

Inquest into the death of Bernhard Zwahlen COR 132/05

Findings delivered at Townsville 27th February, 2008.

On 11th September 2005, Bernhard Zwahlen, a very experienced and respected hang glider pilot aged 49 years, was involved in an incident at Hughenden Airport. He had 735 recorded flying hours including 60 hours in the 90 days prior to the incident, and held Pilot certificates in Hang Gliding for Airtow, Advanced, and Groundtow. He had been taking part in the Cairns Hang Gliding Club annual 3 day weekend trip to Hughenden.

As there are no natural escarpments at Hughenden, the hang gliders are towed on the runways at Hughenden Airport behind a vehicle using “static ground tow”, until they rise into the air and continue gliding until they land. At the top of the tow, the tow rope is released from the vehicle and aircraft, and the aircraft continues its flight until it lands. The thermal activity is particularly good in the area and the deceased on one such flight over the weekend had been able to glide over 70 kilometres north and past Porcupine Gorge.

The static line tower this weekend, Neville Akers had over 20 years’ experience and knew the preferences of each pilot well. He was accompanied in the tow vehicle at the time of the incident involving the deceased, by Ian Douglas Graham, Cairns Hang gliding Club Safety Officer, as observer.

The deceased was flying an ‘Airborne’ C2 Hang glider. It was in good condition, and he had used it previously. It was equipped with a parachute which was in working order. He was wearing an approved helmet. He did not carry a hook knife, however a pocket knife was in his kit. The bridle and tow line set up had been modified by the deceased, and the equipment was not standard. The modification and their impact are described in the report of Chris Fogg, reproduced below. The modifications were for the purpose of retracting the tow bridle in between the wing surfaces after release from tow.

Bureau of Meteorology data shows that isolated showers in the area on the day reduced the thermal activity in the area. The maximum temperature for the day, 25.5deg. C, was reached around the time of the incident. The wind was very inconsistent, with gusts to 17 km per hour at the time of the incident, from the West North West, creating an intermittent crosswind/head wind on the airstrip.

On the last day of the trip, the day of the incident, storm activity in the area resulted in decreased thermal activity, resulting in a reduction in the ability to fly greater distances. The normal flying pattern in these changed circumstances used on this day was to take off, release and fly back down to the starting point, practising “static tows”. Once the pilots reached the height of the tow rope, approximately 600 metres, they flew their aircraft back to the starting point.

At about 4.57pm, the deceased hooked onto the tow line, and after about 1 minute, called over his radio, “Ready for tension” and Akers, the driver of the tow vehicle took up the tension on the rope. At the direction of the pilot, the deceased, Akers accelerated, towing the aircraft at speeds between 20 and 45 kilometres per hour. The deceased’s radio timed out (it is locked on for a time of about 1 minute 40 to 50 seconds at each press, to enable only the pilot to communicate with others on the same channel whilst keeping his hands on the cross bar of the aircraft), and he reactivated it whilst still being towed. The deceased directed Akers to take the tow vehicle to the end of the strip, right to the fence, giving him a longer tow than was normal. He was heard to call that he was releasing, and Akers observed the pressure meter in the vehicle go to zero, confirming this, as well as hearing a clunk on the line, indicative of a release. He then released the rope from the vehicle and as he performed a U turn, but did not see the rope on the ground as expected, he observed the rope to be still attached to the aircraft.

Ground crew were unable to communicate with the deceased to give him verbal advice, due to the radio being locked off. The aircraft was seen to go into a left hand turn, with the rope being dragged over the trees and foliage on the edge of the runway. The aircraft turn became tighter and it was spiralling downwards, and the deceased was heard to say words like “I’m in trouble now” in a distressed voice. A whistling sound was heard from the aircraft, and the impact of the aircraft hitting the foliage as it came down out of sight was heard over the radio. The deceased was located about 50 metres outside the airport boundary line at the base of a tree. He had not deployed his parachute, nor accessed a knife to cut the aircraft free of the tow line. Unfortunately those on the ground could not remind him to deploy the parachute (if in the stress of the conditions he had overlooked this possibility), as he could not hear them.

He suffered extensive injuries, including catastrophic head injuries, multiple fractures including to the spine, pelvis and left ankle, a splenic laceration, and his right leg was amputated below the knee. He was administered first aid, and transported initially to Hughenden Hospital and the same day, evacuated by Flying Doctor Service fixed wing aircraft to Townsville

Hospital, where he did not survive his injuries. His wife Monika, his two daughters, and his sister were present by his bedside when he died. Life was declared extinct at 2235 hours on 15.9.2005.

