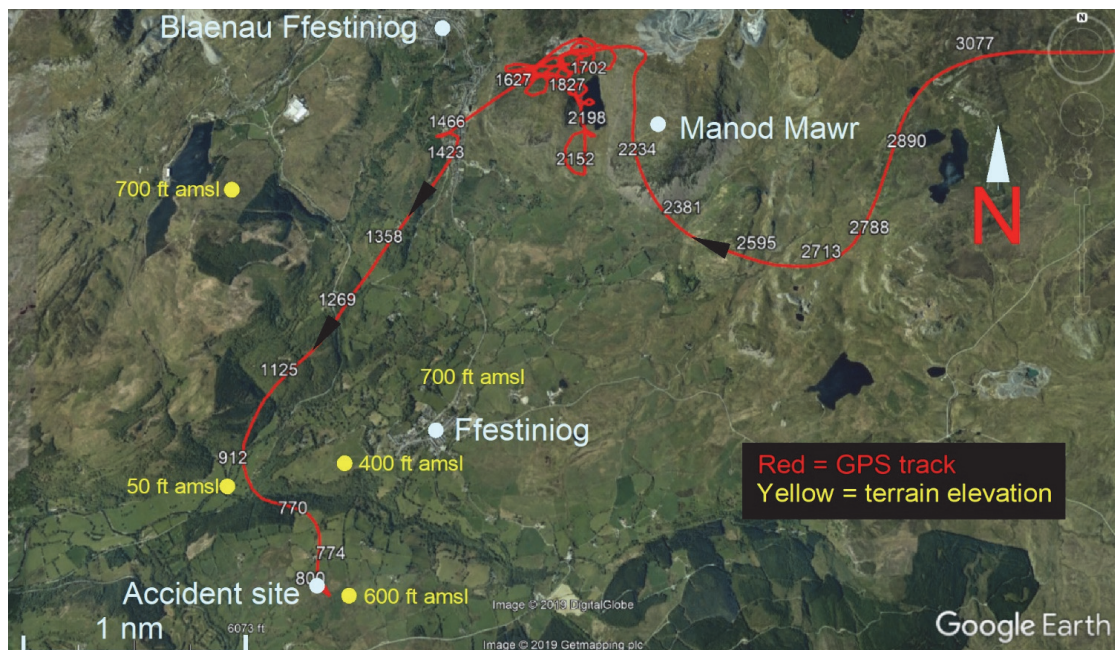
<sup>1</sup> Hewlett Packard Travel Companion.

<sup>2</sup> Naviter SeeYou Mobile software application.

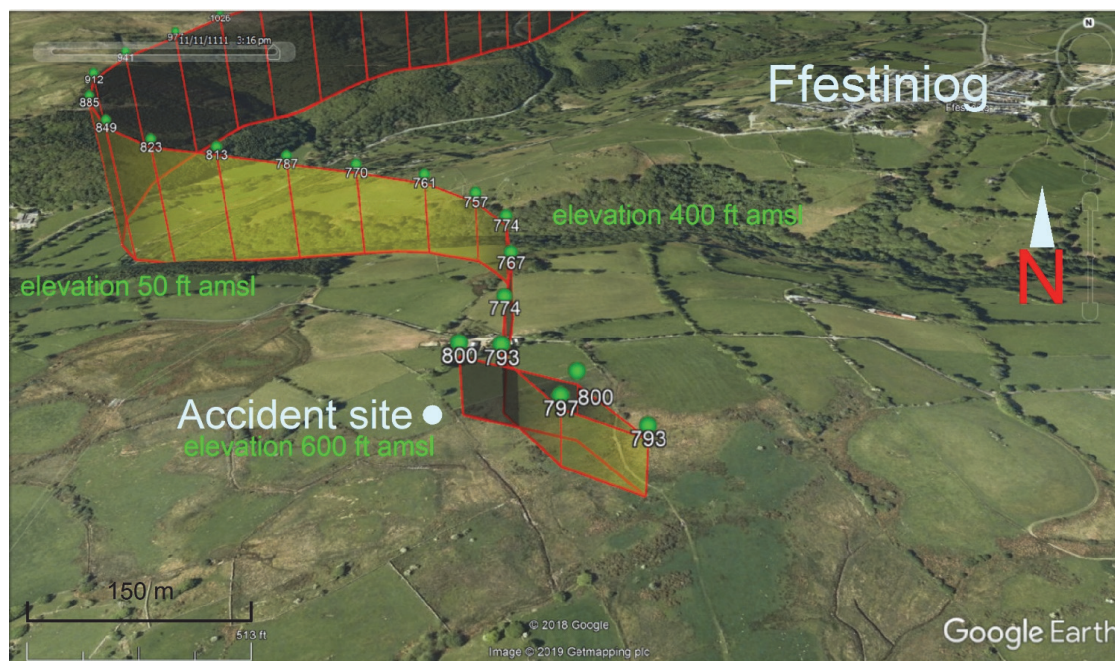
reached at 1307:30 hrs. Having passed almost overhead Lleweni Parc Airfield (located near to Denbigh) at 1323 hrs, the pilot altered course, initially to the west, and then to the south-west, towards the southern area of Snowdonia National Park.



