

AIRCRAFT ACCIDENT REPORT
OCCURRENCE NUMBER 12/679
SWING SPITFIRE 11 SPEEDWING
TREBLE CONE SKI AREA
WANAKA
17 FEBUARY 2012



Photo: www.swing.de

AIRCRAFT ACCIDENT REPORT

OCCURRENCE No 12/679

Aircraft type: Swing Spitfire 11 Speedwing¹

Serial Number: 45/111/46528

Year of manufacture: Not Known

Date and time: 17 February 2012, 1146 hours NZDT²

Location: Treble Cone Ski Area Access road
Latitude³: S 44° 38' 25.8"
Longitude: E 168° 54' 47.9"

Type of flight: Private

Persons on board: Crew: 1

Injuries: Crew: 1 (Fatal)

Nature of damage: Minor

Pilot-in-command's licence: Paraglider 2 Certificate

Pilot-in-command's age: 40 years

Pilot-in-command's total flying experience: Not known

Information sources: Civil Aviation Authority field investigation

Investigator in Charge: Mr J P Vincent

Abstract

1 A speedwing is similar to a paraglider but is only about half the size of an average paraglider with a reduced lift/drag ratio; higher descent rate and higher wing loading (https://en.wikipedia.org/wiki/Speed_flying).

2 New Zealand Daylight Time; UTC plus 13 hours.

3 WGS-84 co-ordinates.

The pilot had recently returned from employment in Australia and was keen to fly at Treble Cone. He had spent the previous two days before the accident flying at Treble Cone with a more experienced pilot. The pilots flew a number of flights in very light wind conditions.

On the day of the accident the wind was forecast to increase from 30 kilometres per hour to 50 kilometres per hour, from the west, that evening. Another pilot at the launch site spoke to the pilot before he launched. They discussed the current wind conditions and she warned that it “*could get quite funky with the wind coming over the back*”.

The pilot foot launched from the northern launch area at the Pub Corner site on the Treble Cone Ski Field access road. There were two witnesses to the accident. The first was a paraglider pilot who viewed the accident while airborne and the other (with aviation experience) was driving along the Wanaka Mount Aspiring Road.

The pilot was observed by both witnesses travelling south across the slope, fast and low, before colliding with the ground. Neither witness saw any part of the Speedwing collapse or other mechanical issue with it prior to the accident.

The New Zealand Civil Aviation Authority determines the probable cause of this accident as follows:

While manoeuvring the Speedwing close to terrain the pilot has collided at high speed with the ground. It is probable that the weather was a contributing factor to the accident with the Speedwing entering an area of descending air at low level with little opportunity for the pilot to recover.

Observations

Weather

Other pilots, both at the launch site and who had flown prior to the accident reported the weather as fine but they could see white cap waves on Lake Wanaka and were expecting the westerly winds to increase at Treble Cone. The pilots reported strong thermal updraft activity on the slope, interspersed with a westerly wind flowing over and down the ridge from behind. The conditions appeared to be cyclical but inconsistent in nature.

A paraglider pilot attempting to launch after the accident occurred reported the wind as “*variable in direction and strength, sometimes dropping away and then coming back with moderate strength*”. After twenty minutes attempting to launch his paraglider, this pilot gave up and packed his equipment away.

An experienced paraglider pilot commented “*on this particular day and given the conditions I would not have personally chosen to fly the particular line or as close to terrain as [the pilot] was doing*”.

With wind conditions as reported, it is highly likely there were variable and unpredictable areas of both updraft and downdraft at low level.

Wreckage and Survivability Information

A site investigation was conducted by the New Zealand Civil Aviation Authority. Inspection of the accident site and reports received indicate that the pilot impacted the ground at high

speed. The Speedwing was inspected in conjunction with a local Paragliding Safety Officer. The inspection found no defects that may have contributed to the accident.

Survivability

The pilot wore protective equipment consisting of a safety helmet, harness, mountain bike type back protector and knee and skin protectors. Information from the autopsy report indicates that the pilot received injuries consistent with a high speed accident.

Speedwing

Attached to the Speedwing was a placard with the following information;

“WARNING!

SPEEDRIDING IS DANGEROUS

This speed rider is a sports equipment and NOT an aircraft and therefore has no flight homologation. Caution: Swing Flugsportgeräte GmbH does not assume any responsibility or legal liability for the usage of this product.

- 1) Always use extreme caution when using this product.
- 2) Only use this product if you are in good physical health.
- 3) Never act in a careless manner when using this product
- 4) The user is responsible for his/her own safety, as well as for third-parties safety, while using this product
- 5) The user is alone liable for any possible damages while using this product.
- 6) Read the manual carefully before the first use.
- 7) Follow the law which is effective for using the product in the respective country.”

