Gliding SAFETY
PROMOTING SAFETY IN GLIDING
Winter 2002

THOUGHTS ON SAFETY AWARENESS

The last year was, without doubt, a very grim period in terms of accidents. It was, at once, sad, disappointing, baffling, infuriating; to coin a Royal expression of a few years ago, an *'annus horribilis'*. It seems that, however hard we try to promote safety, the accidents keep coming. The usual 'hardy annuals' were still there (field landings, poor circuit planning and approach control, Instructor failed to take over in time, winch-launch failures) together with a range of other accidents, some of which are well nigh mind-blowing – more on that elsewhere in this Newsletter. But over-shadowing all of these accidents were the fatalities and other serious injury accidents, caused mainly by mid-air collisions and 'spin-ins' from steeply initiated winch-launches. Dave Wright's detailed and skilled accident analysis will undoubtedly give us the full story but it was an extremely sad year.

So where do we go from here? One thing is utterly certain; we have to continue to press home the importance of safety awareness by training, example, Club lectures, safety 'flashes', in fact by any means which enable pilots to enjoy their sport as safely as possible. And enjoyment is the feature of gliding which benefits greatly from collective safety awareness. Almost no-one can fully enjoy flying whilst harbouring doubts about the safety of Club operations, general airmanship or even their own understanding of the skills they are trying to employ. And if, after the past year, some pilots are totally satisfied with their own safety awareness and that of their Clubmates, perhaps they should consider replacing their gliding with, say, origami or something similar!!

It sometimes helps to consider the safety of each flight as a continual process of assessment and re-assessment. Whether we are dealing with well co-ordinated and controlled handling of a glider, how best to conduct each flight tactically, sound circuit planning and approach control or the implementation of that oft-repeated phrase 'good lookout', each of these aspects of gliding requires that almost automatic process of frequent re-assessment to achieve the safest end result. The least safe pilot is the one who carries out each flight with 'brain in neutral' and a firm belief in the ability of the glider to make the decisions that are required!! In the case of 'lookout', I sometimes wonder if the word itself has become stale and we need other phrases which bring into sharper focus the whole end meaning, i.e. ***the avoidance of collision.***

TAXYING INTO OBSTRUCTIONS

Most Gliding Clubs have one or two of them, sometimes more. 'Them' are the pilots who have a desperate need to impress their Clubmates by showing how 'expert' they are at such manoeuvres as landing their glider and then taxying right up to and behind other gliders parked in a launch queue OR carrying out the last flight of the day, landing and then taxying almost into the mouth of the hangar OR finishing a flight with a diagonal 'beat-up' of the launch point and spot-landing almost in the launch queue, in the sure and certain knowledge that the natives on the ground are gasping with admiration. On most occasions, the 'natives' are either thinking or saying "What an absolute p****r"!. Sooner or later the inevitable happens, of course, and the pilot taxies into an obstruction of some sort, be it glider, car, building or whatever, that is if he/she completes the 'beat-up' successfully!!
Each year without fail such accidents happen and the pilot often blames the glider because "the wheel-brake wasn't working as it should"!
We have enough accidents each year without the need for these truly indefensible ones so please ensure that you complete each flight uneventfully by directing the approach and subsequent landing run along a line which is not aimed towards or close to obstructions.

THINK SAFETY EVERY TIME YOU FLY...SAFETY IS NO ACCIDENT

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ACCIDENTS VARIOUS

There have been requests from a number of pilots, including CFI's, asking for more detailed descriptions of a range of accidents, to provide discussion topics. So this Newsletter is devoted, in the main, to addressing those requests. I have opted deliberately to omit winch-launch failures and mid-air collisions as those topics have been and continue to be dealt with as separate issues. So here we go:-

INTERRUPTIONS

Just after release from aerotow, an SZD55 pilot noticed the safety pins from his glider's main wing pins hanging from the camera mount. In his own words, he then "landed promptly", presumably having got over the immediate digestive problems! During rigging earlier that day he had been interrupted just after fitting the main pins and had then forgotten the safety pins. To compound the problem, the subsequent D.I. had not revealed the error either – some D.I.!! Needless to say, the CFI's comments were not very supportive.

At another Club, as readers of the previous issue of S. & G. will have already noticed, an ASW20 pilot rigged his glider, towed it to the launch point, disconnected the elevator for ease of inserting tail ballast(water), forgot to re-connect the elevator and then winch-launched and carried out a cross-country flight of several hours before landing at another gliding Club. The handling (with use of flaps) seemed normal up to that point. He later commenced an aerotow, hoping for a return flight to his own Club and there the handling problems began! Whilst the previous winch-launch and flight had not required any significant elevator down-load, the pitch control inputs needed for the aerotow were not available. Only judicious use of the flaps enabled him to prevent the glider pitching nose-up soon after take-off and he then released the tow-rope and landed safely, albeit in a field beyond the gliding site. Upon hearing the sorry tale, the tug pilot must have been a mightily relieved person!!

