

Gliding Safety...



...and lack of it.

Is it dangerous?

400,000 launches per year

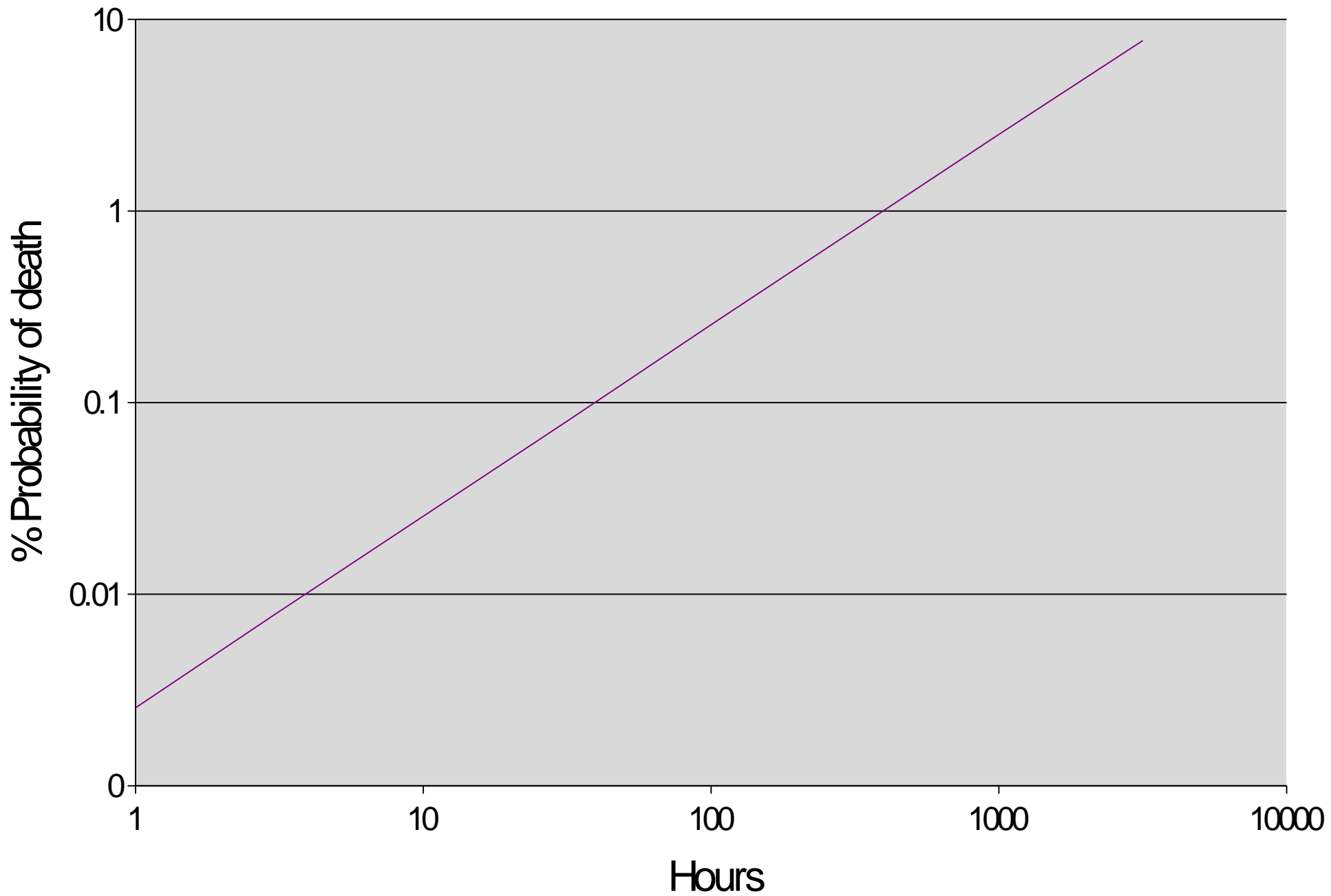
160,000 hours

1,500,000 km

4 fatalities per year (on average)

i.e. 1 death per 40,000 flying hours

Yes.



