



GRAPEVINE

The Services Region Flight Safety Bulletin - March 2002

DISTRACTION

During a flap training flight in a Janus, the P2 (an instructor) was working hard in turbulent conditions. The P1 was prompting throughout the circuit, and eventually took control on the base leg but landed the glider with the wheel up.

It's easy to get distracted, particularly under those circumstances. But maybe the frequent prompting should have indicated that the P2 was somewhat stretched and probably using all his capacity to just fly the glider. Either way, the site CFI suggested that pre-landing checks by the P1 would have avoided the accident.

MIND THE GAP

A solo pilot of limited experience climbed on a winch launch through a small gap in the widespread stratus cloud, eventually releasing at 1800'. Concerned that someone else might launch through the same gap, the pilot flew away from the overhead, descended through cloud and popped out at about 700' agl. The subsequent field landing resulted in an arrival in a bramble bush and a broken canopy.

Not the first pilot to be caught out by a tempting gap! However, the hazards of winching launching into deteriorating skies are fairly well known - they include, of course, the gap closing underneath, the possibility of someone else being up there but not seen, and the very exciting possibility of flying into a drogue parachute attempting to abandon the launch having accidentally penetrated cloud in the full climb.

DON'T JUST SAY IT - CHECK!

As the K21 whizzed up the wire, the rear canopy flew up, sheared off, struck the fin and fell to the ground. The glider completed a short circuit and landed normally.

"Closed & locked..." ...and resists upward pressure.

WE'VE BEEN MEANING TO FIX THAT...

As a K13 was being flown into a winch launch failure recovery by the P2 after the P1 released the cable, the crew were faced with an inflated cable parachute. P1 immediately took control and pulled off a successful recovery without further incident. Subsequent investigation found a number of damaged shroud lines that dramatically changed the behaviour of the cable parachute.

Should it take an incident before we get around to fixing those annoying little snags on the launching equipment?

WHAT GOES UP, MUST COME DOWN

A K13 was being winch launched into a strong wind. The launch failed, but despite lowering the nose to chase a planned approach speed, the glider failed to reach a safe speed and landed very heavily. The glider was substantially damaged and the instructor hospitalised.

Winch launching in strong winds can be great fun and good value. However, the wind gradient that assists the glider's acceleration away from the ground can then bite when the glider pilot tries unsuccessfully to accelerate back down through the same wind gradient during a launch failure recovery.

The best advice is to always ensure that the glider does not climb steeply until a safe speed and safe height has been reached. If you have to fly in strong wind conditions, significantly increase the height to which you maintain the shallow climb.

TIME TO GO

Previous editions of Grapevine have highlighted mid air collisions, including the fact that a German study concluded that collisions resulting in loss of control are rarely survivable below 3000'. There are a whole bunch of factors all of us should consider if we are to stand any chance of getting out of a glider that has very suddenly become an unhealthy place to stay - facing the reality of the situation and to the fact that it's time to get out is the first, but by no means the last problem.

Some RAFGSA pilots will recall the incident back in the 1980's when a pilot baled out of an ASW19 having carried out a winch launch with a disconnected elevator. Aware of the problem half way up the launch, he released as high as possible and prepared to jump. But by 900', with the glider gently porpoising in a straight glide, he found himself still struggling to work the canopy jettison system. After realising that three knobs needed to be moved, he eventually stepped onto the wing and his parachute opened fully at about 100', resulting in a safe landing for the pilot.

The instructor and second pilot of a Janus, that in 1995 was cruising underneath well-developed cumulus cloud at 5000' agl and at 95 kts, describe some of the problems they experienced during an incident that occurred when a parachutist, freefalling from the cloud, collided with their glider and died as he was unable to open his 'chute. Witnesses said that the glider wreckage was on the ground about 30 seconds after they heard the impact. This equates to a rate of descent of about 10,000 fpm. 'J' (front seat) recalls the incident:

"Just prior to the 'bang' a dark shape flashed past to the left, which I thought was a bird. Immediately following the bang the glider started to roll left. I applied full right aileron, but it was not sufficient to stop the roll to the left. I looked at the left wing and saw approximately one third missing. It was obvious that we would have to bale out as I was unable to control the glider to either land it or allow a more controlled bale out..."