**Figure 1**  
GPS track of G-CFMY



**Figure 2**  
GPS track of final 15 minutes of flight  
(values presented are aircraft altitude amsl and terrain elevation)



**Figure 3**

GPS track of final 15 minutes of flight  
(values presented are aircraft altitude amsl and terrain elevation)

At 1359 hrs, the glider was positioned about 6 nm north-east of the village of Ffestiniog. After several minutes of soaring it climbed to an altitude of about 3,500 ft before resuming a course towards the south-west. Several minutes later, having descended to an altitude of about 2,700 ft, the glider turned northwards towards Manod Mawr mountain, where it then proceeded to soar in an area just west of the summit above a quarry on the south facing slope. The glider soared in this area for about eight minutes, during which its altitude varied from between about 2,200 ft and 1,700 ft. At 1412:30 hrs the glider was at an altitude of 1,630 ft when it headed towards the south-west.

About 30 seconds later, the glider made a single right-hand orbit at an altitude of about 1,400 ft amsl (a height of approximately 700 ft agl) before turning onto a course of about 215°. The glider's ground speed was about 60 kt and it was descending at an average rate of 280 ft/min. Due to the sloping terrain elevation, G-CFMY maintained a relatively constant height above the ground as it descended. When the glider was 0.8 nm west of Ffestiniog its altitude was about 900 ft (a height of about 850 ft agl). At this point it was overhead the valley floor that extended towards the coastline which was approximately 8 nm to the south-west.

The glider then started a left turn towards the east, which was almost immediately followed by a right turn onto a southerly course that took the glider towards rising terrain. The final data points were recorded shortly after, which indicated that the glider had made a left turn. The final data point was recorded at 1416:01 hrs with the glider almost overhead the accident site at a height of about 200 ft agl and on a recorded track of 273°.

