Glider Accidents in 2010

This publication reviews gliding accidents in 2010 with special attention to those accidents involving personal injury and/or substantial aircraft damage, and those during instruction.

Our accident record reflects how we do things. Fewer accidents require *changes* in how we do things. Please consider what you can do individually or in your club to achieve such change. This will probably mean shifting from ‘taking steps to prevent a recurrence after an accident has happened’, towards ‘having systems in place to manage hazards’.

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SAFER GLIDING

We all consider ourselves to be safe pilots. However, accidents do happen. In order to make gliding safer we, quite simply, need to reduce the number of these accidents. This is one of the BGA's most important objectives. As well as the obvious desire to minimise the personal tragedies associated with fatal and serious injury accidents, we need fewer accidents in order to reduce the risk of over-regulation and to keep our ability to obtain insurance cover. We all owe it to our sport, to our friends and families, and to ourselves to fly safely.

Our records show that the same types of accidents keep occurring. Indeed, some 80% of 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. We believe that it should be possible to completely eradicate fatal and serious injury accidents from many of these areas, either through improved training or other methods.

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.

It's important to distinguish the different degrees of risk that are acceptable for different types of flying. For example, there should never be an accident of any sort, no matter how minor, during a trial lesson. In an ideal world, there would also be no accidents during club instructing although, realistically, a few minor accidents can be accepted. On the other hand, it is accepted that experienced and current pilots may choose to push their boundaries somewhat further and that this can result in occasional 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.

Please read the remainder of this booklet and consider what you can do – as an individual or as a member of your club – to achieve fewer accidents in 2011.

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 2010

Overall

The BGA accident reporting year for 2010 ran from 1 October 2009 to 30 September 2010. There was 1 fatal accident and 6 serious injury accidents. Aircraft were substantially damaged in 54 accidents.

Fatal and Serious Injury Accidents

Fatal accident

In the single fatal accident the wings of a Foka folded upwards on a winch launch. The AAIB investigation continues. The BGA circular on rigging with expandable fittings dated 3 September 2010 is essential reading for all pilots who operate gliders with such fittings.

Serious injury accidents

There were 6 serious injury accidents in 2010:

- visiting pilot hit the local ridge
- aerotow rope break, field landing
- stall on the approach
- field landing, hit power wires
- launch with airbrakes open, groundloop in field
- stall/spin in final turn during aerobatic display

Trend of fatal and serious injury accidents

The average annual number of fatal accidents is just under 4. There were none in 2008, 4 in 2009, and 1 in 2010. The recent reductions are not statistically significant. Achieving that would require no fatal accidents in 2011, or not more than two fatal accidents in the two year period 2011-2012.

Priorities for 2010

The BGA Executive and club chairmen adopted three safety priorities for 2010:

- no trial lesson accidents
- no serious instructing accidents
- safe winch launching

The outcome is summarised below:

Trial lessons

There was one very minor accident and two potentially very serious ones. In one case, the glider undershot and was substantially damaged. In the other, the pilot traversed the winch run and was hit by a descending cable. The damage was very minor but this flight could easily have led to a double fatality.

2010 was an improvement over 2009 when 8 trial lesson accidents resulted in 4 substantially damaged gliders.

Club instructing

There were no fatal or serious injuries but four gliders were substantially damaged. Two of these were landing accidents after a simulated winch launch cable break and a circuit. One was an overshoot from a hangar landing and one glider hit a sheep on landing. Four substantially damaged gliders is about the same as in recent years.