In this case, seeing the damage probably helped with the decision making process! Damage behind the cockpit is impossible to assess, and we all know that seriously damaged composite glider structures in particular will tend to fail progressively as the structure 'unzips' itself under the flight loads. So if you suspect the back of the glider has taken a hit, you could still be in big trouble even if the glider still feels controllable. But the point is, you need to make the right decision - and quickly! The front seat pilot carries on his description:

"...P' (rear seat) called 'canopy!' No discussion required, canopy gone. I may have pushed it clear (no problems), straps undone, get out of the glider, can't sit up, keep trying, lifting my feet with my hands over the left of the cockpit. Keep trying, having problems, unlock the airbrakes - see if that helps, keep trying, lifting one foot and then the other over the side of the cockpit, finally both feet are over the side, I lever myself over the side, sunglasses get ripped off - quite comical, finally out, head knocked by something, tumbling through the air, find the D-ring, at last pull the D-ring - deceleration, parachute open..." J's parachute, according to witnesses, opened at 600-700' agl. Climbing out of a cockpit under rapidly increasing G-forces was extremely difficult, even for this fairly fit male in his late

twenties. P, similar age but a bit slighter, takes up the story as experienced from the back seat:

(After calling 'canopy!' and pulling the jettison levers) *"...I released my harness straps and tried to exit the cockpit. By this stage the airspeed and G-forces had increased to the extent that I had trouble even lifting my arm onto the edge of the cockpit, never mind the rest of my body. As I struggled, I could see J desperately trying to lift his legs over the front cockpit side..."*

After seeing J get clear, P was aware that the glider was still spiralling. He pulled back hard on the stick and the glider pitched up and began to spin, with the associated reduced G-forces. But P's problems were not over yet: *"...Realised at last that I could climb out! Located the D-ring and tried to exit the cockpit. Something still holding me back...saw the harness crotch strap still plugged in...desperation as I had to let go of the D-ring to release the strap...right hand on the D-ring and out I went. Pulled the D-ring as I exited and threw my limbs out as I looked down at the ground. Horrible moment as I realised that I was probably too low for the parachute to save me..."* P jumped from the glider at 200-300' agl, his parachute opened at 50' giving him about 1 second under the canopy, and he landed about 10 metres clear of the glider wreckage.

So just to recap, the collision occurred at about 5000', the guys made the decision to jump immediately, but most of that available height was taken up with the struggle to survive. It may be worth considering what YOU would do in the event of a mid air collision - but do it now, on the ground.

To quote the guy that jumped out of the ASW19 with a disconnected elevator, *"The reason I got away with it was that I had made the decision when to jump years before I needed to do it."*

CAUGHT - AGAIN!

At a narrow strip site surrounded by rough, rock-strewn terrain, a recently qualified Bronze pilot was scratching in weak lift following a winch launch. At 600' indicated, the pilot suddenly looked up (!) and realised that he was poorly positioned for a circuit onto the strip, and set off for the base leg. Unfortunately, and rarely at this coastal site, the wind was straight down the strip - this meant that on this particular run, the breeze flowed over a small ridge just before the threshold producing a 'clutching hand'. The hapless K8 pilot found himself sinking rapidly as he turned in low from the base leg, resulting in an attempt to hop over the ridge crest onto the airfield. The left wing dropped and the glider impacted onto the ridge causing serious damage.

Every year early solo pilots (and others!) get caught out in weak conditions. A quick reminder by a more experienced pilot just before launching can help raise awareness and get the pilot thinking.

SHOCKING

During a recent on-aircraft engine inspection, three of the four cylinders on a tug were found cracked.

This was a high hour engine. However, Textron Lycoming SI 1094D recommends a max cooling change of temperature of 50F per minute to avoid shock cooling. Consistently fast letdowns (aerotow descents) with the incorrect airspeed/rpm mix can lead to excessively worn and broken rings, warped exhaust valves, bent pushrods, plug fouling and cracked cylinder heads. The RAFGSA Centre, operating Supermunks and Pawnees without cowling flaps, recommends gradually and smoothly bringing back the rpm after release to eventually descend with 2000 rpm and 100 kts. If in doubt, talk to your tug master and tug maintainer!

MORE SHOCKS

A number of recent 'arrivals' have again demonstrated the value of energy absorbent cushions - don't get airborne without one, is probably the best advice. Dr Tony Segal has carried out extensive tests and proved that these cushions are effective in preventing or reducing back injuries during heavy landings in gliders. The BGA's 'Sailplane & Gliding' magazine, the SSA's 'Soaring' magazine and www.glidingmagazine.com contain interesting articles describing some of Tony's work.

CURRENCY

Poor weather, little soaring potential and a certain amount of apathy may have meant that many club pilots have done little or no flying over recent months.

Does your club have a 'system' in place to ensure that appropriate two-seat flying is available for those that may feel they need it?

A flight with an instructor should be an enlightening and confidence building experience - but only if the instructors who will be providing the experience are up to speed! A number of accidents in 2001 involved flights where an instructor was the handling pilot.

CAR 2, GLIDERS 0

As he was reversing his automatic car towards the tow out arm attached to a K21, the driver became confused and hit the accelerator instead of the brake. The car shot into the K21, pushing it into a K8 parked just behind. The person waiting to connect the K21 to the car narrowly escaped serious injury.

Cars and aircraft don't mix well - how about moving the glider to the car, rather than the other way around?

Ground handling accidents contribute significantly to our rising insurance costs.