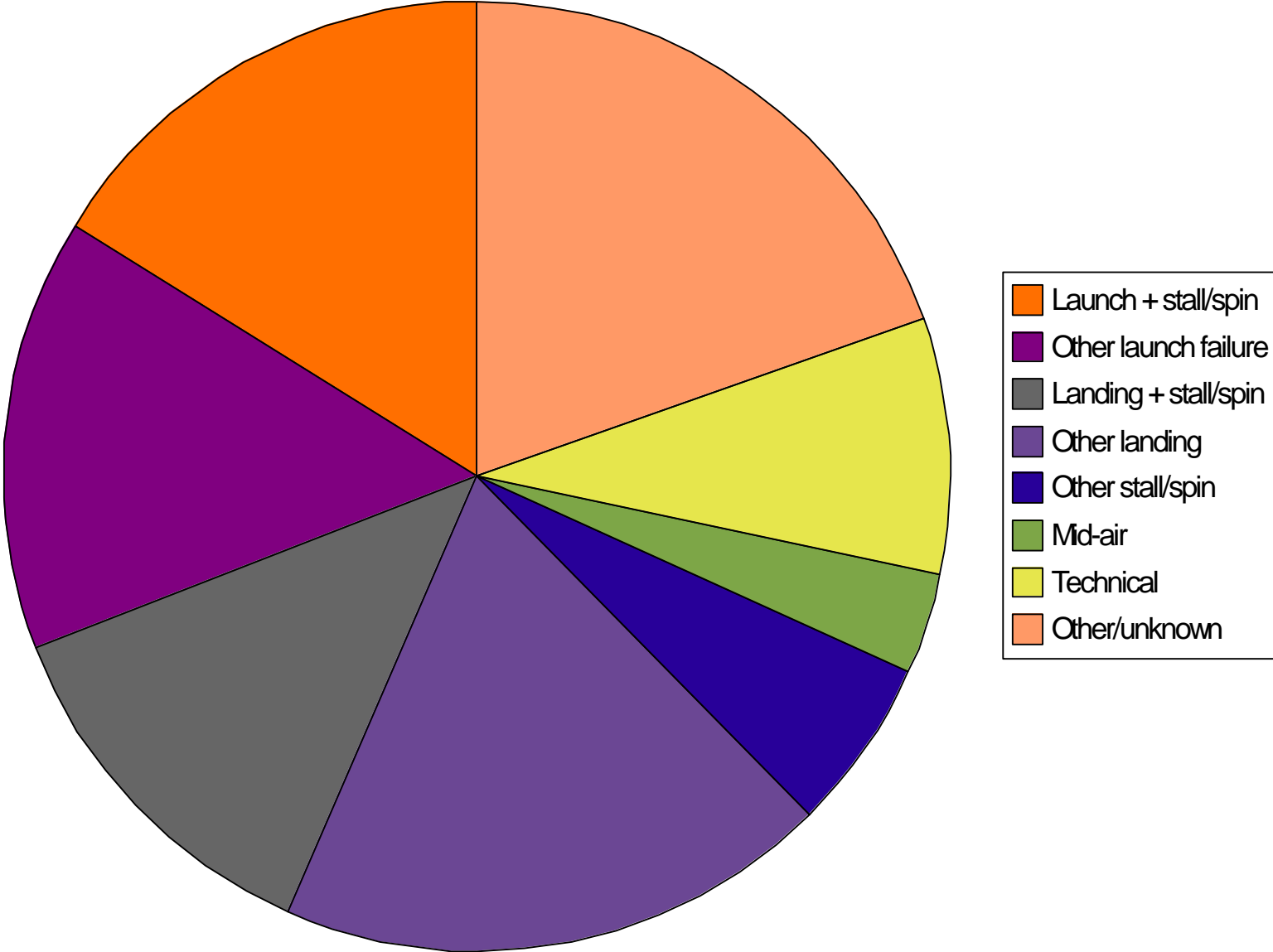
Sanity check

Comparable figures for France:

