

CABLE CALAMITIES

The BGA Safety Team discusses some of the ways that winch cables can cause damage

With sound procedures, discipline, proper training, and the benefit of accumulated experience, winch launching is a safe and well-proven method of getting gliders airborne; safely conducted many thousands of times each year. Like all aviation activities, however, it relies on consistent situational awareness and adherence to established practices; if several failings coincide, accidents can occur. One of the key hazards is the cable itself.

WINCH SITE HAZARDS

Two pilots had a lucky escape this year when their thermalling turn took them into the path of a winch cable that was launching another glider. Although the winch driver operated the guillotine immediately on seeing the collision, the cable cut straight through the wing, neatly severing the tip and aileron. Fortunately, only two metres of the wingtip and aileron were lost, albeit including the outer hinge, and the glider remained flyable. After recovering to normal flight, the pilots were able to make a safe landing in a nearby field. The amazed accident investigator suggested that it would

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be a good day for them to buy a lottery ticket.

Elsewhere in an earlier decade, two pilots were much less lucky when the cable they encountered remained embedded in the wing, causing the glider to spin at low level. Earlier still, a Grumman Yankee pilot was badly injured the same way after flying into a winch cable during a glider launch.

Accidents like these need not occur if pilots stay well clear of launch areas, ground crews and launching pilots keep a good lookout for airborne aircraft before starting to launch, and transiting pilots avoid overflying winch sites.

WINCH LAUNCH CABLE ENCOUNTERS

Our archives contain a few other examples of the cutting power of winch cables. A K-13 landed safely after losing 18" of tailplane and elevator when the cable broke on launch and flicked back; in similar circumstances another K-13 tailplane was cut back almost to the rear spar; and an Olympia 460 survived a cable encounter that bent the elevator back by 15°. An Open Cirrus pilot was less fortunate, and received serious injuries when the winch cable detached the tailplane entirely.

Cables and drogue parachutes have also become wrapped around glider wings and tailplanes, typically after low launch failures or abrupt cable releases.

Modern designs of parachutes and strops, along with controlled recovery from winch launch failures [1], seem to have helped reduce these risks, but they remain among the reasons why recovery from ultra-low level launch failure is only demonstrated during training, rather than practised, and then only ever initiated by the winch driver.

LAUNCH CREW AND WINCH DRIVER INJURIES

It's not just aircraft that are vulnerable to moving winch cables: club members, too, have been hurt. In a famous accident decades ago, a winch driver's foot was severed when he inadvertently engaged the winch after stepping into a cable loop. Military humour responded with poignant placards reading 'Give a winch an inch and it'll take a foot'.

Launch crews also need to be careful, for a cable can start to move at any time if the winch is accidentally or mistakenly engaged, or the cable picked up by another cable or vehicle. Standing in a cable loop, wrapping the rope strop around your hand, or putting a finger through the launch rings, could result in serious injury if the cable moves suddenly.

It's crucial that winch drivers and launch crews always treat winch cables, like aircraft propellers, as live, and stop the winch engine before any work on the cable.



An encounter with a winch cable that was launching another glider severed the tip and part of the aileron of this glider (Matthew Cook)

Injuries can be damaging for clubs too. Whereas most gliding accidents are handled by the Air Accident Investigation Branch in a spirit of 'just culture', accidents involving equipment on the ground come under the Health & Safety Executive (HSE), which expects machinery to be safely constructed and operated, with written procedures and detailed risk assessments. An HSE investigation could result in tight operating constraints, fines or even closure of a club.

A combination of sensible procedures, training and club safety culture allows these hazards to be managed successfully.

FALLING CABLES

There are other ways that failure to manage risk in winch operations can lead to injury and damage. The simplest is merely when several kilos of parachute and associated hardware fall onto people or property.

There's usually a well-defined area of airfield into which winch cables fall after a launch: members are trained to keep clear, and warning signs or barriers keep visitors away. Accidents occur if glider drift or a crosswind causes the cable to fall outside this area. Such considerations must be covered by club operating procedures, which should include where to site the winch and launch point, and might extend to stopping a launch if the drift becomes excessive. Some clubs use computational models to help [2].

Operating procedures should also take into account where a glider might drop the strop or remaining cable following a cable break or winch failure, which may be further afield than usual. Several cables have fallen over high tension power lines and other structures in such circumstances. A cable falling onto a public road or footpath could cause a serious accident.

Third parties, unconnected to gliding operations, are particularly at risk if they are not made aware of cable hazards and how to avoid them. Even minor third party accidents can create bad publicity for a club and affect the cost and availability of insurance. Airside damage to cars, incidentally, is rarely covered by the owner's motor vehicle policy.

MOVING CABLES

Another common way for a cable to cause damage is by being towed across ground already occupied by a person, aircraft, vehicle or combination thereof. These accidents overwhelmingly stem from wrong assumptions about the location of a cable or about other members' knowledge of the

'IT RELIES ON CONSISTENT SITUATIONAL AWARENESS AND ADHERENCE TO ESTABLISHED PRACTICES'

cable location, often coupled with departure from the usual operating procedure.

This is the underlying theme for cable accidents, which can be avoided by following well thought-through procedures, and being alert to hazards and situationally aware.

AVOIDING CABLE ACCIDENTS

It's up to all of us to help eliminate cable accidents. Here are some things we can do:

Launch crew and winch drivers:

- Always treat cables as live
- Never step into a cable loop
- Never put your finger into the rings
- Always hold the cable such that it will pull easily out of your hand
- Check for nearby aircraft before launching
- Monitor the wind and cable drop area
- Stop the launch if glider drift means the cable could drop outside the safe area
- Check for people, aircraft and vehicles before winding in the cable, and allow for drogue parachute drift at speed and in wind
- Before working on a cable, always ensure that the winch engine is stopped and the cable not attached to the tow vehicle.

Pilots:

- Check for nearby aircraft before launching
- Follow Safe Winch Launching advice and, if the launch fails, make a prompt and not over-vigorous recovery [1]
- Remain well clear of launch areas when soaring or manoeuvring
- Avoid transiting over winch sites and choosing them as turning points.

Cable and glider retrieve crews:

- Be aware of where cables lie relative to people, aircraft and vehicles, especially if departing from usual operating procedures.

Clubs:

- Ensure that winches are well maintained and strops and drogue parachutes follow

current size and construction advice [3,4]

- Ensure that winch and retrieve drivers and launch crews are appropriately trained [5]
- Provide clear policies on winch placement and operational conditions to avoid cables dropping beyond the safe area
- Encourage launchpoint 'just culture' so that anybody can call out mishandling of cables
- Ensure adequate barriers or signage to prevent pedestrian and vehicular access to areas with cable risk.

Tim Freegarde and the BGA safety team

■ There is much good advice in the BGA Winch Operator's Manual [3] and, as always, in Managing Flying Risk [4].

[1] BGA, Safe Winch Launching

<https://tinyurl.com/flyright2619>

[2] R G Corbin, The prediction of cable drop position after a winch launch failure at Aston Down,

<https://tinyurl.com/flyright2620>

[3] BGA, Winch Operator's Manual

<https://tinyurl.com/flyright2621>

[4] BGA, Managing Flying Risk

<https://tinyurl.com/flyright2622>

[5] BGA, Ground Training Progress Card

<https://tinyurl.com/flyright2623>

■ All previous 'Fly Right' articles are available from the S&G website.

See: www.sailplaneandgliding.co.uk/safety-articles

These articles may be accessed using the QR link below.