This warning is also strongly reiterated in the manual for the Speedwing with the similar comment that *“This speed rider⁴ is an item of sporting equipment and NOT a piece of aviation equipment and therefore it does not have aviation certification.”*

Section 2 and 4 of the manual stipulates;

“Please bear in mind that the Spitfire was designed for flying on skis.”

“The Swing Spitfire is not suitable for foot-launch⁵. We recommend that it be used only in combination with skis.”

It was noted that the Speedwing had been inspected as a new glider by the New Zealand Hang Gliding and Paragliding Association on the 5 December 2011 and had a current Paraglider Warrant of Fitness.

Regulatory Position of Speedwing Operations

Although the Speedwing is not a certified product under the Civil Aviation Rules (CARs), it meets the definition of “aircraft” under the Civil Aviation Act and CARs. The Speedwing constitutes a paraglider for the purposes of the CARs. The following definitions (in Rule Part 1) are relevant:

4 Speed-Riding is flying down snow covered slopes with skis with frequent ground contact (<http://www.speed-flying.com/what-is-speed-flying>).

5 Speed-Flying is flying down snow free slopes after foot launching with no ground contact until landing (<http://www.speed-flying.com/what-is-speed-flying>).

- **Paraglider** means a hang glider with no rigid primary structure:
- **Hang glider** means a glider, including a powered glider, that is capable of being launched and landed solely by the use of the pilot's legs, and includes paragliders:

CAR, Part 106 *Hang Gliders-Operating Rules* prescribes rules for the operation of Hang Gliders and Paragliders. It outlines standards for licensing and exempts some general rules in favour of specific requirements for operation of Hang Gliders and Paragliders.

Rule 106.5 *Pilot Requirements* stipulates a pilot must;

- (1) be a bona fide member of a hang gliding organisation⁶; and
- (2) hold an appropriate hang glider pilot certificate; and
- (3) comply with the privileges and limitations of his or her pilot certificate and any applicable ratings; and (4) comply with the operational standards and procedures of the hang gliding organisation.

Rule 106.19 *Safety Equipment* stipulates;

Each pilot and passenger of a hang glider shall wear a—

- (1) serviceable rigid protective helmet conforming to the standards of a hang gliding organisation; and
- (2) a harness of a type conforming to the standards of a hang gliding organisation, and,

Rule 106.55 *Minimum Altitude*;

A person may fly a hang glider below a height of 500 feet above ground level for ridge soaring, if such flight does not hazard persons or property on the ground.

The New Zealand Hang Glider and Paragliding Association introduced operational standards regarding speedwing operation due to a previous incident⁷. These required the pilot prior to completing any Speedwing training to;

- hold a Paraglider Certificate 2
- complete 40 hours flight time
- complete at least 40 flights

The pilot had completed a Paraglider Certificate 2 and completed 40 flights. However it could not be accurately determined how many flight hours the pilot had completed.

Analysis

The pilot was flying in close proximity to the ground, tracking downhill rather than ridge soaring as allowed by the exemption to operate below 500 feet.

From the witness accounts and weather conditions reported it is probable that the pilot was operating the Speedwing close to the ground when he encountered an area of descending or

⁶ CAR Part 1 provides that: Hang Gliding organisation means the holder of an aviation recreation organisation certificate issued in accordance with Part 149 that authorises specified privileges associated with the operation of hang gliders. Part 149 organisation certificates are typically issued in conjunction with an instrument of delegation permitting personnel within the organisation to exercise limited powers of the Director (such as the issue of certificates etc.).

⁷ CAA investigation 11/SAI/367 into an accident that occurred on 7 January 2011. Safety Action 12A1 was issued to and completed by NZHGPA to “incorporate guidance on transition from a paraglider wing to a speedwing in their OPM”.

“sinking” air. Due to the low level there was little available height to counteract this sink, resulting in a high speed impact with the ground and fatal injuries to the pilot.

Although the pilot was wearing protective equipment, as required, it was inadequate to counter the impact forces received.

The pilot had completed appropriate licence requirements, however total flight time was not determined.

The Speedwing is not a certificated aviation product, and has not undergone testing to any certification standards. It is being sold as a sporting good.

At the time of the accident, the pilot was operating the Speedwing outside the manufacturer’s instructions, being foot launched and recovered by landing on foot (speed flying) rather than on skis as recommended (speed riding).

It was also being operated outside the exemption for ridge soaring.

Conclusions

The pilot had completed the licence requirements required by the New Zealand Hang Glider and Paraglider Association.

The pilot was wearing safety equipment as required by the CARs.

The pilot was completing a speed-flying exercise, contrary to the manufacturers recommendations contained in the manual for the Speedwing.

It is probable that the pilot encountered an area of low level descending air from which he could not recover.

Justin Vincent



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22 July 2013

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