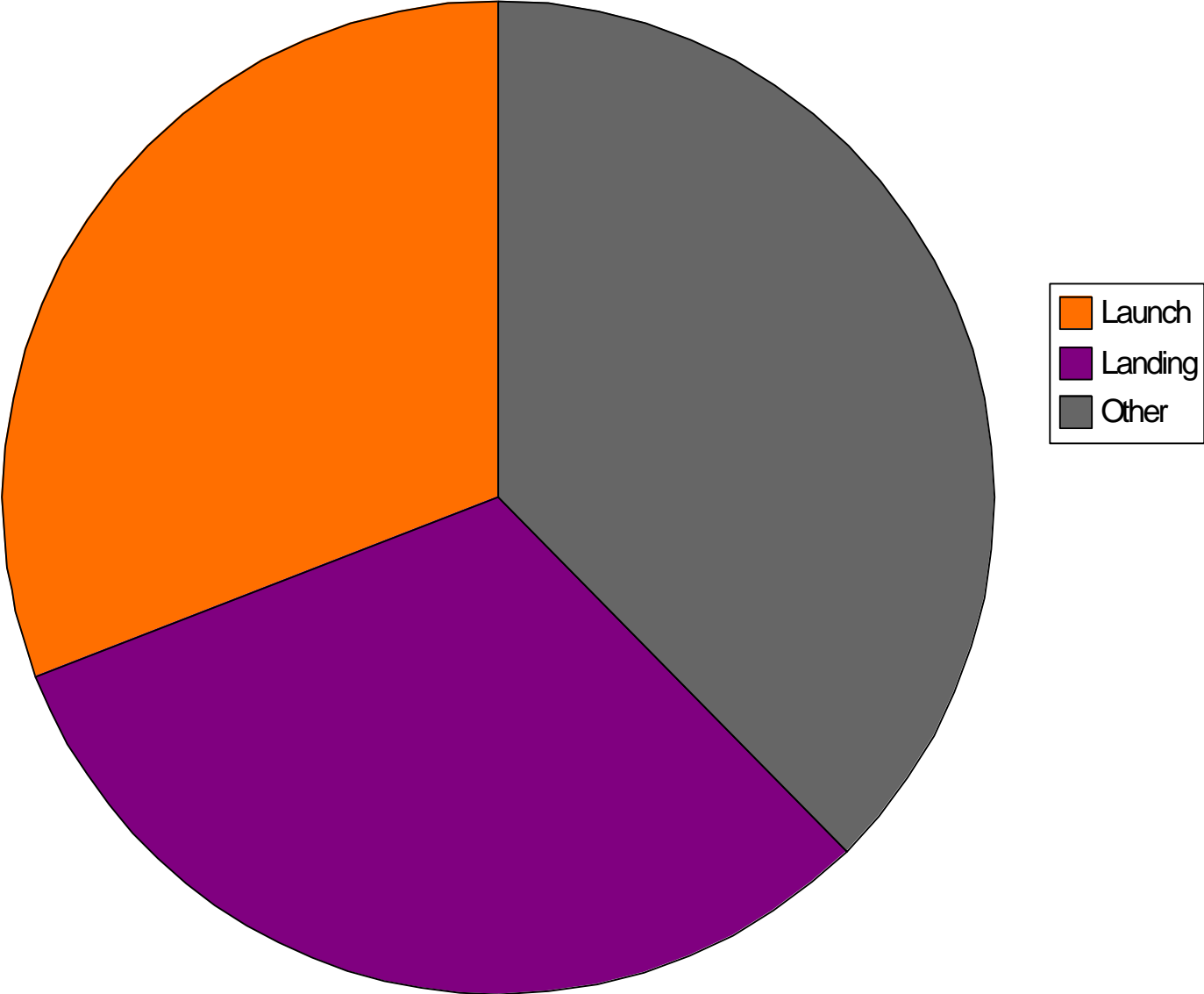
1 fatality per 35,000 flying hours

1 fatality per 50,000 flying hours
excluding alpine flying.

