

# Gliding SAFETY

PROMOTING SAFETY IN GLIDING  
Autumn 2001



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## GROUND OPS - IS YOUR TRACTOR USAGE SAFE?

Many Clubs, possibly a majority, use one or more tractors as general workhorses for gliding site duties, e.g. towing winches, pulling out winch cables and glider retrieving. But do we give enough thought to the safe operation of tractors and what the possible risks are? Certainly, those Club members who are farmers or agricultural engineers know the risks of accidents and how best to minimise the chance of a problem occurring.

Tractors have a valuable role in ground operations but, as with most machinery, the potential for an accident always exists, probably more so than with other vehicles such as Land Rovers. The reasons include large range of steering movement, higher C. of G., more awkward driver access, unfamiliar design and layout of controls, high engine torque at low

speed/gear (tractors are almost universally diesel-engined), uncomfortable and often 'hard' suspension. You can probably think of other reasons and they can all conspire to produce an accident when you least expect it. I speak from personal experience on just how rapidly it happens. Please do not believe the TV documentaries where someone says, of an accident, "it all seemed to happen in slow motion". In reality it happens in the blink of an eye and you are unlikely to be able to recover the situation.

So what are the features of Club tractor operation which can minimise the risk of accidents?

- Ensure that tractor drivers are Club members who have been trained and authorised for that task. Ideally, they

*continued overleaf*

## SAFETY AWARENESS

For those Clubs which had to suspend gliding due to the outbreak of Foot & Mouth disease, the return to normal activities provided a classic example of the way in which any pilot who is not able to fly for several months suffers, in most cases temporarily, some loss of flying standard. In this respect, gliding is no different to many other sports and pastimes; for example, if you play tennis, golf or cricket or if you enjoy such diverse pastimes as wood-turning or rock-climbing, then a period of time without that activity invariably results in a degrading of ability which is usually recovered quickly with practice. What has to be regained is that indefinable 'feel' for the activity and it is practice which makes that happen.

So it is with gliding; whether you are an early solo pilot, experienced Club 'pundit', Senior Instructor or Competition pilot, a lay-off of several months will have an effect to a lesser or greater degree and it is the wise pilot who understands that. Whilst the ability to fly a glider does not usually suffer greatly, it is judgement, perception and reaction time that degrades, those factors which enable you to assess local weather conditions, how your flight should be planned, what 'gremlins' might be lying in wait for you (especially on the launch!), how the circuit and approach should be assessed and carried out, etc.. Also, the other feature that degrades is 'lookout' (i.e. 'collision avoidance'); for a while, a greater proportion of the pilot's attention becomes devoted to flight/circuit planning and lookout can become more restricted unless a serious effort is made to avoid that.

Most, if not all, Clubs have a Rating or Standards structure which takes account of pilots having an extended absence or lay-off from gliding (I mentioned this topic in a previous edition of 'Gliding Safety') but it is worth reminding ourselves that no-one, but no-one, is immune to the problems which can result from being out-of-practice. If that applies to you, then please ensure that your return to gliding is carried out in a controlled and progressive manner where safety has a very prominent role.

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

should be members who hold a driving licence, are in current driving practice and remain familiar with handling a tractor. Hopping onto a tractor once in six months is not the best way to remain in practice.

- On tractors with independent brakes, make sure that the pair of brake pedals remain locked (coupled) together at all times.
- Remember that a tractor driven even slightly too fast and bouncing along on uneven ground becomes a very unstable vehicle. Also bear in mind the tight turn radius on 'full lock' and that many Club tractors have no anti-roll protection. So drive at speeds slow enough to retain firm control for the task in hand and be especially careful when towing gliders, winches or launch-point caravans.

- After completing a task, or when changing drivers, the safest procedure is to stop the engine but, at the very least, double-check that the gear lever is in 'neutral', brake 'on' and throttle (usually hand-operated) closed before leaving the cab with the engine still running.
- If you approach a stationary tractor which has the engine running, whether or not there is a driver in/on it, remain clear of the vehicle until you are sure that it is safe to board it. Being run over by a tractor is a most dangerous and painful experience.
- Do not use a tractor for casual passenger carrying; the risks are too great. The only really acceptable reason for a second person on board relates to driver training.

## COLLISION AVOIDANCE - the problems continue

We had hoped that, at the end of this year, we would be able to report no mid-air collisions or other accidents attributable to poor observation or lookout. Unfortunately, that is not the case. During early May there were three mid-air collisions within a few days; by some miracle all the pilots survived.

