

AIRCRAFT ACCIDENT REPORT
OCCURRENCE NUMBER 05/31
ROLLADEN SCHNEIDER LS1-F
ZK-GIX
11 NM SOUTH WEST OF OMARAMA
12 JANUARY 2005



Glossary of abbreviations used in this report:

CAA	Civil Aviation Authority
E	east
ELT	emergency locator transmitter
FAI	Fédération Aéronautique Internationale
nm	Nautical miles
NZDT	New Zealand Daylight Time
S	south
THC	Tetrahydrocannabinol
UTC	Coordinated Universal Time
WGS 84	World Geodetic System 1984

AIRCRAFT ACCIDENT REPORT

OCCURRENCE No 05/31

Aircraft type, serial number and registration:	Rolladen-Schneider LS1-f, 270, ZK-GIX
Number and type of engines:	Nil
Year of manufacture:	1974
Date and time:	12 January 2005, 1600 hours ¹ (approx)
Location:	Omarama Saddle, near Omarama Latitude ² : S 44° 39.872' Longitude: E 169° 50.428'
Type of flight:	Private
Persons on board:	Crew: 1
Injuries:	Crew: 1 fatal
Nature of damage:	Aircraft destroyed
Pilot's licence:	Qualified Glider Pilot
Pilot's age:	44 years
Pilot's total flying experience:	273 hours, 107 on type
Information sources:	Civil Aviation Authority field investigation
Investigator in Charge:	Mr M A Carrelli

¹ Times are NZDT (UTC + 13 hours)

² WGS 84 co-ordinates

Synopsis

The Civil Aviation Authority was notified of the accident at 1700 hours on Wednesday 12 January 2005. The Transport Accident Investigation Commission was in turn notified shortly thereafter, but declined to investigate. A CAA site investigation was commenced the following day.

The pilot was on a private flight in the company of another glider, operating in the locality of Omarama. The conditions of the day indicated that the pilot would be making use of thermals and some ridge soaring. The glider had struck the ridge, close to the summit, in an approximately straight and level attitude. The wreckage of the glider was sighted within minutes of the accident, by the accompanying glider. The first people to arrive at the accident scene found the pilot had been killed during the impact.

1. Factual information

1.1 History of the flight

- 1.1.1 ZK-GIX was launched from Wardell Airfield by an aero tow at 1412 hours.
- 1.1.2 In the company of one other glider which had been airborne for some time, and had already proceeded to the Lindis Pass area and returned, ZK-GIX flew toward the Ewe Range to an area locally known as “Hugo’s Elevator”. The two gliders operated in this area for approximately ten minutes.
- 1.1.3 The gliders then proceeded westwards to the Omarama Saddle where they operated in reliable ridge lift in close proximity to the hillside.
- 1.1.4 At 1557 hours the accompanying glider flew away from ZK-GIX to explore an area slightly further north-west that looked promising for lift.
- 1.1.5 After breaking off, the accompanying glider received no response from the pilot of ZK-GIX on the radio, which he considered strange as he had had been quite talkative throughout the flight. At 1603 hours the accompanying glider pilot backtracked a short distance before spotting the wreckage of the glider.
- 1.1.6 The other pilot reported that there was no reason to suspect that there may have been anything amiss with the pilot or the glider.
- 1.1.7 The accident occurred in daylight, at approximately 1600 hours NZDT, at Omarama Saddle, at an elevation of 5700 feet. Grid reference 260-H40-595111, latitude S 44° 39.872', longitude E 169° 50.428'.

1.2 Injuries to persons

<i>Injuries</i>	<i>Crew</i>	<i>Passengers</i>	<i>Other</i>
Fatal	1	0	0
Serious	0	0	0
Minor/None	0	0	

1.3 Damage to aircraft

1.3.1 The aircraft was destroyed.

1.4 Other damage

1.4.1 Nil.

1.5 Personnel information

1.5.1 The pilot held a Gliding New Zealand Qualified Glider Pilot certificate issued on 15 June 2004 and a B certificate issued on 24 November 2000. He had also completed two of the three legs towards his FAI Silver Certificate. These were the duration of 5 hours and the gain of height (1000 meters), both achieved on 25 November 2000.

1.5.2 Up until 12 January 2005 the pilot had flown 95.5 hours on type, and had accumulated a total of 273 hours, all of which were on gliders. He had flown 4.75 hours in the previous 90 days.

1.5.3 The pilot had completed a biennial flight review on 20 December 2003 which was valid until 20 December 2005.

1.5.4 Doctor's records show that the pilot underwent a medical on 4 June 2003. The results of this examination are unknown as the actual medical declaration and certificate have not been found or sighted.

1.5.5 Both the tow pilot and the pilot of the glider accompanying ZK-GIX reported that the pilot was in good spirits and seemed fit and well before the flight.

1.6 Aircraft information

1.6.1 Rolladen Schneider LS 1-f serial number 270 was manufactured in the Federal Republic of Germany in 1974 and imported into New Zealand the same year.

1.6.2 Up until 12 January 2005 the glider had accrued a total time in service of 1345 hours. The most recent scheduled maintenance was an annual inspection at 1339 airframe hours on 8 August 2004. An annual review of airworthiness had been carried out on 8 August 2004.

1.6.3 At the time of the accident the glider had a non-terminating airworthiness certificate in the standard category, which was issued on 4 October 2000.

1.6.4 The glider was of single seat design and constructed of glass-reinforced plastic.

1.7 Meteorological information

1.7.1 The wind was a light north-westerly flow which was influenced by the terrain, making it vary between a northerly to westerly flow depending on the valley in which the gliders were operating. The wind was blowing up the northwest facing slopes thereby creating orographical uplift, mixed with some thermal uplift in nearby areas, on which the gliders were operating at the time of the accident. There was scattered cloud in the area with good visibility and no precipitation.

