Glider Accidents in 2011

This publication reviews gliding accidents from 1 October 2010 to 30 September 2011 .

Our accident record reflects how we do things. Achieving fewer accidents requires *changes* in how we do things. You will see from the body of this report that the number of fatal accidents and, in particular, winch accidents has reduced in recent years. But there is still room for Improvement, not least in delivering safe trial lessons and in ensuring that all gliders are rigged correctly.

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SAFER GLIDING

Are you a safe glider pilot? Of course you are!

However, we all need safer gliding to avoid the personal tragedies associated with fatal and serious injury accidents, minimise the risk of over-regulation and retain insurance cover at a sensible cost.

Safer gliding is about not repeating accidents that have occurred many times before. This requires knowledge, skill, good airmanship and an ability to evaluate risk.

Why do accidents keep happening? 80% of the accidents that result in personal injury or substantial damage to gliders arise from just six causes – winch launching, stall and spin, collision, landing, field landings and glider integrity. The principal causes of these accidents and the means of avoiding them are summarised in the table opposite.

In order to make gliding safer we, quite simply, need to reduce the number of these accidents.

From an insurance perspective, we are most vulnerable to those accidents which can result in large third-party claims. Instructing and other two-seater accidents where P2 is seriously or fatally injured can lead to claims well in excess of £1 million.

It is important to distinguish the different degrees of risk that are acceptable for different types of flying. There should never be an accident of any sort during a trial lesson. In an ideal world, there would be no accidents during club instructing although, realistically, a few minor accidents can be expected. Experienced and current pilots flying their own glider may however choose to accept risks that would be unacceptable on training flights.

Please read the remainder of this booklet and consider what you can do – as an individual or as a member or officer of your club – to anticipate relevant hazards and prevent them resulting in an accident at your club. Please help us to achieve fewer accidents in 2012.

ACCIDENT AREA	PRINCIPAL CAUSE	ACTIONS FOR FEWER ACCIDENTS
Winch Launch	Incorrect technique and/or unable to cope with an emergency	Better training Fewer launch failures
Stall/spin, excluding winch launch	Overload, distraction	Flying the glider must always be the first priority
Collision	Inadequate lookout	Better lookout Technology
Landing (at home airfield)	Unable to cope with normal problems	Better training
Field landing	The field is picked too late	Pick a field in good time
Integrity	Rigging incomplete	More careful rigging

REVIEW OF ACCIDENTS IN 2011

Overall

In the last BGA reporting year, which ran from 1 October 2010 to 30 September 2011, there were no fatal accidents and 4 serious injury accidents. 57 aircraft were substantially damaged.

Fatal Accidents

There were no fatal accidents in 2011.

In the 24 years between 1974 and 2007, a total of 132 fatal glider, TMG, and tug accidents were reported to the BGA - an average of 3.9 per year. There was at least one fatal accident in every one of those years. The average annual fatal accident rate for gliders alone (excluding tugs and TMGs) was 3.6 per year.

In the last four years there have been just five fatal glider accidents. (2008 - nil; 2009 - 4; 2010 - 1, 2011 - nil). Chart 1 shows how this figure represents a sudden reduction from earlier 4-year average totals of about 15.

Chart 2 compares the apparent immediate causes of fatal glider accidents from 2008-2011 with the average 4 year period from 1976-2007.

This reduction over the last four years is statistically significant. Some of the reduction stems from fewer winch accidents and some from zero stall/spin accidents from local flying.

The challenge for everybody is to achieve a second successive year with no fatal accidents.