- A K.13 and a Skylark 2 were on opposing circuits, the Skylark pilot seeing the K.13 when on his base-leg but not thereafter. The two gliders achieved similar and coincidental approach paths, with the K.13 being slightly higher, and they eventually 'met' just above the ground, the K.13 main wheel striking the Skylark wing and forcing that glider into a heavy landing. The K.13 landed safely. The only injuries were emotional rather than physical!!
- An ASW20 and an Astir collided whilst thermal soaring. The ASW20 pilot baled out successfully and parachuted down to mother earth without injury. The Astir pilot chose to bale out, couldn't jettison the canopy because it wedged against the compass on top of the instrument panel and so had to land the glider, which was also accomplished successfully.
- Whilst descending after completing an aerotow, a Pawnee tug aircraft was in imminent danger of colliding with a K.13 which was circling in weak thermal. The two pilots saw each other at the last moment and both took avoiding action, the two aircraft passing possibly as close as 5mtrs. However, the aerotow rope slashed across the K.13, causing damage to both wings and smashing the canopy. The P.2, who was in the rear seat, received minor injuries caused by the breaking canopy. The gods were certainly smiling on them on that day!

And then, in July, a fatal mid-air collision. At the time of writing these comments full details are not known, but a Super Cub/ Libelle aerotow combination collided at about 1400ft.

a.g.l. with a circling (thermalling) ASW15. The latter impacted first with the tug, losing one wing, then with the Libelle, receiving further severe damage. The ASW15 pilot managed to bale out but too low for his parachute to deploy fully. The tug landed safely, with severe damage to one wing, as did the Libelle with considerable damage and the pilot injured. A truly ghastly accident which could so easily have resulted in three fatalities instead of one.

At almost regular intervals we continue to press home the critical importance of lookout and collision avoidance, with previous articles relating to degrees of damage, pilot survival, opposing circuits and other relevant factors. It becomes difficult to know how often to repeat the information without accusations of becoming humdrum, but the accidents continue to happen so we must ensure that pilots are reminded constantly about the risks.

Come on, guys and gals, let's all pull together and try to eliminate these grim statistics. I know that we are all fallible and that no-one wants to have an accident but a determined effort is needed to raise and then maintain our levels of awareness during each flight. Sometimes it seems that, even when a pilot sees another aircraft on a possible or actual collision course, there is a feeling that the other pilot will take any avoiding action which becomes necessary.

I am a great believer that, although arrogance has no place in gliding safety, where collision avoidance is concerned it is no bad thing to develop the belief that you are the only pilot who is being alert and observant, all the others are being inattentive and therefore you always have to be the one who is ready to take avoiding action. Without doubt, it is all about developing a strong instinct for self-preservation!

**Remember, if you see another glider coming towards you head-on at what you judge to be 400-500 yds distance, then you probably have just 6-8 seconds to make a decision and take avoiding action, probably less if one of you is flying at more than 60kts.....**

# Motor Glider Musings

Perhaps it is because touring motor gliders, self-launching sailplanes and 'sustainers' are neither light aircraft nor gliders, that there are significant traps waiting for the unwary.

By design, the early generation of motor gliders tend to have poor climb performance. Add water on the wings and some will not get airborne at all! The best advice is to read the flight manual and to remember that manufacturers tend to be optimistic. The CAA Safety Sense leaflet on aircraft performance, available at [www.ais.org](http://www.ais.org), is useful. Many of the newer motor gliders climb at quite a steep attitude and the self-launching sailplanes with the engine sticking out in the breeze are very draggy with the prop stopped - practice closing the throttle from the climb, at a safe height, to see how much height is lost getting to the gliding attitude and speed.

Each type will, of course, have idiosyncrasies that must be fully absorbed by reading the flight manual, but many motor gliders have handling quirks that the manufacturer might not be keen to highlight. Examples include the Falke's poorly balanced elevator that can result in PIO problems and also engine and pylon turbulence that can mask the usual pre-stall buffet on some retractable-engine sailplanes. Talk to someone with experience.

Some common-sense precautions can help prevent disaster when operating any type of motor glider:-

- Always carry out a pre-take-off engine warm-up plus vital actions checklist.
- Add E for 'eventualities'.
- A 90-degree turn at a safe height after take-off will, in most cases, improve your options in the event of an engine problem.
- Always use the maximum (longest) available runway.
- Never launch in rain or with wet wings.
- Never attempt to fly outside of the weight limitations.
- And if you find the need to start your engine in flight, then remember to get the priorities right - first find somewhere to land, have a plan to get you down on your chosen spot and only then get to grips with the engine.
- **Most important of all, don't forget to fly the aircraft.**

## Approach Control?

There is an increasing number of accidents linked to poor circuit planning and approach control, coupled with 'landing lever' syndrome. Next time you fly, check these points:-

- Did I seem too high and so needed full airbrake to land near the launch point?
- Did I use the brakes in the final turn?
- Were the brakes nearly closed when I landed?
- Did I have time to look either side when on the approach?
- Did I look for other aircraft on the opposite circuit before I turned final?

