INFORMATION AND RESOURCE BULLETINS

#1 Water Landings - Considerations

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Information and Resources

Water landings are generally viewed as a last resort.

3 common elements to the advice many clubs and schools provide:

1. Don't fly over water!
2. If you choose to, ensure you have enough height to safely glide to dry land.
3. If you ignored 1 and 2, **DON'T DITCH in the SURF!**

Common issues

Tangled lines

- High risk of getting tangled in slack lines on PG/PPG or HG/WM attachment points/wires. Harness attachments and lines can also become entangled or so tight due to water action that it is difficult to remove buckles, etc.

Harness Design

- Back protection can provide floatation **BUT** can also be a hindrance – causing you to rotate upside down or tangle with lines, particularly inflatable protection.
- Issue of being dragged underwater (submarining) if a reserve or PG wing inflates and starts dragging across the water's surface.
- Further issues with connection to HG/WM if the wing is caught in wave action or causes entrapment underneath.

Helmet

- May assist in impact with water.
    - Can be a potential line catch hazard.
    - May reduce field of view when submerged or wet.
    - May provide additional buoyancy if held close to body.

Wind

- Different conditions require different treatments:
    - Light wind (<6Kn) in PG/PPG – consider landing downwind to keep taut lines and encourage the wing to fall in front, trapping air momentarily and allowing potentially increased time to extricate yourself from harness and swim clear of lines and wing.

- Strong wind (10Kn+) in Pg/PPG – consider landing into wind as wing may be able to kite above you and minimise impact force on landing. Again, concentrate on separation and getting clear ASAP.
- Different aircraft require different treatments:
  - HG/WM – land into wind to minimise speed and maximise flare. Get clear of aircraft ASAP.
  - PPG/WM - Motors may sink quickly and cause extra complication – changing floatation or angles and pulling the pilot under.

Tandem Aircraft

- Consider passengers – get yourself free of entanglement and aid the passenger if possible/safe to do so.
- Potential to assist passenger in removing most connectors prior to ditching if safe to do so.
- WSM trike body will likely sink quickly – consider best escape process and have a Standard Operating Procedure in place.

Common Mitigations

- Carry a hook knife easily accessible.
- Use a suitable life jacket or PFD.
- Consider your harness and other gear requirements.
- PPG and WM may consider emergency inflatable buoyancy aids.

Training Considerations

Paragliding instruction over water, including SIV courses, should follow best practice and have at least the following in place:

- **A highly experienced Team**, including CFI with years of SIV and Acro experience, experienced boat driver and crew if towing.
  - Don't just take their word for it – check testimonials and operational history – you are intentionally putting your wing into an Undesirable Aircraft State (UAS) which may result in uncontrolled descent and reserve deployment with tangled lines.
- **Safety and Rescue plans** that clearly state site and weather limits, minimum working heights, one pilot in the manoeuvre area (box) at a time, communication with backup signals, and clear plan including specialised equipment dedicated to injured pilot recovery. Clear emergency evacuation and emergency services plans.
  - Some areas are a significant distance from immediate medical and rescue assistance.
  - Instruction should never occur over breaking or moving water.
- **A primary method of rescue**, normally a dedicated boat with at least two briefed crew, positioned downwind and able to reach a pilot within seconds of touchdown. (Ideally including towable buoyant sled).

- **A suitable life jacket** for every pilot, proven to keep an unconscious pilot face-up in the water and compatible with the harness and reserve deployment. (generally self-inflating yolk style is least bulky and most effective, with at least **275n** of buoyancy).
- **Other safety measures**, including a hook knife the pilot can reach easily, removing or managing airbag and foam back protectors, and briefing pilots wearing full-face helmets to release the chinstrap as soon as they hit the water.

If training extreme flight manoeuvres over water personally – use or arrange a rescue boat.

https://fai.org/page/notes-risk-water-landing-pg

Types of Water landings

- Still Water
  - No currents visible, no broken water (Lakes, dams, open sea on light wind days)
- River
  - Potential for fast-moving water and submerged obstacles
- Beach (Surf)
  - Broken water, waves, undercurrents, rips, wind direction and strength (presence of wind offshore a further threat)
- Open ocean/sea
  - Swells, distance from land, wind direction a factor.

Considerations

Don't be fooled – height above water is difficult to judge. While disconnecting prior to landing and jumping from the wing may seem like a good idea – you may end up jumping from a much greater height than anticipated.

Water is hard from a height and may lead to further injury or complications immediately after landing, including winding, broken bones, loss of consciousness and even death.

If you choose to jump, you must understand the risks and be able to judge height appropriate to the consequences.