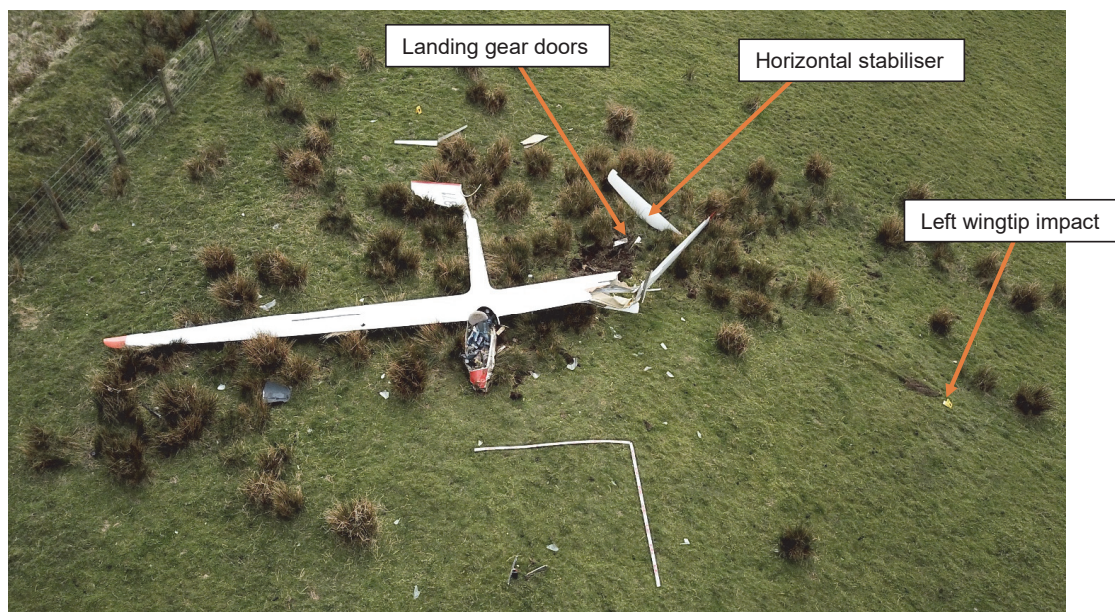
It was not possible to ascertain why the recorded data stopped prior to the end of the flight, but possible reasons included the glider striking the ground prior to the next data point being recorded or buffering of the data within the portable tablet computer prior to it being written to the memory card.

### Accident site

The accident site was in a field that was used for grazing cattle. The nearest buildings, which were adjacent to a road, were approximately 150 m away but none were inhabited. Assessment of the ground impact marks indicated that the glider had struck the ground in a slightly nose-down attitude and with a slight left bank of approximately 10°. It was structurally complete before the accident with the landing gear extended.

Both wings were found to be still attached to the fuselage, but the left wing was broken because of forces imparted during the accident. The glider had bounced in a counter-clockwise direction when viewed from above before coming to rest (Figure 4). The right wing was largely undamaged with the airbrake slightly deployed. The tail boom was broken, and the horizontal stabiliser and elevators had detached. Broken remnants of the canopy acrylic were found throughout the accident site. The furthest forward item was part of the canopy frame and was found approximately 16 m forward of the glider.

The glider was taken to AAIB Headquarters for detailed examination.



**Figure 4**  
Aerial view of the accident site

### Aircraft information

The Rolladen-Schneider LS7 is a single-seat glider with a wingspan of 15 m. It is constructed predominantly of fibreglass.

G-CFMY was manufactured in 1988 and had a valid Certificate of Airworthiness and Airworthiness Review Certificate. Maintenance records showed that an annual inspection had been carried out in March 2019, at 2,197 airframe flying hours.

### Aircraft examination

The landing gear selector lever was found in the DOWN position and the landing gear was extended. The airbrake selector lever has a 'gate' at the forward position to prevent inadvertent airbrake extension. The lever was found out of the gate and slightly aft such that the airbrakes were partially deployed.

Examination of the flying controls concluded that all the damage was consistent with forces imparted during the accident.

### Meteorology

Three other glider pilots who were flying in the same region at a similar time that the accident occurred were interviewed. They described the weather as northerly wind at approximately 20 kt with cloud base around 4,000 ft amsl. The cloud base was higher further south. They described challenging gliding conditions with significant turbulence particularly in the lee of the hills. The photographs in Figure 5 give an indication of the cloud cover in the area at the time of the accident. The left picture was taken by a glider pilot flying to the west of Mount Snowdon approximately one hour before the accident. The right picture was taken from the ground near Rhyd Ddu (9 nm north-west of the accident site) looking west.