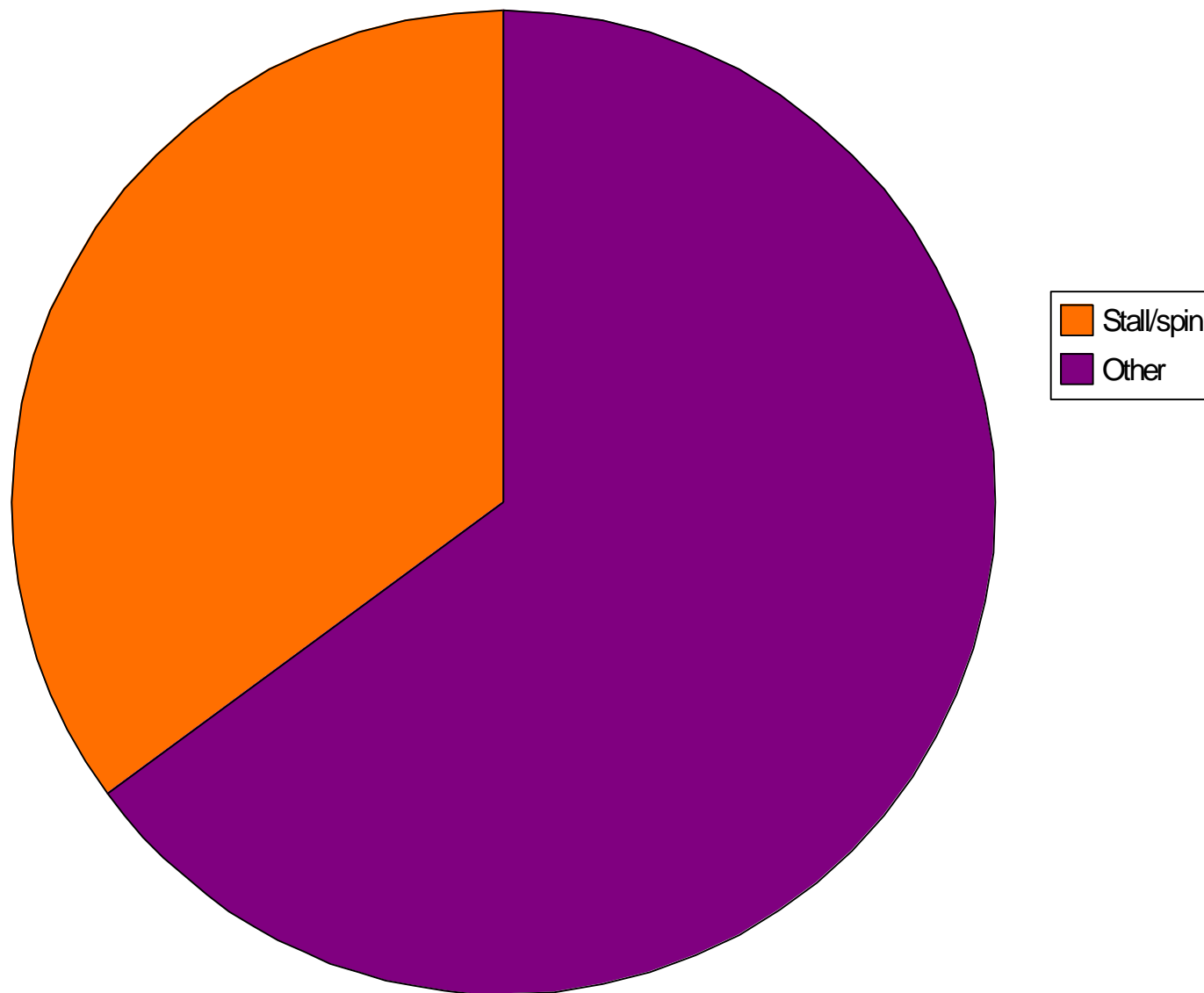
Causes of fatalities and serious injuries