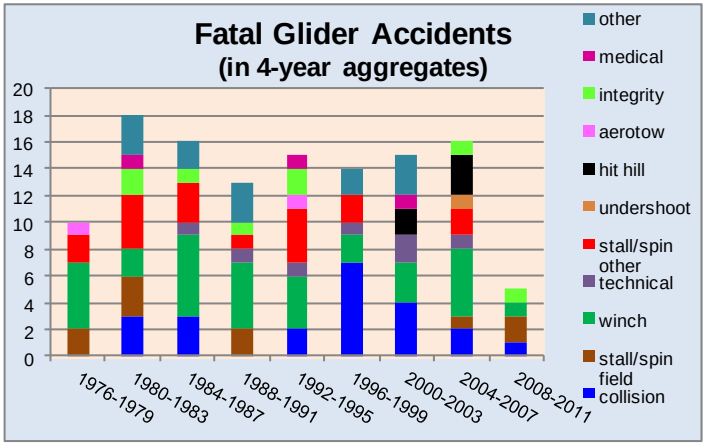
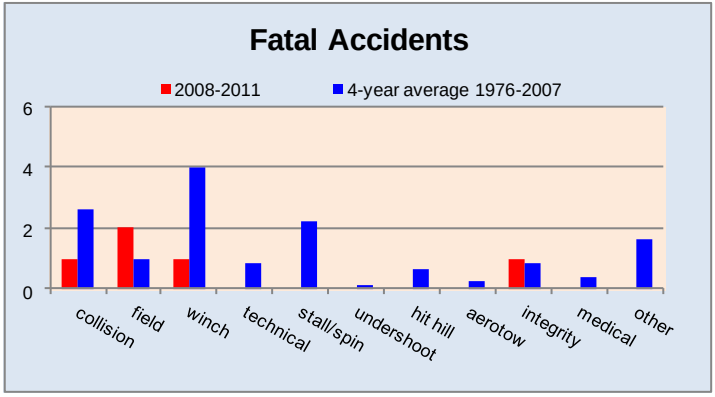


Chart 1 (above); chart 2 (below)



Serious Injury Accidents

There were 4 serious injury accidents in 2011:

- field landing, German competition
- field landing, UK competition, overshot
- hit mountain in France
- stalled landing

Safe Winch Launch Initiative

This initiative has been in place for six years.

2011

No-one was injured from a winch launch accident in 2011. Two gliders were substantially damaged in comparison with the 1976-2005 average of 8.8 per annum.

The profile of the 12 winch accidents and incidents in 2011 was very different from the annual average from 1974-2005 (chart 3).

Six of the 12 accidents and incidents were cable encounters.

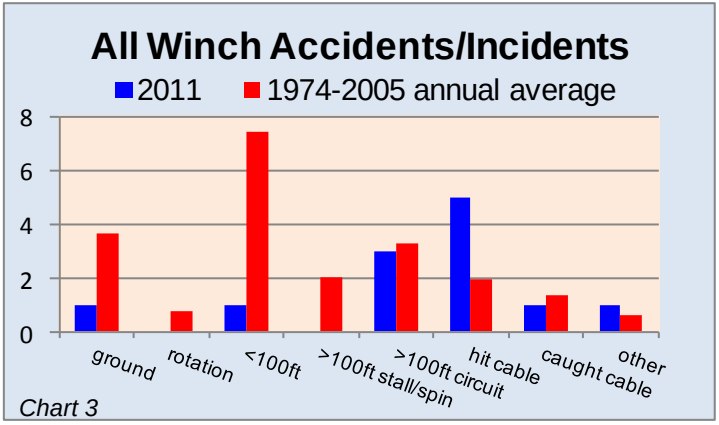


Chart 3

Another three were landing accidents after a launch failure and a recovery to controlled flight.

There was only one accident in 2011 from uncontrolled flight during rotation or after power loss. Based on the pre-2005 rates, a total of 10 such accidents would have been anticipated with an annual average of one fatal and 1.7 serious injury.

In the early years of the initiative there was no reduction in groundloop/cartwheel accidents following a wing drop. However, there was only one accident of this kind in 2011.

2006-2011

In the 6 years of the initiative there have been 4 fatal or serious injury winch accidents compared to 18 in the previous 6 years and a 1976-2005 6-year average of 18.8. Accidents in each of the years from 2006 to 2011 were respectively 1,1,0,2,0,0; 2011 was the second successive year without a fatal or serious injury winch accident.

