



Care and maintenance of paragliding harnesses

Paragliding harnesses are exposed to wear and tear and require regular checking. Moisture, dirt, exposure to sunlight, heavy landings, being sat on whilst parawaiting and being crammed into glider bags can all cause damage and accelerate the ageing process. The following is a list of points to look at when performing routine checks of your harness.

- Start by making an overall visual check, looking for signs of wear and damage.
- Check all accessible webbing, especially where it passes through buckles or touches the seat board. Look for frays, cuts, wear and any other damage to the webbing and stitching. Don't forget to check areas of webbing concealed by carabiners, buckles and other parts of the harness structure, or where it comes into contact with moving parts such as opening carabiner gates, sliders, etc.
- Seat board (if present) – take it out and check it for fractures and cracks. Inspect the edges where they touch fabric or webbing and look for any rough spots – these should be covered by protective edging. The point of maximum wear is often the lip on the front of the board.
- Zips – many reversible harnesses rely on zips to turn the paraglider bag into the harness, and vice versa. If a zip has broken teeth, or requires force to move the slider, it may need to be replaced. This is particularly important if the zip is necessary for the integrity of the harness airbag.
- Speed system – perform a visual inspection of the system. The structural core of the lines connecting the accelerator bar to the attachment points on the risers is usually covered by a protective outer sheath. If this looks frayed and the strands of the core can be seen, the line should be replaced with the type specified for the purpose by the harness manufacturer. Do not be tempted to substitute an alternative line – the correct diameter must be used so that it runs cleanly through the pulleys.
- Perform a function check of the speed system – ensure the system works smoothly, the pulleys are not twisted and any knots connecting the lines to the bar do not foul the eyelets on the harness through which the lines pass. Brummel hooks should cleanly engage with their counterparts on the riser end, without a gap sufficient to get a suspension line through.
- Speed system set up – for this check you need to have your risers attached. At full leg extension you should be able to get to maximum acceleration. On many makes of glider, this is when the speed system

pulley blocks on the risers come together. When the accelerator is released, there should be no tension in the system. Accelerator lines on the risers have been known to shrink so that the speed system is tensioned even though the speed bar is not being used.

- Impact protection pads – the under-seat 'back protectors' for damping vertical impacts – are usually an airbag or a block of foam, or a combination of both. Most impact pads degrade with age and this can be accelerated by routinely sitting on them, for example when parawaiting. The manuals of more modern harnesses will specify how to check impact pads for damage. Many foam impact pads can be removed – look for damage to the stitching of the bag containing the foam, and make sure any zips are fully closed as these can affect the impact damping properties. The pads need to be re-installed carefully and positioned in the correct location.

- Some harnesses have an air valve to allow an under-seat airbag impact pad to fill. This is often held in the airstream by a flexible plastic sheet forming a hole or tube, which can bend and degrade over time and prevent the airbag from fully filling. Rips or punctures in the material that makes up the air-containing bag will reduce its impact-absorbing capabilities, or even render it useless. The airbag on an old reversible harness may be ineffective purely because of its age.

- The buckles that hold you into the harness are subject to wear through age and general use, and contamination from sand, grit, mud and snow. Regular flying on coastal sites exposes your kit to salt and corrosion of metal parts, especially where aluminium and steel parts of buckles are in contact with each other. To check the function of a buckle, start by closing it fully – some buckles fasten with a definite 'click' from both clips. Apply a load and give the buckle a wriggle – it should not be possible to open it by depressing the release button on one side. Some buckle manufacturers have detailed check procedures and lifespan advice on their websites.

- Load bearing connectors – whether these are carabiners, Maillon Rapides or soft links, they are essential structural items that undergo frequent load changes throughout their life. Metal connectors should be stamped with load test information. They have a recommended lifespan which may be shorter than the other parts of the harness. They are subject to wear and damage from being dropped onto hard surfaces and from particles that can foul the closing mechanism. Look for cracks and deformations, and check the gate opens and closes correctly. As with harness buckles, it is possible to find detailed check procedures and advice on lifespan on the carabiner manufacturer's website.

- The emergency parachute system should be repacked regularly, following the manufacturer's instructions and repack intervals. Many pilots attend club organised repacks to test the operation of their parachute system and repack their 'chute. These events are a great opportunity to examine the condition of your entire parachute system – not just the 'chute itself but the bridle and its connectors, the deployment handle and its strop, the inner deployment bag, the harness pocket that the folded parachute sits in, and perishable parts of the system (the rubber bands).

- It is possible to examine some parts of the parachute system without taking the parachute out of the harness. Check the parachute deployment pins and the loops they go through – are the pins fully engaged? Are the elastic loops that the pins pass through worn? Have the eyelets bent, revealing sharp edges, or are they missing altogether?

- Check the bridle and bridle routing channel. Bridle channels that use Velcro as a closure system can pull apart the strands of any emergency parachute lines that come into contact with Velcro 'hooks'. Other closure systems incorporate zips for the emergency parachute pocket and bridle channel. It is important that this zip is closed exactly as specified in the manual, and that nothing is trapped in the zip that stops it from opening freely.

- Foreign bodies – this is a good time to sort out the storage compartments. Forgotten items of food and redundant batteries can break down and cause damage.

- Some harnesses or their components are subject to safety notices, so check the relevant part of the manufacturer's website and the BHPA's safety notices page (www.bhpa.co.uk/documents/safety).

- If you are performing a check on a tandem setup, don't forget to include the passenger harness and spreader system, including the emergency parachute bridle routing.

- Keep a note of when you check the harness, for reference.

These harness condition checks are best done indoors with no distractions. Allow plenty of time and follow the manufacturer's advice in the harness user manual. Even if you have the harness professionally inspected, you should routinely perform these simple checks yourself at least twice a year and more frequently if your kit is being used regularly, has been involved in a crash or exposed to dirt, sand or water. If you are concerned about possible damage, wear or ageing, service centres are able to undertake full checks and maintenance for you.

Performing routine kit inspections doesn't mean that you can skip daily inspections or pre-flight checks!