**Figure 5**

Photographs showing the weather near the accident location

An aftercast provided by the Met Office confirmed the weather on the day of the accident was dominated by high pressure centred to the north-west of the UK. Surface winds were generally moderate north or north-easterly at around 15 kt. Winds at altitude were northerly at around 20 to 25 kt across Snowdonia. This would be sufficient to generate some lee wave activity but, any activity was relatively weak with maximum descent rates of around 100 ft/min. There were no large convective clouds within the area to introduce additional downdraughts. Maximum ascent rates of around 200 to 300 ft/min were very localised over Snowdon itself, and do not appear to have propagated downwind.

### **Pilot information**

The pilot held a British Gliding Association Gliding Certificate and was a senior instructor at his local gliding club. He qualified as a glider pilot in 1982. His logbook recorded that he had accumulated 3,349 hrs of glider flying.

He did not hold, nor was he required to hold, an EASA flying licence.

He had completed 30 hours gliding in the last 90 days and 17 hours in the last 28 days. He had flown solo from Talgarth four times in the week preceding the accident with flights ranging from 2 hours 5 minutes to 3 hours 25 minutes duration. On each occasion he landed back at Talgarth.

### *Medical*

The pilot had completed a medical declaration, signed by his General Practitioner, on 20 February 2015 which confirmed he met the Driver and Vehicle Licensing Agency (DVLA) Group 2 standard<sup>3</sup>. The declaration was valid until 20 February 2020.

The pilot's medical records did not show any pre-existing conditions which may have contributed to the accident. His family confirmed that he did not have any on-going or prolonged health issues.

The friend who helped the pilot launch the glider reported that he appeared to be in good health prior to the flight.

### *Post-mortem*

The post-mortem (PM) found '*a significant coronary artery atheroma and what appeared to be occlusive acute thrombus within the left anterior descending artery*'. The pathologist considered this occurred before the ground impact and would have caused sudden death or rendered the pilot unconscious. The PM also found multiple fractures which were not survivable. There was a lack of blood loss at the fracture sites indicating that the pilot may have been deceased prior to the glider impacting the ground. However, it is also possible that the pilot was only unconscious at the time of the impact and the multiple injuries he sustained in the impact may have contributed to his death.

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### **Footnote**

<sup>3</sup> DVLA Group 2 standard for professional driving allows the pilot to fly with passengers.

## Analysis

The investigation did not find any defect with the glider prior to the accident. The landing gear was extended before the accident and the airbrake lever was found out of the gate and slightly aft. The left wing was badly damaged in the accident, but the right wing was in good condition. The airbrake on the right wing was found to be partially extended and, whilst it is possible that this happened during the accident, it is considered more likely that the airbrakes were deployed slightly before the accident.

The post-mortem found that the pilot had suffered a blockage to a coronary artery. This occurred before the ground impact and would have either rendered the pilot unconscious or been fatal.

The post-mortem could not determine at what point prior to the accident the heart attack occurred. However, the pilot spoke to his wife approximately 30 minutes prior to the accident and did not mention feeling unwell. He took a photograph with his mobile phone approximately 15 minutes prior to the accident. After this the glider continued south-west soaring to about 3,500 ft then flying further south-west towards a quarry near Manod Mawr. The glider attempted to soar in an area above the quarry but did not gain height. The glider was clearly still being actively piloted at this stage. The lack of climb could be an indication that the pilot was starting to feel unwell or simply that there were no thermals in this area.

Having been unable to climb and now at quite low altitude a pilot would normally start positioning to land in a suitable field. However, after initially flying south-west the glider turned to the east and then south and flew towards high ground. It seems unlikely that an experienced pilot would intentionally do this, which suggests he was impaired at this stage.

The glider made several sharp turns at low altitude prior to impacting the ground. It is unlikely that an experienced pilot would intentionally manoeuvre the aircraft in this way which suggests he was significantly impaired at this stage. The landing gear had been selected down and it is likely that the airbrakes were partially extended which implies that the pilot was trying to land.

## Conclusion

The post-mortem found that the pilot had suffered a heart attack prior to the ground impact which would have either rendered the pilot unconscious or been fatal.

It could not be determined at what point prior to the accident the pilot became impaired, but it appeared that the glider was being actively piloted until a few minutes before the accident.

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