What has changed? The biggest factor is that over the 6 years, as in 2011, there has been a dramatic reduction in the number of stalls or spins during rotation or after a launch failure (chart 4 on facing page.)

The guidelines for safe winch launching published in January 2011 should be available at all clubs. Please ensure you have a personal copy. Explanations for the advice can be found in the longer version of the leaflet published in February 2010, available on the BGA website. The website also contains video simulations of the most serious winch accidents.

Let us strive to make 2012 the 3rd year in a row without a fatal or serious injury from a winch accident.

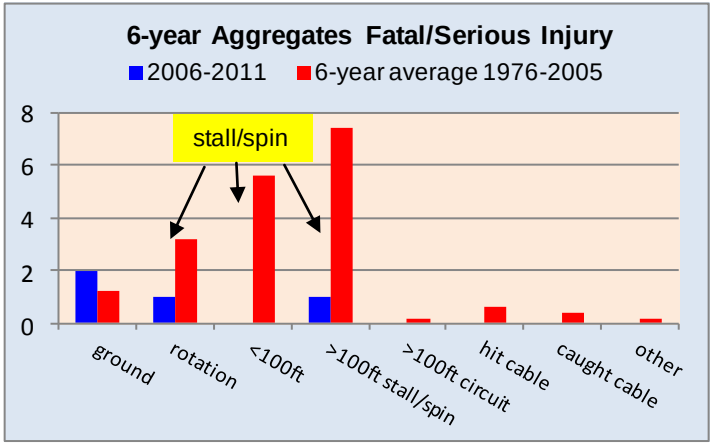


Chart 4

ISSUES OF CONCERN

1. Preparation of Gliders for Flight

Since 1974 there have been 20 fatal or serious injury accidents as a result of gliders being incorrectly or incompletely rigged. There were another 80 cases in which the glider was flown with insecure or unconnected controls or components. It follows that we might have had 100 fatal or serious injury accidents in gliders with rigging faults.

Other problems include airbrakes open and pilot unaware, loose articles, insecure ballast, insecure pilot, launch with tail dolly attached, and unlocked canopies.

This issue was highlighted in the previous review where it was pointed out that in 2010 the frequency of accidents and incidents with gliders improperly prepared for flight was double that of recent years.

The year 2011 has seen even more accidents and incidents of this kind than in 2010:

Rigging

- K8: fairing detached in flight
- K13: drag pin found in fuselage after aerobatic flight
- K13: elevator flutter on tow after trim tab became disconnected
- LS4: flown with one airbrake not connected
- K6CR: flown with mis-rigged tailplane
- K6E: flown with incorrectly inserted drag pin

Other faults

- DG 505: rattling noise heard in flight, screwdriver under seat
- Junior: airbrakes opened, crashed in field
- Capstan: aerotow, airbrakes open, released, arrived in field
- Olympia 463: near collision, pilot distracted by no ASI, wrong connections
- Seven canopies opened in flight

The advice on the BGA website is as follows:

Accidents of this kind can be avoided if:

- rigging is directed by a person experienced on the type, in accordance with the flight manual, without interruption or distraction
- the DI is conducted by a person experienced on the type, without interruption or distraction
- the pilot carries out proper pre-flight checks, again without interruption or distraction

Shortcomings in preparing a glider can be lethal and are completely avoidable. Please do all you can to ensure the above guidelines are always followed.

2. Trial Lessons

It has been a BGA priority for a number of years that trial lessons must be the safest of all glider flights.

In 2011 there were three very serious accidents and incidents. In an accident which could easily have been fatal, a K21 with a trial lesson and a K13 with a young member under instruction were launched on a pair of winch cables and collided 56 seconds after the 2nd glider reached the top of the launch. The K13 lost 6ft of wing and the main spar of the K21 was nearly penetrated.