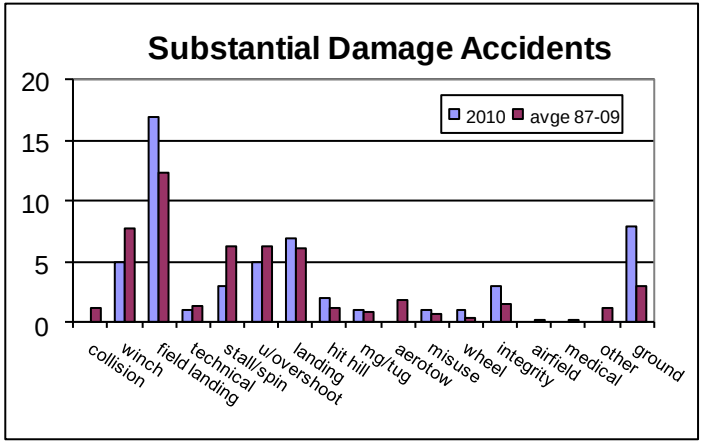
Winch launches

There were no fatal or serious injuries but 5 gliders were substantially damaged. The outcome of the first 5 years of the safe winch launch initiative is reviewed in the Safe Winch Launch section.

Pattern of Substantial Damage Accidents

In 2010 there were 54 accidents in which aircraft were substantially damaged. The individual accidents are summarised in the appendix.

Once again, the distribution of accidents among categories was similar to the long term average (see chart below):



To build on the progress of last year and to address new areas of safety, the BGA has set the following as areas for priority in 2011.

PRIORITIES FOR 2011

- No trial lesson accidents
- No serious instructing accidents
- No stall/spin accidents
- Even fewer winch accidents
- Careful preparation of gliders for flight

PREPARATION OF GLIDERS FOR FLIGHT

Since 1987 there have been 5 fatal and 5 serious injury accidents as well as 67 lesser accidents and incidents associated with gliders being incorrectly or incompletely rigged. In 44 of the 67 instances, a control was not connected. Another 12 involved missing or insecure wing or tailplane pins. In another 2 cases the glider had been wrongly assembled. Any or all of these 58 events could have been fatal.

In another 42 cases with three serious injuries, flights were undertaken with shortcomings that included airbrakes open and the pilot unaware, loose articles, insecure ballast, insecure pilot, and launch with tail dolly attached.

Finally, 121 canopies opened in flight.

In recent years there have been about 8 accidents and incidents of this kind per year but in 2010 there were 16. Five of these were associated with rigging: a K6 flown with a drag pin not fitted, a Ventus that attempted to take off with a flapping tailplane, an unconnected airbrake hotelier on a K21, a Kestrel that flew for 3 hours with unconnected ailerons, and a T31 with incorrectly rigged ailerons. The fatal Foka accident may be related to rigging. Another 5 reports related to airbrakes open, launch with tail dolly attached, etc, and 5 canopies opened in flight.

The peak month for accidents resulting from rigging errors is April. The conclusion is obvious! Take especial care at the beginning of the season when you may not be current at rigging.

Do not allow yourself to be distracted when you are rigging, preparing the glider for flight, and carrying out your pre-flight checks.

SAFE WINCH LAUNCH INITIATIVE

At the end of September 2010 this activity had run for five complete years. The thrust of the initiative was to advise pilots and instructors that there are particular hazards at each stage of a winch launch and that these hazards can be avoided by flying a particular climb profile and being ready to take the correct action when faced with adverse circumstances. It built upon but added to the recommendations in the instructor's manual.

This work has been augmented in the last two years by a programme of winch upgrading to ensure cable speeds are adequate for safe launching in light winds.

Communications have included four editions of the BGA safe winch launch booklet and the provision of video simulations of winch launch accidents on the BGA website.

The historical rate of winch accidents is summarised below:

			Fatal/serious injuries		
	Fatal injury	Serious injury	Total	/100,000 launches	Substantial damage
2006-10	2	2	4	0.41	22
2001-05	7	9	16	1.38	34
1996-2000	2	9	11	0.82	42
1991-95	8	10	18	1.39	47
1986-90	4	13	17	1.17	47
1981-85	5	11	16	1.11	40
1976-80	5	12	17	1.41	55
Total 1976-2005	31	64	95	1.20	265
5 year average 1976-2005	5.2	10.6	15.8		44
weighted 5 year avg 1976-2005	3.8	7.9	11.7		33

Period of safe winch launch initiative.

Note: the fatal and serious injury and substantial damage totals include all winch accidents; the weighted 5 year average totals and the 5 year rates per 100,000 launches exclude RAFGSA accidents and launches from 1974-1997. 'Weighted' assumes accidents are proportional to the number of launches and in each 5 year period there was the same number of launches as from 2006-2010 (launches in 2010 are assumed to be the same as in 2009).