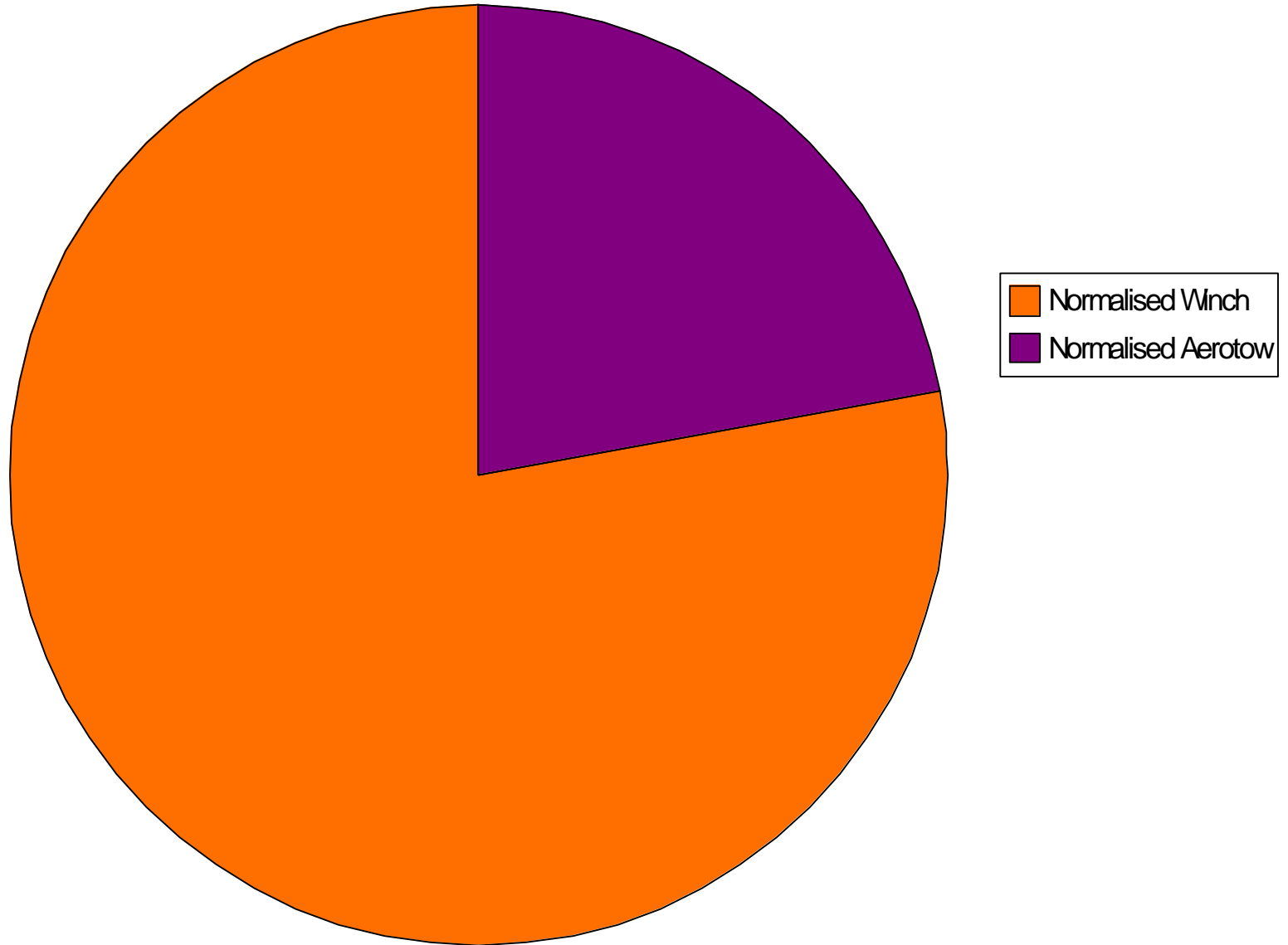
Causes of fatalities and serious injuries



Causes of fatalities and serious injuries



Winch launch vs Aerotow



How do we avoid becoming a statistic?

Almost all accidents caused by pilot error.

Therefore, almost all accidents are avoidable.

In principle.

How do accidents happen?

This was the pilot's second flight on type, and his first for over six months. In a strong wind he flew a high, close circuit, and made a steep approach with a large amount of airbrake. He rounded out too late and landed heavily, damaging the fuselage of the glider.

Build-up of multiple factors

New type

Lack of currency

Difficult weather conditions

Poor circuit planning

A launch failure/spin-in accident

This fatal accident occurred after a winch launch failure at about 150-200ft when the cable parachute failed. Although there was enough runway for a straight ahead landing the pilot turned back through 180degs then turned again into wind. Half way around the final turn the glider spun, hitting the ground vertically. The pilot was killed instantly.