The second case involved a trial lesson glider making a normal approach to the normal landing area. It encountered a club glider on a reciprocal heading. The second glider sheered away to avoid a collision.

In the third case, a person with a PPL but no gliding experience was given control of the glider at 900ft on aerotow. This resulted in an immediate tug upset. The tug pilot managed to release. The glider pilot was not aware of the hanging rope and dragged it through hedges and across a road on the approach.

In addition to these life-threatening scenarios, a trial lesson P2 broke the canopy with his head on the landing run. In an instance of family and friends flying, a T49 took off with brakes open, pilot unaware, released at 300ft although the tug was coping, and arrived in a field. The pilot was not current.

We have been lucky. Avoiding accidents on trial lessons is a top priority for 2012. This requires supervision in the broadest possible sense.

Please do everything you can to anticipate and avoid the hazards in your club that could conceivably lead to a trial lesson accident.

3. Substantial Damage

Damage to aircraft is reflected in insurance premiums but, more importantly, frequently has the potential to cause personal injury.

It is a BGA objective to reduce the number of substantial damage accidents. We are not making progress. 57 aircraft were substantially damaged in 2011 compared with 54, 53, 51, 59, 54 in the years 2006-2010 and a 1974-2005 average of 57.

The profile of substantial damage accidents in 2011 is shown in chart 5. Apart from fewer winch accidents, the only striking difference from the average of the previous 37 years is the large number of accidents in which aircraft were damaged on the ground. One of these accidents stemmed from bad weather. One arose from an attack by bullocks after a field landing. The other 7 involved moving gliders by hand or behind a vehicle.

Such accidents are completely avoidable.

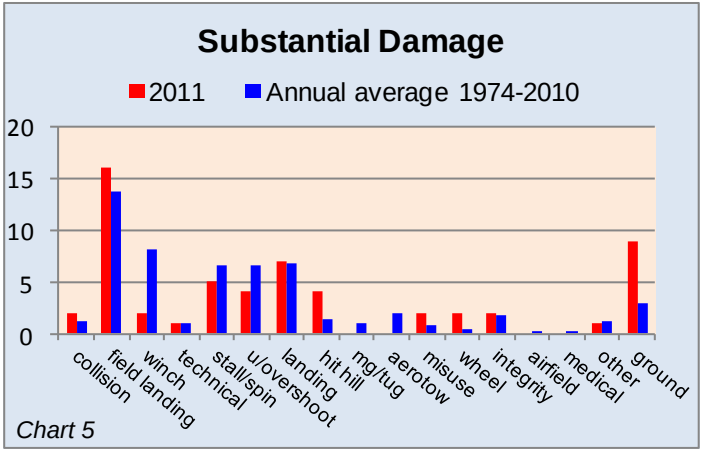


Chart 5

PROGRESS IN RELATION TO PRIORITIES FOR 2011

No fatal accidents
Achieved, but with a measure of good fortune

No trial lesson accidents
Three very serious accidents and incidents, luckily without injury

No serious instructing accidents
No fatal or serious injury accidents for the second successive year

Even fewer winch accidents
The best year to date.

Careful preparation of gliders for flight
No progress

Fewer substantial damage accidents
No progress

NB. There were 14 accidents resulting in personal injury in 2011. Energy absorbent cushions were present in only five of the eight aircraft that we have data for. The other 6 accident reports lacked information on whether a safety cushion was fitted.

Confor or Dynafoam can materially reduce the severity of back injuries in an accident.
Do you have such a cushion in your glider?