The investigation showed that all procedures outlined in the Hang Gliding Federation of Australia, Towing Procedures Manual with the exception of the carrying of a hook knife by the pilot, were complied with, by all connected with the incident.

The General Manager Hang Gliding Federation of Australia investigated the incident and prepared a Fatal Accident Report authored by Chris Fogg, General Manager.

The findings of that investigation are reproduced as follows:

1. Several modifications to the standard towing system at the pilot end had been made. The same modifications had provided no problems during previous tows.
2. During the release from the tow line the snap link on the tow line has caught the bridle, piercing the bridle's weave with the hook shape of the snap link. Had this snap link been a closed screw gate type link there would have been no chance of the bridle being caught by the snap link.
3. The bridle being made of loose weave allowed potential for the snap link to catch between the weave. The bridle in itself was not an issue but combined with the type of quick link being used there became potential for the link to snag the open weave of the bridle. Quick links have been employed in towing operations for their ease of use. However there have been other instances where the snap link has re-engaged the pilot onto the tow line after the initial release.
4. The pilot attempted to release from the top attachment of the bridle system by pulling on the V.G cord. This was another modification that the pilot had had made so that by pulling on the V.G cord it would initiate the top release and via a bungy cord have the bridle retract into the sail. By extending the length of the V.G cord during this manoeuvre it gave opportunity for the V.G cord to entangle the tow line which was now hooked into the bridle by the snap link.
5. The pilot was not carrying a hook knife or other accessible means of severing the tow line if an event such as occurred in this incident were to arise. It is reported that he did have a pocket knife stored in his harness. Had the pilot been carrying a hook knife or similar tool in an accessible position the pilot would likely have been able to cut away from the tow line and fly the glider to a safe landing. It should be noted that a hook knife is strongly recommended in the HGFA Tow Manual (section 3.7.2) as a piece of equipment that should be carried in all tow operations in the case of tow release failure.

6. The pilot made use of a standard chain link in place of the recommended seamless stainless steel ring (section 3.3.1 HGFA Tow Manual).
7. Mr Zwahlen was an experienced and respected pilot in tow operations. Although it was known by fellow pilots that he was experimenting with his own tow bridle system his experience with design and use of tow equipment was respected enough to allow him to continue towing with his choice of equipment.

Pursuant to s 45 (2) Coroners Act 2003, a coroner who is investigating a death or suspected death must, if possible, find--

- (a) who the deceased person is: Bernhard Zwahlen
- (b) how the person died: the deceased died when the hangglider aircraft he was piloting, being static towed by a vehicle on the ground, failed to separate from the tow line, which was then dragged by his aircraft, causing him to lose control of the craft, and crashing amongst trees.
- (c) when the person died: 15th September 2005
- (d) where the person died: Townsville Hospital, 100 Angus Smith Drive, Douglas 4814, Queensland.
- (e) what caused the person to die: 1 (a) Head injury due to 1 (b) Hang Gliding Accident (Pilot)

The deceased was born on 25.6.1956, and until his death he resided at 749 Seamark Road Malanda, Queensland 4885. He was married and had 2 daughters.

Coroner's comments

Pursuant to s 46 (1) of the Act, a coroner may, whenever appropriate, comment on anything connected with a death investigated at an inquest that relates to--

- (a) public health or safety; or
- (b) the administration of justice; or
- (c) ways to prevent deaths from happening in similar circumstances in the future.

Recommendations: The coroner has had the benefit of the analysis by Mr Chris Fogg, General Manager of the Hang Gliding Federation of Australia of the recommendations emerging from the investigation and the recommendations I make as a consequence are:

1. That the HGFA Tow Manual be amended to recommend that screw gate type rings, NOT snap links be used as the connection ring between the towline and the pilot to minimise the risk of the bridle or any other part of the craft being snagged after release. The potential for the clipping ability

of the snap link will be eliminated by this means, and thus the risk of the pilot and craft remaining attached to the tow line after intended release.

2. That all clubs make it mandatory that a knife be carried in an accessible position while in flight. (It is noted that the HGFA Tow Manual and formal pilot training procedures already strongly recommend this and that the pilot examination for achieving the tow endorsement includes a requirement that this knowledge be held.)

Stephanie Tonkin

Coroner
Townsville
27th February 2008