The lessons to be learned from these incidents are as clear as they have ever been before and you may wish to think through each incident and decide how many opportunities there were to correct the initial error. When you rig a glider, do not be waylaid by any interruption once you have started. Ensure that, without exception, there is a thorough D.I., with both positive control and pin checks, and if there should be any interruption then **start again.** Make sure that the D.I. book is used and the entry correct; the penalty for missing something during the D.I. could be disastrous, even fatal.

Cushion your spine

Commencing a winch launch, the pilot of a Skylark 2b released the cable at about 200ft., due to excessive speed, and, choosing to land ahead, lowered the nose and applied full airbrake. He rounded out a little high, still with full airbrake but with the speed decreasing, and then landed heavily, dropping a wing and partially ground-looping. The glider was undamaged but the pilot hurt his back and was taken to hospital. He remained there for five days with a cracked vertebra and was unable to fly for three months. After the accident, the inspection of the glider revealed that the pilot was using a very soft foam cushion, some ? inch thick, which was virtually useless and undoubtedly contributed to his back injury.

At frequent intervals we continue to extol the virtues of using Dynafoam (energy absorbing) cushions and in the above accident such use would surely have reduced the seriousness of the pilot's injury. The CFI at that Club has decided to 'ground' any glider, private or Club, where a Dynafoam cushion is not in use and, for the Skylark 2b pilot, the cost of a cushion would have been far, far less than the consequences of his accident. In many Clubs, CFI's are rightly being more insistent on the use of Dynafoam and I hope that this reminder induces discussion and action on the subject. A few years ago, Dr. Tony Segal and Les Neil, Impact Engineer, Qinetiq, Farnborough, carried out a detailed programme of 'Dynamic Testing of Highly Damped Seating Foam', of which Dynafoam is one type and was found to have the best properties.

Put in a few words, the tests showed that the use of Dynafoam 'significantly reduced lumbar spinal loads' and a cushion which had been in use regularly for the previous four years showed almost no deterioration compared with a new cushion. So the 'lasting' properties are excellent. Recommendations are that the cushion must be firmly attached to the seat or harness but must be removable. The cushion material is firm and could prevent full control movement if it slipped forward. A cushion cover of porous material, such as denim, should be used. If you haven't already done so, send off an order for your cushion/s a.s.a.p. – you won't regret it!!

CAUGHT SHORT

An experienced pilot, carrying out a familiarisation flight on a new (to him) flapped, glassfibre glider(a LAK17), joined circuit and noticed that 'the landing area was somewhat congested' and there was another glider in circuit ahead of him. He continued the circuit, remaining concerned about the available landing space and following the glider ahead of him, and finally elected to land behind that glider. As he turned finals he selected landing flap and then used the airbrakes as he felt necessary, still concerned about the available space. The eventual landing was a 'heavy' one, due to too little speed and too much airbrake,

and the glider received minor damage to the undercarriage. The pilot's subsequent forthright and factual report of the whole event listed one of the factors as 'lack of currency in dealing with a congested airfield'!! I suspect that he meant a congested landing area.

In another incident, the pilot of a Bergfalke 4 attempted to land short at the runway threshold, close to the launch point, as there was a K13 on the runway ahead of him. The starboard, fully deployed airbrake paddle struck some tall weeds, ground-looping the glider and causing damage to the nose and the airbrake assembly. Beyond the point where the accident occurred was a further 1000yds. of runway, unobstructed but for the K13!!

It is so easy for pilots at all levels of experience to succumb to that contagious disease 'Landing-area-itis', which causes a burning desire to complete each flight only at or short of THE LANDING AREA, even when circuit height, weather conditions or obstructions indicate otherwise. On most, if not all, gliding sites THE LANDING AREA on each day is arrived at by a mixture of convention, safety and convenience, but can only be preferred, not mandatory, so the phrase is somewhat misleading. For each pilot, the true landing area is wherever he/she chooses to select it, based on judgements made during and towards the end of each flight. If, for sound reasons or by misjudgement, you land beyond the conventional landing area, the only penalty is the retrieve back to the launch point and maybe a bit of good-natured ribbing from your pals. That is far cheaper than 'picking up the bits' after an accident. And remember that getting irritated because other gliders happen to be cluttering up your ideal landing spot is a sure-fire way to make a poor decision relating to landing area and reference point.

How many factors contribute to an accident??