**If your answer to the first three questions is YES and to the last two is NO, then your circuit planning is poor and your approach control non-existent.**

If you plan a circuit correctly, then you will have a few seconds to decide that you need to use the airbrakes on the approach and also judge when you can apply half to two-thirds airbrake to make your chosen reference point stay in the right place in relation to the canopy (with constant speed, of course).

If your circuit is started too low, you will want to turn in closer to the reference point and if you get it wrong you will feel too high. What you have done, however, is planned a circuit around a different landing area but not recognised that fact. Take some advice if this is happening and try a higher, 'further out' circuit. Fly dual if you need some added courage. If you have established the close, tight circuit as a habit, with full airbrake in the final turn, a mistake could mean landing on the near hedge at your home airfield or, in a field landing, flying through the far hedge.

The benefits of an extra 100ft. on the minimum circuit height, once you have got used to positioning the final turn in the right place, are enormous. You have much more time and the workload decreases, you have time to look out, and whilst on the approach you have time both to control it and look for obstacles. With somewhat less than full airbrake on the round-out and flare you have an extra few seconds to get it right.

*Now I know that all you pundits will say that what you do is perfect - but look at the accident reports; they contain both pundits and tyros alike. And Instructors - "Are you teaching it right?"*

### ACKNOWLEDGMENT

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**Mike Fitzgerald**

## WINCH LAUNCH FAILURES - mixing up the levers

There have been two recent accidents which resulted from incorrect control operation by the pilots following winch-launch failure. In the first, a low-level launch failure, the pilot lowered the nose of his K.7 glider correctly but then pulled the airbrake lever instead of the release knob. The glider landed heavily and was found subsequently to have minor damage to one fuselage frame. The pilot was unhurt. The second accident was more serious; the pilot of a K.13 at first responded correctly to a launch failure at some 200ft. by lowering the glider's nose, pulling the cable release and choosing to 'go ahead' and land further up the airfield. However, he then mistakenly pulled on the cable release again instead of opening the airbrakes. In trying to remain within the airfield boundary, he eventually hit the ground in an inadvertent sideslip near the upwind end of the field. The glider was very badly damaged, in fact a write-off, but the pilot escaped with little more than scratched legs - a very lucky man!

So there you have it - in one case the pilot operated the airbrake lever instead of the cable release and in the other the cable release was operated instead of the airbrake lever. Most Instructors will have experienced the problem (usually 'recovered' quickly) of the P.2 grasping the wrong control at a critical moment - a favourite is trying to release the cable at the top of a winch launch by opening the airbrakes!! In a slightly different context, another one is trying to use airbrakes on the approach by operating the undercarriage lever!!

These problems of 'selection' invariably happen when the pilot is experiencing stress levels which are temporarily higher than normal and there is no simple solution. The arguments about the pilot, on a winch launch, holding or touching or not touching the cable release have been and will continue to be hotly debated but the safest means of minimising the

risk of such accidents surely lies with training, practice and concentration - training pilots to understand and recognise the problems of wrong control selection, practice in winch-launch failures so that they are not a surprise when they occur and emphasising that total concentration from the commencement of each launch is essential to enable any launch failure to be dealt with competently and safely.

## AUTUMN THOUGHTS

Autumn is creeping up on us and we will soon be into that few months of soggy weather, soggy ground, soggy gliders, in fact soggy everything. As in previous years, it does no harm to tweak everyone's memory about the traps that autumn and winter weather store up for us.

**Late-afternoon sun** - If your approach/landing direction is westerly, the setting sun can limit visibility quite severely. In fact, if you couple an into-sun approach with even a partially misted canopy, the result can be nil visibility ahead, a possibly lethal situation. So stop flying early enough to prevent the problem occurring.

**Misted canopies** - Misting can occur early in the day as well as later and if it is coupled with low temperature, around freezing point, you may not be able to clear the problem. Refuse to launch if attempts to clear the canopy are not completely successful.

**Wet Wings** - Rain on wings always has some effect on a glider's handling characteristics and stall speed, particularly so with fibreglass gliders. It is best to avoid finding out the hard way by drying or at least wiping off wet wings prior to launching. As autumn drags on into winter, you need progressively more discipline (i.e. will-power) to ensure that this practice is maintained.

**Flying 'At night'!** - To comply with Air Law, glider flying must be completed (i.e. the last landing must take place) no later than half an hour after sunset and sometimes, at the Duty Instructor's discretion (or the pilot's!!), earlier than that if weather conditions make it necessary, for example in cloudy, overcast conditions.

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