Eventualities

Stall/spin awareness

Fly the aircraft!

Late field selection

After an aero tow to 2000 ft, P1 elected to fly west, to descend onto the north-facing South Downs ridge, after crossing the Arun valley gap. An uneventful period of ridge soaring followed, while staying west of the Arun. During this phase, P2 practiced turn coordination and P1 explained the basic principles of ridge soaring. While crossing the Arun gap eastwards, to return to Parham, an area of heavy sink led to a rapid height loss. P1 flew to some small spurs on the eastern side of the area known as the Bignor bowl and attempted to ridge soar, but this was unsuccessful. By this time a field landing was inevitable, with very little time for field selection. There was no time for a circuit into the chosen field, which was of moderate size. The approach was downwind, onto a slight uphill slope. With a tailwind estimated at 10 kt, the glider touched down well into the field, some 70 meters short of a post and wire fence, bounced twice, passed through the fence and began a ground loop to starboard.

Flying away from a chosen field

The pilot was attempting to land out in a suitable field. Late in the circuit he encountered lift and tried to soar it, but ran into sink and could not reach his field.

Choosing another, he did not have enough height to clear the fence, which he hit a glancing blow that pitched the glider onto its nose and left wing, breaking the fuselage and wing.

Disconnected controls

This was a fatal accident, probably due to the elevator not being connected. After a shallow winch launch the glider flew unusually low and fast along the ridge with occasional pull ups before diving into trees. The locking pin was found on its string and there was no sign of it being fitted on this flight.

Winch cables

Due to a crosswind the winch cables were falling to one side of the launch line. To save time they were towed out from where they fell rather than being fully wound in first. This caused a large bow in the cable run.

The experienced visiting pilot flying the first K8 was launched on the first cable, had a weak link break at about 150ft and landed ahead. A tractor was sent to retrieve him and the glider was towed off to the side of the launch line before starting back up the field. Unfortunately, due to the bow in the cable run, instead of being clear of the cable, the tractor and glider were now directly over it.

The proximity of the returning glider to the cables was questioned by the pilot of the second K8, a visiting instructor, but he elected to defer to the decision of the launch marshal who happened to be a national coach. The second K8 was launched with the tractor and first K8 still over the cable, both of which suffered minor damage. When the second K8 reached about 400ft the cable broke and the glider made an abbreviated circuit and landed safely.



Mid-air collisions

Rare but serious – about 2/3 survivable.

Avoidance – lookout, thermalling & circuit procedure.

If you're involved in a mid-air and can bale out, do so.

Accidents are not caused by stupid people – they're generally caused by normally intelligent people under high workload making poor decisions.

i.e. it can happen to you too.

An honourable exception

This was a training flight for a solo pilot and, after a simulated practise cable break at height, the glider was flown onto the ridge for hill soaring practise. After about 20 minutes of patchy hill soaring at 500 to 800 feet above the ridge, the P1 decided to do some ridge running. On the second beat, travelling below ridge level with the ridge on the right side of the glider, and with the P1 flying the glider at 70 to 75 kts, the right wing caught in the long grass. The wing snapped off at the root and the glider rolled rapidly before striking the ground inverted at a shallow angle. The P1 suffered a bruised leg and the P2 a strained back from being 'doubled up' in the cockpit.

The sequel

A serious accident had occurred on the airfield shortly before these incidents. The gliders were damaged by a launching cable snagged by an Emergency Service vehicle and dragged across them.

BGA Comment:

If an accident occurs at your site, your first priority is to ensure you do not have another accident.

How to stay alive

Winch launch technique – non-agricultural, eventualities considered.

Stall/spin awareness.

Check, check and check again – duplicate control checks, DIs, positives, sense, release, pre-flight, etc.

If it's going badly – fly the aircraft!

Aviation in itself is not inherently dangerous. But to an even greater degree than the sea, it is terribly unforgiving of any carelessness, incapacity or neglect.

— *Captain A. G. Lamplugh, British Aviation Insurance Group, London. Circa early 1930's.*