Safety Briefing

Accident Review 2015

There were no fatal accidents and no mid-air collisions in 2015. Other accidents increased, with 8 pilots seriously injured and 65 aircraft substantially damaged.

There are only a few types of gliding accident. They repeat themselves endlessly. This booklet offers headline guidance on how everyone can help to avoid a repetition of the more important categories.

Can you contribute to a safe 2016?

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Accident Review 2015

Stall/Spin Accidents

Avoiding an inadvertent stall is one of the basics of flying safely and avoiding injury. A stall followed by a spin may be fatal. Stalls near the ground can damage the spine. There were two serious injuries of this kind in 2015.

Stall/spin accidents in 2015 substantially damaged 10 aircraft during the approach and landing. This total is higher than in any of the previous 20 years.

In one of the 2015 accidents the glider stalled into a tree. The photograph below is of another accident in which the pilots were fortunate to escape serious injury.

Accurate airspeed control on the approach is crucial. If you are an instructor please monitor and supervise the standards of approach control during club flying.

Collision

There were no collisions in 2015. Fatalities from collision have diminished since the year 2000 even though the trend of substantial damage collisions has been upwards.

This reduction has arisen partly from fewer collisions near the ground but mainly from a remarkable increase in successful bailing out.

From 1976-1999 following a collision at a height of more than 1300ft, and with no apparent impediment to bailing out, seven glider pilots saved their lives by bailing out but another 10 pilots died. From 2000-2015 in similar circumstances there were 13 successful bail outs and no deaths.

https://members.gliding.co.uk/?p=16726

The first priority is to avoid a collision:

- **maintain SITUATIONAL AWARENESS and INTENSIVE LOOKOUT. Flarm is an AID to lookout.**
- **follow the guidance in the BGA thermal soaring protocol - download from https://members.gliding.co.uk/?p=16726**

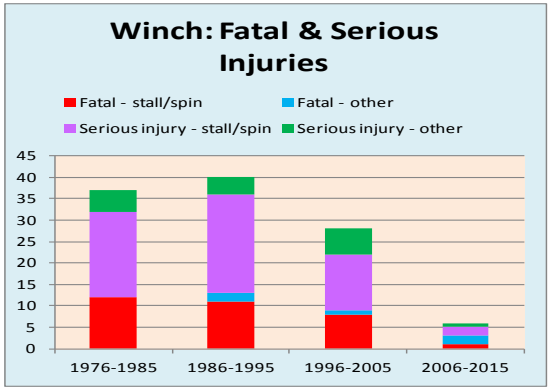
To bail out successfully:

- **review the BGA advice on getting out after a collision - download from https://members.gliding.co.uk/?p=16710 Your life may depend on taking the correct actions immediately.**

Winch Accidents

The BGA safe winch launch initiative was introduced 10 years ago. In those 10 years there have been 6 fatal or serious injuries from winch launches. The range of previous 10-year totals was from 28 to 40 (chart 1).

Chart 1



In 2015:

- a serious injury followed a spin on an instructing flight after an abbreviated circuit.
- no solo pilot substantially damaged a glider from a wing drop or stall. Well done!
- the tail of a Skylark was damaged following a ground strike at the beginning of the launch. Please take care launching older gliders with powerful winches.

10 years experience has validated the BGA safe winch launching advice to pilots. The latest edition of the booklet, which is available from the Safe Winch Launching page on the BGA web site (www.gliding.co.uk/safewinchlaunching), stresses how everyone involved in a winch launch can contribute to safety, for example the wing tip holder should stop the launch if there is an up or down force on the stationary glider.

https://members.gliding.co.uk/?p=16661

Please obtain a copy of the safe winch launch booklet from your club or download a copy from the BGA website. The essentials of the advice to the pilot are unchanged:

- **If you have difficulty in keeping the wings level before take-off, release before the wing touches the ground.**
- **After take-off, maintain a shallow climb until adequate speed is seen with continued acceleration. Then allow the glider to rotate at a controlled pace. If power is lost near the ground, immediately lower the nose to the appropriate recovery attitude.**
- **After power loss in mid-launch, adopt the recovery attitude, wait until the glider regains a safe approach speed, and land ahead if it is safe to do so.**

If you are an instructor and P2 makes a mistake, take over immediately and demonstrate a safe recovery.

Glider Integrity

In 2015 an ASW19 was flown with a disconnected aileron. Another disconnected aileron, and an unconnected elevator, were found at DI which is good news.

Three gliders flew with airbrakes open, pilot unaware. A video of one flight - of a glider launched by bungee - can be viewed on the BGA web site:

https://members.gliding.co.uk/?p=23185

If your glider is not behaving normally, your first diagnosis may not be correct. What you think might be 'strong sink' may actually be airbrakes open.

Gliders were flown in 2015 with an insecure heavy battery, a safety cushion that impeded rearward stick, and one was nearly flown with an attached tail dolly. Six canopies opened in flight.