PRIORITIES FOR 2012

No fatal accidents

No trial lesson accidents

No serious instructing accidents

No serious winch accidents

Every glider correctly prepared for flight

Fewer substantial damage accidents

APPENDIX—SUMMARY OF SUBSTANTIAL DAMAGE ACCIDENTS IN 2011 BY CATEGORY

CATEGORY	TOTAL	CIRCUMSTANCES
Collision	2	structural failure of tailplane while landing; possible prior collision
		K21 and K13 launched on successive winch cables; collided in a thermal 56 seconds after the K13 released its cable
Winch	2	tail damaged by groundloop; pilot released after the wing had touched the ground
		cable break, recovery, landing on rough grass, no damage found, but damage found later was attributed to this landing
Field Landing	16	cartwheel attempting field landing at foot of ridge
		drifted downwind, picked field, tried to reach airfield, returned to the selected field, low final turn
		local soaring on a windy day, landed in a small, sloping field, groundlooped, rolled backwards into a fence.
		field landing accident during a competition in Germany. SERIOUS INJURY
		tailwind, groundlooped, glider reversed into a hedge and barbed wire fence.
		groundloop after the left wing struck a fence post
		field thought to be wheat was actually rape
		groundloop
		field thought to be low crop was actually rape
		landed downhill
		heavy landing
		sea breeze, landed downwind, hit far hedge. SERIOUS INJURY
		groundloop in crop
		groundloop in crop
		wing hit piled straw, groundloop
		clipped tree on approach

CATEGORY	TOTAL	CIRCUMSTANCES
Technical	1	ASH 26 E caught fire in the air, fuselage burnt out within 3 minutes of landing
Stall / spin	5	field landing, abbreviated circuit, strong wind, raised nose to clear cables, insufficient energy to round out.
		TMG, landed, closed spoilers, climbed, stalled at 10ft.
		turbo failed to start, field landing, upslope, turbulence.
		competition finish, turn, stall.
		strong wind, returning from downwind, stalled. SERIOUS INJURY
Under / Overshoot	4	perceived roll control problem, opened brakes, towed onto approach, undershot
		TMG, engine would not retract or start, active runway blocked, undershot
		returning to airfield in rain, undershot
		overshooting runway, groundloop to stop
Landing	7	struck windsock pole on approach. in low afternoon sun
		TMG, high round out, heavy landing, prop strike
		Pawnee undercarriage struts broken by hard landing in heavy rain
		opening airbrakes, pilot's hand caught on trim knob, PIO, hard landing
		landing, collided with hangar
		unreported heavy landing
		heavy landing, bounce, groundloop
Hit Hill	4	groundloop trying to regain site at top of hill
		hit hill while ridge soaring
		hit mountain in France. SERIOUS INJURY.
		hit tree while attempting to ridge soar, slid to ground from tree canopy

CATEGORY	TOTAL	CIRCUMSTANCES
Misuse of controls	2	TMG, excessive braking during landing ground run, P1 pulled brake instead of the intended elevator, prop strike.
		balloon and stall; stick/spoiler confusion from left hand seat.
Wheel-up Landing	2	on runway.
		on grass.
Glider Integrity	2	canopy blew off during final approach.
		first flight on type, airbrakes came open on tow, released at 200ft, stalled into a field.
Other Flying	1	glider damaged by falling winch cable which continued to be wound in.
Ground	9	strong winds blew trailer containing glider onto a fence.
		wingtip caught on tree while the glider was being towed out.
		wing damaged after falling onto concrete during rigging.
		tail dolly hinge broke during ground tow, glider ran into towing car.
		unreported hangar damage.
		canopy detached during DI.
		towed glider hit fence.
		towed glider hit tree.
		field landing, glider attacked by bullocks.

Note: the classification system in use places stall/spin accidents in the stall/spin category unless they are associated with a winch launch. Two of the 5 stall/spin accidents were in the course of field landing. The total number of field landing substantial damage accidents was therefore 18.

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Allianz Global Corporate & Specialty
www.agcs.allianz.com

Phone: 01765 690777 Fax: 01765 690544
www.hillaviation.com

British Gliding Association, 8 Merus Court, Meridian Business Park, Leicester, LE19 1RJ
Tel: 0116 289 2956 Email: safetyinitiative@gliding.co.uk www.gliding.co.uk

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