A 90hrs. P1 pilot had been briefed to remain within gliding range of the airfield and to ensure at least 1000ft. of height adjacent to the airfield. Flying an ASW19, he took an aerotow and released early from tow some 4nm from the site, when the altimeter read 1800ft. and he thought he was in lift. Finding no lift, he continued to search further and only decided to return when the altimeter read 1100ft., approx. 5nm from the site. In fact, his altimeter had not been preset correctly and he was some 500ft. lower and now only 600ft. above airfield height. He flew back towards the airfield, passing several landable fields on the way, and, when still 1nm away and only 100ft. a.g.l., attempted to land in a stubble field. Completing the approach turn very low, he levelled the wings and then, it is thought, stalled and crashed into the boundary hedge. He was uninjured but the glider was badly damaged.

Well, here is more 'food for thought'; consider all the factors that contributed to the eventual accident and were mentioned in the accident report summary:-

- Glider DI and pre-flight checks inadequate, accounting for altimeter incorrectly reading 500ft. too high.
- Pilot wedded to the altimeter for height assessment – not much 'lookout' in all probability.
- Pilot ignored briefing by knowingly flying well beyond gliding range of airfield.
- After completing the aerotow, the pilot did not bother to 'locate' the airfield until the final decision to return.
- Despite passing several safely landable fields, pilot chose to 'press on' even when very low, until it was virtually too late and a crash became inevitable.

The pilot was subsequently assigned a formal programme of instruction, to concentrate on a number of specific exercises before being permitted to re-solo. It may be of interest for you to discuss this event with your Clubmates and debate the exercises which you think were included in the programme. Could such a thing conceivably happen at your Club??

AIRBRAKES! AIRBRAKES!

Just after the start of a K8 winch-launch, the airbrakes were seen to open fully and remain so for the rest of the flight. The pilot was never aware that they were open but he achieved a 1200ft. launch, then realised that he was losing height very rapidly so commenced a downwind leg, elected to turn in early to land across the airfield but didn't make it and his glider struck a tree near the airfield boundary. The glider crashed, coming to rest inverted and with substantial damage. The pilot, although taken to hospital for medical checks, was uninjured.

When questioned about the accident and his failure to recognise that the airbrakes were open, he said that he was sinking so fast that he didn't need to consider using them!!!

This type of accident raises its sneaky little head occasionally and I wonder how many similar incidents occur of which we hear nothing because the pilot has Lady Luck smiling on him/her and manages to get the glider down onto the ground safely. It serves as a reminder of what can happen when pre-flight checks are not given the full attention they deserve (that was almost certainly the reason for the above accident). In addition, give some thought to two other points; would 'all round' lookout have enabled the pilot to spot the open airbrakes or was he so mentally overloaded that lookout became a very low priority anyway? Perhaps less experienced (and even more experienced) pilots should be taught more tactical awareness which would alert them to such events as very high sink rate in the circuit and the possibility of the airbrakes being the source of the problem!

When does a flight begin and end?

Well, that's obvious, I hear you say. A flight begins when the glider takes off and ends when the glider lands. Q.E.D.. Oh boy! If only it was really as safe and easy as that.

Unfortunately, there is a small proportion of pilots who appear to believe that a flight begins after the glider has left the ground, ends when the glider touches the ground on landing and whatever happens 'outside' those two events is down to either pot luck or decisions 'the glider itself makes'. In other words, they start flying once the glider is airborne and stop flying as soon as it touches the ground.

There are several accidents each year and probably other non-damage incidents that we do not get to hear about, caused by pilots failing to respond to take-off problems such as the glider yawing severely (due to cross-wind or offset cable pull), incorrect pitch control or wing drop where the wing-tip almost or actually touches the ground. Similarly after landing, there are sometimes problems of wing drop or weather-cocking to which there is no response. I am sure that you can think of other situations on take-off and/or landing where fullest attention by the pilot can at least minimise the risk. This does not imply that anyone in the gliding movement is perfect – we are all vulnerable and there are rare occasions when events might overtake any one of us so rapidly that our best endeavours still don't prevent an incident of some kind. 'There but for the grace of.....etc.'! Quick responses do not necessarily guarantee success but at least be ready to respond!

What I am getting at is that you minimise risk by reminding yourself that you must devote full attention to controlling the glider from the moment the cable is attached, be prepared to use whatever control inputs are appropriate and be ready to release the cable if necessary. Similarly after landing, it is still essential to control the glider as fully and accurately as possible until it stops. And even then you mustn't relax – you still have to get the glider back to the launch queue or wherever!

"WORDS FAIL ME"

Flying had stopped due to rain and the retrieve truck was driven out to the launch point to collect some pilots who had been parking gliders.

The driver took his foot off the brake and the truck drifted forward and over the wing-tip trailing edge of one of the gliders. Trying to recover the situation, the driver then reversed the truck, passing over the wing again and causing further damage.

On the incident report, the Club Comments were "Words Fail Me".

Without doubt, the greatest potential hazard in gliding is mid-air collision. Remember that it is not the one you see which is likely to get you, it's the one you don't see!

Neither winch launches nor the occasional launch failure are dangerous. The potential for danger exists when pilots are under-trained, out-of-practice or not concentrating sufficiently.

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