Rigging without distraction or interruption, a careful DI, and proper pre-flight checks should eliminate all accidents of these kinds. A BGA booklet on safe preparation of a glider for flight has been published:

https://members.gliding.co.uk/?p=23161

The booklet includes advice on making hotelier connections. Please read it.

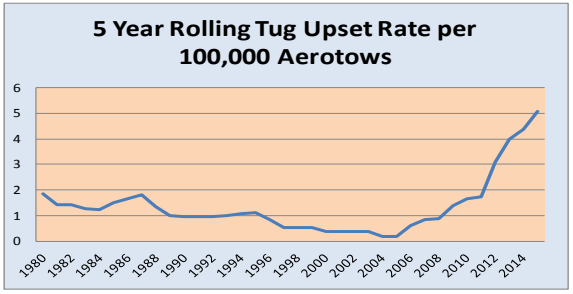
- **Rigging should be directed by a person experienced on the type, in accordance with the flight manual, without interruption or distraction.**
- **A newly rigged glider should always have a daily inspection (DI)**
- **The DI should be conducted by a person experienced on the type, without interruption or distraction**
- **Positive control checks should be carried out every time for every rigging of a glider without automatic control connection**
- **The pilot should carry out proper pre-flight checks, again without interruption or distraction.**

SHORTCOMINGS IN PREPARING A GLIDER FOR FLIGHT CAN BE LETHAL AND ARE COMPLETELY AVOIDABLE.

Tug Upsets

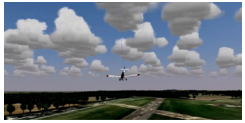
The four tug upset incidents in 2015 allowed the tug upset rate to increase yet again (chart 2). In one incident a Pawnee recovered below the height of adjacent pylons. Accidents of this kind caused fatalities in the 1970s and 1980s.

Chart 2



Please obtain a copy of the BGA safe aerotowing leaflet from your club or download a copy from the BGA website and view the simulated tug upsets on the BGA website.

https://members.gliding.co.uk/?p=20316



https://members.gliding.co.uk/?p=2075

The advice to aerotow safely is unchanged:

- If you are inexperienced, do not aerotow on a belly hook and do not aerotow in turbulent conditions.
- Maintain the correct vertical position of the tug in the canopy. Do not allow the glider to get too high.
- If you are too low behind the tug shortly after the tug take off, or at any other time, move back into position SLOWLY. Being lower than the tug is not dangerous. An upset can follow if you pull up quickly.
- Release immediately if the glider is going high and the tendency cannot be controlled or you lose sight of the tug.
- Fly the glider! Leave any potentially distracting problems with instrumentation or ventilation until after release. Leave the undercarriage down.
- At release height, is it clear? Pull the release, visually ensure the rope has separated from the glider, and raise the nose slightly before making a turn.

Substantial Damage Accidents

For many years field landing accidents have made up one-quarter of all substantial damage accidents; approach and landing accidents at the home airfield have contributed another quarter (charts 3 and 4). These categories accounted for nearly half the substantial damage total in 2015. The 65 substantial damage accidents in 2015 is more than in six of the last seven years.

Chart 3

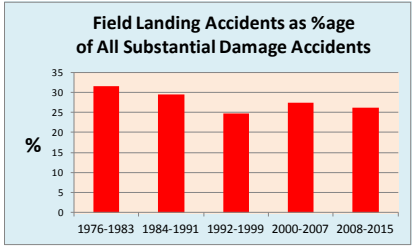
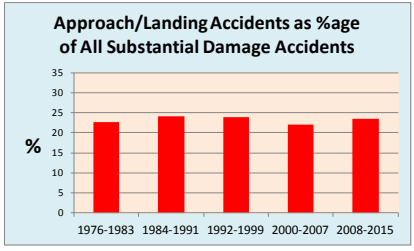


Chart 4



Fatal Accident Trends

Four of the last 8 years have been free from fatal accidents. The 10 fatalities in those 8 years include two in the Tutor that collided with a glider in 2009. A total of 10 is a dramatic reduction from the 8-year average of 41 fatalities between 1976 and 2007 (chart 5). Part of the recent decline stems from no fatalities instructing, or in TMGs or tugs. The largest contributions to this reduction are fewer winch accidents and more successful bailing out after a collision. Stall/spin accidents account for 5 of the 10 fatalities since 2008 (chart 6).

Chart 5

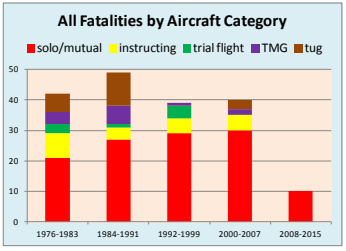
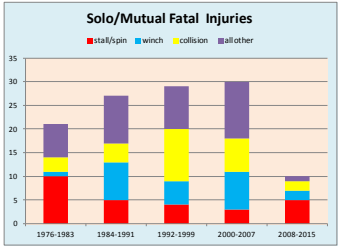


Chart 6



Towards Fewer Accidents

The sources of serious accidents have not changed. Means of avoiding these accidents are summarised in Table 2.