Final words

Water landings are generally unplanned and likely without considerable warning – plan, train and be ready with a clear action plan for the eventuality that is appropriate for the environment you are in.

Some time spent in a controlled environment with test gear can assist in building a plan and remaining calm if a water landing happens in the future. **STRESS** changes our reactions and like so many skills, practice helps build reliable performance in stressful situations.

Video Resources

Bondi Rescue – Water landing PG

https://www.facebook.com/reel/968386368702576

Note the speed the pilot is going as they jump from the paraglider.

Jocky Sanderson

https://www.youtube.com/watch?v=Hp4Y5sS0Gxg

A great lesson from Jocky Sanderson (significant experience instructing SIV and pilotage across the world for paragliders).

PPG Skyschool

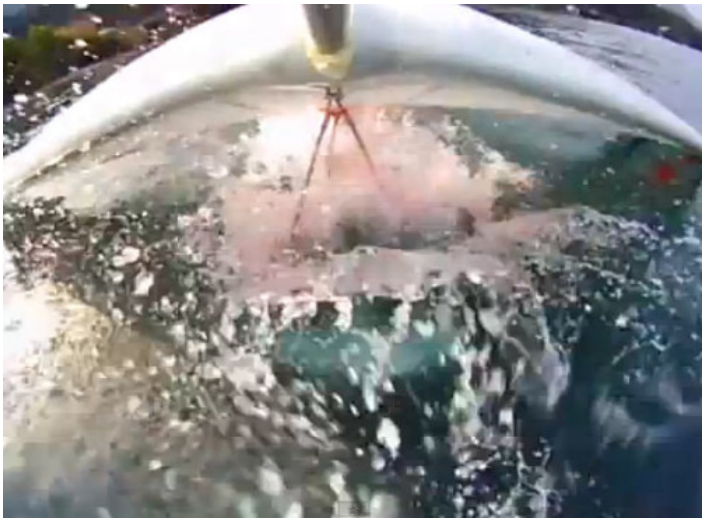
https://www.youtube.com/watch?v=iIrqKvjlF3A

Scenario and pool training exercise example.

HG underwater

https://www.youtube.com/watch?v=IyOpkGkJR-0&t=130s

Video of water landing and complications of separating from glider. Link opens new page



https://www.youtube.com/watch?v=IyOpkGkJR-0&t=130s

Deltaplano subacqueo - Underwater hang glider- Garda BigSur – 004 - Ignazio Bernardi

The following tip is from Fred Wilson in Canada and is about water landing in a hang glider.

If you have to land on water then treat the surface of the water like the ground. Land into wind unzipped and as "out" of your harness as you can manage in the air.

The glider will float for quite a while due to the plugged tubes so you've got time to unhook then get out of your harness.

There's more room to escape from under the glider at the trailing edge than the front so head that way.

Your harness will float due to the closed cell foam that's used, plus it may have Styrofoam in the boot.

If your helmet is certified it will also have a Styrofoam liner and will therefore float quite well.

What you do after you get out depends on how far from shore you are. If you're "at sea" stay with your glider as long as you can so you can be seen.

If you're close to shore and are confident of your swimming ability then ditch your shoes, use your "floaty bits" and head for land.

excerpt from XC Mag Tuesday Tip online - 4 Feb, 2014

Hints and Techniques to consider

Buoyancy Aids (PFD or inflatable lifejacket) for sites where water may be "unavoidable"

Hook Knife – Highly recommended (Some sites state mandatory)

Open Harness (PG) - maintain safe glide altitude to land

Knee hangar (HG) or **basic stirrup harness** – maintain safe glide altitude to land

PPG w floatation attached - maintain safe glide altitude for engine failure

WM – floatation/carry or wear PFD – maintain safe glide altitude for engine failure

Reflection

Like many activities related to water – **panic kills!**

As many Australians learn about the surf:

- **If caught in a rip or undertow** – try not to panic and go with it maintain floatation. Once clear, swim sideways away from the current and then slowly make your way to shore. If possible, signal for assistance.

Now let's think in those terms for aircraft:

- Land away from breaking water – breaking water/waves contain currents and are severely turbulent compared to open/calm water or swell.
- This seems counter-intuitive as we want to be closer to the safety of land – but the most dangerous area is the **surf zone**. You may not be able to extricate yourself from the aircraft and may be pushed under or have the aircraft acted upon by the wave and current action, rendering your task even more difficult and dangerous!
- Wave action can pull the wing under, cause disorientation and make staying upright in gear near impossible.

"Stay Safe, have fun and enjoy the great flying opportunities and scope that Australia provides"

From the Operations team at SAFA