1.8 Aids to navigation

1.8.1 Not applicable.

1.9 Communications

1.9.1 Not applicable.

1.10 Aerodrome information

1.10.1 Not applicable.

1.11 Flight recorders

1.11.1 Not applicable.

1.12 Wreckage and impact information

1.12.1 The glider struck the ground on a south-easterly heading and rotated through 180° about its vertical axis before coming to rest. The initial impact point was on an approximately level surface. The main wreckage was found at the point where this surface changed into an upslope which continued for approximately a further 20 feet of elevation before reaching the summit of the ridge. The terrain consisted of jagged loose rocks.

1.12.2 The wreckage was secured for the next 41 hours. The delay in commencing the investigation was due to high winds on the saddle.

1.12.3 The ground impact marks and the damage to the glider indicated that the glider had struck the ground in an approximately straight and level attitude.

1.12.4 The wreckage trail from the first point of impact was 17 metres in length. The initial pieces of wreckage consisted of the wing tips. For a further 6 metres beyond the main wreckage site small pieces of composite material were found.

1.12.5 The forward fuselage from the nose of the aircraft to the wing mounting points was completely destroyed.

1.12.6 Both wings were significantly damaged on the leading edges and lower surfaces.

1.12.7 The empennage had separated from the centre fuselage at a point just forward of the vertical stabiliser.

- 1.12.8 Pre-impact integrity of the rudder, elevator and ailerons was positively established.
- 1.12.9 The weight and balance of the glider was not calculated. However there was no evidence to suggest that it was outside the manufacturers prescribed limits.

1.13 Medical and pathological information

- 1.13.1 Post-mortem examination of the pilot revealed that he died of traumatic injuries consistent with a high energy impact.
- 1.13.2 The post-mortem examination did not reveal any evidence of a pre-existing medical condition that could have resulted in incapacitation or affected the pilot's ability to fly the glider.
- 1.13.3 Toxicology tests showed that the pilot had a blood THC level of 7 micrograms per litre. The report stated that this level would be consistent with the pilot having smoked the equivalent of a single cannabis cigarette within about 3 hours prior to his death and that the level of THC in the pilot's blood was such that it is very likely that he was affected by the drug at the time of his death.

1.14 Fire

- 1.14.1 There was no fire.

1.15 Survival aspects

- 1.15.1 The accident was not survivable owing to the high decelerative forces involved. The pilot was restrained by a combination lap and shoulder harness, but the cockpit configuration with the pilot seated in a semi-recumbent position, meant that there was little crushable structure forward of the pilot. Any significant longitudinal impact in this type of aircraft usually results in the destruction of the cockpit area with consequent effects on the pilot.
- 1.15.2 The pilot was carrying a handheld ELT, but it was not activated.

1.16 Tests and research

- 1.16.1 Not applicable.

1.17 Organisational and management information

- 1.17.1 Not applicable.

1.18 Additional information

- 1.18.1 The toxicology report further stated that blood THC levels produced by smoking a cannabis cigarette and the rate at which the levels decrease vary widely between individuals and are dependent on a number of factors. These factors include frequency of use, smoking technique and experience, the size and potency of the cannabis cigarette and the individual's body weight.

The known dangers of driving after using cannabis are:

- Taking longer to respond to events;
- Reduced ability to think clearly; and
- Reduced ability to pay attention.

These dangers will invariably also relate to flying an aircraft.

1.18.2 Civil Aviation Rule 19.7 *Intoxicating liquor and drugs* states:

“No crew member while acting in his or her official capacity shall be in a state of intoxication or in a state of health in which his or her capacity so to act would be impaired by reason of his or her having consumed or used any intoxicant, sedative, narcotic, or stimulant drug or preparation.”

1.19 Useful or effective investigation techniques

1.19.1 Nil.

2. Analysis

- 2.1 There was no evidence to show any pre-accident failure of the airframe.
- 2.2 There was another glider pilot operating at the same location just prior to the accident. This pilot did not report any adverse or dangerous flying conditions.
- 2.3 Whilst glider pilots are generally able to predict the conditions in which they will be flying there is always the element of unpredictability regarding gusts and sink areas. It is possible that the pilot considered he had enough height above the ground to clear the ridge and encountered an area of severe sink. Alternately he may have been struck by a gust that exceeded the design authority of the gliders flight controls and thus was turned into the slope.
- 2.4 The glider struck the ground in a near straight and level attitude, which would be consistent with the pilot attempting to cross the ridge.
- 2.5 The nature of the terrain was such that it could have been quite difficult to judge the height of the top of the ridge. This combined with the fact that there was THC in the blood may have resulted in the pilot making an error of judgement.
- 2.6 It has not been possible from the evidence to determine a definite cause for the accident.
- 2.7 The fact that THC was found in the blood indicates that Civil Aviation Rule 19.7 *Intoxicating liquor and drugs* may have been contravened.
- 2.8 There are no safety recommendations as a result of this accident.

3. Conclusions

- 3.1 The pilot was properly certificated and rated for the type of glider he was flying. His medical declaration and certificate status was unknown.
- 3.2 The glider had been subjected to the appropriate levels of regular maintenance and appeared to be airworthy prior to the accident.
- 3.3 There was evidence of THC in the pilot's blood, which may have compromised his fitness for flight.
- 3.4 There was no evidence of any other medically induced pilot in-flight incapacitation.
- 3.5 The accident was not survivable.
- 3.6 The accident may have resulted from either, or a combination of:
 - A sudden change in the environmental conditions in which the glider was flying.
 - The effects of cannabis in the pilot's bloodstream hindering his ability to judge and react appropriately to his surrounding circumstances.

Report written by:

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