Conclusions

The main conclusions for the 5 years since 2006 are:

- There were 4 fatal or serious injury winch accidents, in comparison with 16 in the previous five years, a 5 year average from 1976-2005 of 15.8, and a 5 year weighted average of 11.7 which takes account of the reduced volume of winch launching compared with earlier years.
- A reduction of about 30% in the number of substantial damage accidents.
- The reduction in the most serious accidents is attributable to fewer stall/spin accidents; there was one fatal or serious injury accident involving a stall or spin by a solo pilot but nearly 8 would have been expected at the previous rate.
- The frequency of accidents to experienced pilots from a wing drop followed by a groundloop or cartwheel is unchanged. Two of the fatal/serious injury accidents were of this kind.
- Instructing accidents continued at 30% of the total. One of the serious injury accidents followed a stall after a cable break at 300ft. Five of the 22 substantial damage accidents followed power loss in mid-launch, and an abbreviated circuit.

These results are encouraging but it is very important:

- to retain the vigilance necessary to avoid stall/spin accidents.
- to persuade experienced pilots to release if they cannot keep the wings level.
- for instructors to take over early if P2 is not coping correctly with a real or simulated launch failure.

The results are being communicated to all pilots and instructors. To assist in this communication a summary of the BGA booklet will be made available with a leaflet dispenser and in sufficient quantities for permanent display in all clubs.

APPENDIX—SUMMARY OF SUBSTANTIAL DAMAGE ACCIDENTS IN 2010 BY CATEGORY

CATEGORY	TOTAL	CIRCUMSTANCES
Collision	Nil	
Winch	5	simulated cable break, circuit, wingtip hit ground
		cable break at 400ft, landed ahead, overshot
		simulated cable break, circuit, impacted runway edge
		cable break at 300ft, stall, recovered, landed in field
		wing drop, groundloop, tail snapped off
Field Landing	17	landing on ridge and furrow surface
		undershot into hedge, broke wing, landed backwards
		heavy landing, slow, uphill
		hit concealed rut
		aerotow retrieve, rope broke, undershot field SERIOUS INJURY
		landed in crop, groundloop Three occurrences
		groundloop, ran backwards into barbed wire fence
		heavy landing Two occurrences
		long grass, groundloop
		overshot, struck post
		hit power cables on approach
		undershot
		hit power cables on approach SERIOUS INJURY
		sunk into soft ground

CATEGORY	TOTAL	CIRCUMSTANCES
Technical	1	undercarriage collapsed after normal landing (tug)
Stall / spin	3	spun into a tree on the approach
		stalled at 10ft on the approach SERIOUS INURY
		stall/spin during aerobatic display SERIOUS INJURY
Under / Overshoot	5	instructing flight, hangar landing, overshot
		hit bush on approach
		hit tree on approach
		turbo running intermittently, overshot runway
		trial lesson, undershot
Landing	7	struck sheep
		tug veered off airfield in crosswind
		heavy landing
		wing caught in crop, groundloop
		heavy landing, prop strike (TMG)
		groundloop
		bounced landing, groundloop
Hit Hill	2	visiting pilot hit ridge while thermalling SERIOUS INJURY
		downwind, unable to clear ridge
Motor Glider / Tug	1	TMG hit sheep while taking off
Aerotow	Nil	
Misuse	1	using undercarriage lever as airbrake, overshot airfield

CATEGORY	TOTAL	CIRCUMSTANCES
Wheel-up Landing	1	forgot wheel
Integrity	3	rear canopy opened on aerotow
		wings folded on winch launch (integrity assumed) FATAL
		winch launch, airbrakes open, groundloop in field SERIOUS INJURY
Airfield, medical, other flying related	nil	
Ground	8	towed glider hit post
		T hangar collapsed in strong winds
		hangar collapsed under weight of snow
		elevator damaged during hangar packing
		towed glider hit car
		towed glider hit trailer
		glider towed over hidden manhole cover
		staked glider blown away by wind

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