

## **What the GNZ Operations Team is Talking About . . .**

A summary of key items discussed at the Operations Team on-line meeting on 24 May 2022. David Moody (North), David Hirst (Central), Wal Bethwaite (South) and Martyn Cook (NOO).

### **1. Incident Reports for April-May 2022**

- aerotow upset at 200 ft, rope broke, towplane crashed into trees, tow pilot fatally injured
- glider out of position at top of aerotow, tow pilot concerned, instructor not concerned
- nosewheel collapse on tow plane following a heavy landing, multiple contributing factors
- very low turn onto final at end of a competition flight, other landing options were available
- rear canopy of two-seater opened and broke during winch launch - not locked before takeoff
- shards of steel winch cable passed through protective grate, contacted leg of operator
- ATC camp, launch commenced then aborted by glider pilot due to glider landed ahead
- ATC camp, heavy landing on last flight of day, instructor slow to react, tiredness possible
- ATC cadet retrieving aerotow rope, ran in front of wing, operation was paused for rebriefing

### **Commentary on Selected Incidents**

*Aerotow Upset:* It's distressing to receive news of a fatal gliding accident, and this one was no exception. Without prejudice to the official investigation the Ops Team discussed what is known about aerotow upsets, especially those occurring at low level.

One observation was that the way we teach aerotow in NZ could be a contributing factor. In particular, the exercise of "boxing the wake", which is normally done at a safe height and under smooth flying conditions, could give trainee pilots the impression that being quite a long way out of position on aerotow is benign and nothing to be concerned about. It is possible, for example, to fly well out to one side of the towplane provided it is all done very smoothly.

However, a bow in the rope or a small amount of turbulence could lead to the rope being jerked tight, and this sideways jerk could easily flick the towplane into a spin or very steep dive. In this incident the tow rope was reportedly jerked tight fiercely enough to break it.

A second incident report this month (actually two reports - one from the tow pilot and a separate one from the instructor in the glider) further amplifies the possibility that glider pilots may tolerate being well out-of-position during the aerotow without appreciating the risk to the tow pilot. In this case the tow pilot reported that the glider kited off tow, and he had to apply considerable back pressure to compensate - but the glider instructor did not believe the tow pilot had been threatened and brushed aside the feedback. What feels benign from the glider can be serious for the towplane.

Instructors are urged to tighten up standards on aerotow. When boxing the wake it should not be necessary to move laterally beyond the wingtip of the tug, nor fly higher than the tug at any time. "Boxing" shows the pilot where the slipstream is, and tests their ability to move back into position, but it must also be stressed that holding position just above the slipstream and laterally in line is required at all times - or the glider pilot must release to avoid endangering the tow pilot.

A number of practices or factors which could contribute to an upset were identified:

- a wing dragging along the ground during aerotow launch can cause a glider to veer to one side
- an accurately-controlled ground roll allows the combination to accelerate much faster
- lack of currency with aerotow or in the particular glider can be a factor
- Australia has mandated the "low tow" position (the glider positions below the slipstream)
- it's tricky for the tow pilot to monitor the glider at full power - mirror is small and vibrating
- there is no national forum for tow pilots to discuss and provide feedback to glider pilots
- tow pilots are typically reluctant to jettison a glider to save themselves, especially if low
- once an upset starts it develops into an unrecoverable situation unbelievably quickly

A useful exercise is to ask the tow pilot to simulate towing in more turbulent conditions, to check whether the trainee is able to accurately hold position (and promptly release if unable to do so). It's also important that the glider is - where possible - stable behind the tug at the point of release, and that the rope is seen to drop away before a gentle climbing turn to the right is initiated.

We learned from a previous upset some years ago that a *sideways* jerk on the rope can be just as serious as one applied vertically upwards. So keeping straight laterally behind the tug is extremely important, especially on takeoff. This has all been written up and illustrated in the Pilot Training Program under "Don't Upset The Tug". Also refer to the "Eventualities" check list for aerotow.

**Cramped Airfield Conditions:** This was identified as a factor in several of the above incidents. The aborted launch happened at an ATC camp where five two-seat gliders were operating. One glider landed just ahead and slightly to the side of where a tug-and-glider were about to launch. The ground crew and tow pilot decided to launch anyway, then the call was made to abort. There is often "pressure" at these events to get through a large number of flights as efficiently as possible, and this can set up conditions where poor decisions are made, and erosion of safe operating procedures becomes tolerated.

Cramped airfield conditions also contributed to an incident where the tow plane bounced and landing heavily, collapsing the nosewheel. In this case the landings were being made downwind in very light wind - until an unhelpful gust occurred. Winch and aerotow operations were both being conducted on the day, with winch cables laid out on the ground. The tow pilot might have chosen to go around if the throttle was able to be quickly flicked open, but it was a vernier type and not easily opened in haste. A more detailed report on this incident is under preparation.

A congested landing area was also a contributing factor in the "low turn onto final during a competition flight", as the favoured landing area (straight ahead) was not available as expected due to other landed gliders. These are all situations where the "Swiss Cheese" model applies. Each incident has multiple contributing factors, with no single factor being sufficient to cause the incident - but the cumulative effect is what finally causes it to happen.

Space limitations on and around every airfield need to be respected, and multiple launching and landing activities carefully coordinated if we are to maintain a safe environment.

## **2. Management at Air Training Corps Events**

A number of incidents originated at ATC events. It is understood that these events need very good organisation and close co-ordination to be safe and effective. The issue of tiredness at the end of a long day, for both trainees and instructors, is another contributing factor.

David Moody has observed a recent ATC camp and continues to refine the GNZ Advisory Circular [AC 2-12](#). The philosophy behind the AC has been well received by ATC. However, the devil is in the detail, and David would welcome feedback and suggestions for improvement.

Some of the key issues are:

- to clarify the difference between *guidance* and *requirements* at these events
- exchanging risk management plans - and how each party will take responsibility for certain risks
- the need for daily briefings (and sometimes rebriefings during the day)

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30 May 2022