Table 1

Accident	Principal Cause	Actions for Avoiding
Winch	Stall/spin, cartwheel	Follow leaflet guidance
Stall/spin	Overload, distraction	Fly the glider!
Collision	Poor lookout	Lookout, Flarm
Integrity	Rigging incomplete	No interruption/ distraction
Tug Upset	Poor technique	Training
Landing	Poor technique	Training
Field Landing	Field picked late	Pick field early

Web Resources

The BGA web site holds a wide range of resources covering all aspects of gliding, including BGA Safety Briefings.

The main BGA Safety page is at *www.gliding.co.uk/bga-safety-management.* and dedicated pages addressing main sources of serious accidents are at:
http://www.gliding.co.uk/safewinchlaunching
http://www.gliding.co.uk/safeaerotowing
http://www.gliding.co.uk/spinavoidance

All Safety Briefings are held in the web Forms & Publications Library and can be seen by selecting Category: Safety; Subcategory: Safety Briefings.

Accident Review 2015

Appendix – Fatal, Serious Injury & Substantial Damage Accidents in 2015

Category	Accidents	Circumstances
Field Landing	11	Hit fence hidden by slope
		Hurried field landing following attempt to start engine
		Hit telephone wire on approach to field
		Landing long due to position of gate, excess speed, overshot into far hedge, SERIOUS INJURY
		Glider struck obscured rock
		Local soaring, lost, overshooting, groundloop
		Drifted downwind, bounce, hit far hedge
		High on base leg, turn, sink, crashed into field
		Field landing, crash, SERIOUS INJURY
		Stretching glide, turned away at 100ft to land in field
		Late selection, groundloop to avoid wall
Winch	3	Wing drop, began to cartwheel, saved by winch driver who chopped power and braked
		Elevator restriction after tail struck ground at beginning of launch
		Simulated cable break, restored approach speed, abbreviated circuit, spin, SERIOUS INJURY

Category	Accidents	Circumstances
Stall/spin	11	TMG, landing, stalled from 15ft, SERIOUS INJURY to P2
		Landing, stalled from 10ft
		Oscillation, then spun off aerotow, landed in crop
		Landing, dropped wing, went over hedge
		Turbo did not start, fuel off, landed in crop
		Approach, low, stalled into a tree 20ft above ground
		Landing, 1st flight on type, flared too high, stalled arrival
		Approaching roundout, closed brakes, balloon, stall
		Stalled at 20-30ft trying to lower undercarriage
		Stalled into undershoot, bounced onto runway, SERIOUS INJURY
		Stalled and began to spin on the approach, SERIOUS INJURY
Undershoot	6	Approach too high and close, landed off site, ran into wire fence
		Early solo pilot undershot in turbulence
		Low, extended circuit with airbrake deployed, undershot
		Undershoot, SERIOUS INJURY to P2
		Undershoot
		Landing into sun, P1 took over, handed back control, undershot

Appendix – Fatal, Serious Injury & Substantial Damage Accidents in 2015 (cont)

Category	Accidents	Circumstances
Landing	10	Landing, PIO led to several further landings
		Glider collided with car during landing
		Heavy landing, ballooned and landed again.
		Hangar landing, ballooned, reduced the airbrakes, and landed heavily
		TMG, heavy landing, prop strike
		Landing, hit tractor cutting grass
		Lost control landing in cross wind, hit signs
		Narrow grass runway, wing caught adjacent long grass, groundloop
		Landing, wing caught adjacent crop, groundloop
		Heavy landing
Technical	4	DG1000T propeller shaft sheared during ground run engine test. At less than 50% power, the propeller detached, striking the fuselage before ending up embedded in the port wing
		Canopy frame failed during winch launch
		Blade failure on turbo
		Tug started, engine went to high power in spite of closed throttle, collision
Hit Hill	1	Too far behind the ridge with insufficient height, the glider descended onto the ridge top, and slid/ groundlooped into a stone wall and wire fence

Category	Accidents	Circumstances
Control Misuse	1	Field landing, selected u/c rather than brake in ASW 20, realised mistake, did not lock u/c, which collapsed, ground loop
Wheel	4	Four wheel-up landings
Glider Integrity	4	Four canopies opened in flight
TMG/Tug	2	Engine failure soon after take off at 100ft agl
		DG 808, wing hit crop alongside runway during take off, groundloop
Other Flying	3	Fatal dive into the ground (ruled as suicide - not counted as an accident)
		Groundloop during landing in heather after inability to control oscillation in pitch
		Uncommanded airbrake opening at 125kt
Ground	7	Top half of trailer collapsed onto wing
		Road traffic accident damaged glider
		Aircraft blown over in gale (2)
		Towing out, glider ran into back of car
		Walker's ankle broken by winch cable, SERIOUS INJURY
		Member with parachute dragged over building by wind, SERIOUS INJURY

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