

Safety in Diving:

Using a Dive Float and Flag

by Lloyd Borrett and John Lawler



The primary purpose of a dive float and flag is to alert boat traffic to the presence of divers below and warn them to keep clear. For safety, a dive flag must be flown when diving in most inland waterways and offshore sites. As one early diver suggested, “you don't want to have your hair parted by a propeller.”

The Rules

Rules governing the use of a float and flag vary by state and locality. In Victoria any vessel with divers operating from it must always display signals by day or night to inform other vessel users. The daytime signal for divers is the international Code Flag ‘A’, at least 750mm long and 600mm wide. It should be placed to ensure all-round visibility.

During night diving, a vessel must show the international signal for a ‘vessel restricted in its ability to manoeuvre’. These are three lights in a vertical line, top and bottom are red and the middle one is white.

In Victoria, a five knot speed limit applies to vessel operators and water-skiers within a distance of 100 metres of a vessel or buoy on which a diver below signal is displayed.

Please note that the dive flag does not mean that other vessels can't come up to and right past the dive flag, or any vessel displaying a dive flag. There is no “exclusion zone” — just a speed restriction zone.

Dive Floats and Flags

Most floats are a plain red buoy of suitable size. However, there are also floats capable of carrying a dive flag. Dive flag floats typically have a small, cylindrical Styrofoam collar that holds the flag upright. There are also dive flag floats resembling a tire inner tube covered with nylon mesh and cloth. Less common are rafts and small, towable boats.

The best way to tow a float, or dive flag float, is with non-floating line wrapped on a hand-held reel.

The common VSAG practice is to use a 30 metre (100 feet) length of line with a red surface buoy at one end and a reef anchor/pick attached at the other end. In addition, a small white float is placed approximately 7 metres (23 feet) from the reef anchor end.

When diving from a boat, the dive flag flown from a high point with 360 degree view is sufficient. When shore diving, each buddy team may be required to tow a dive float and flag. Handling a float and flag is not difficult, but knowing standard practices will help you avoid common mistakes.

Shore Entries and Exits

A float and flag is one more piece of gear that you must carry to the entry point for a shore dive.

A flag with a foam buoyancy collar is light and relatively easy for one diver to handle. The other styles are more bulky and may be easier to carry if the buddy pair carries it upright between them.

When entering into calm water, hold the reel in one hand, let out about 1.5 metres (5 feet) of line and pull the float behind you.

Entries through surf require additional finesse when towing a float and flag. Under no circumstances should you push the float in front of you through the surf. Breaking waves may push it back into you, causing injury or entanglement. Grip the reel in one hand and tow it at least 1.5 metres (5 feet) behind you.

If you enter by ducking through the waves, be sure to release enough line so that the float can ride easily over the top without jerking your arm. To prevent injury, never fasten the towing line to your gear or wrap it tightly around your hand.

Once you reach calmer water beyond the surf line, either prepare to descend, or continue surface swimming and towing until you reach your descent point.

Exits with a float and flag are basically the opposite of entries. This time push the float in front of you so it never rides between you and the water movement. If a strong wave pulls the float toward shore and you struggle to maintain control, let go of it rather than try and hang on. It will wash ashore where you can pick it up after you are safely through the surf line.

Underwater Towing Technique

The towing, or tether, line can serve as a reference during descent. Gauge your release of the line so that the float remains more or less above you during descent, but pay out enough so that swells won't tug on your arm.

Once at diving depth, the float may be secured in one spot or towed. If you plan to venture no more than 15 to 30 metres (50 to 100 feet) from the float, it may be acceptable to secure the tether line to a nonliving object or anchor it to the bottom with weights. If you move further away, however, you should move the float accordingly, or begin towing it.

If your planned exit is at a different location, such as when drift diving, you must tow the float and flag with you. Let out sufficient line so that the float rides easily over the surface swells without pulling uncomfortably on your arm. About a 45 degree angle between the tow line and the surface is usually sufficient.

Letting out too much slack increases the risk of entanglement. Maintain awareness of the line position in relation to any potential obstructions such as an overhanging ledge, a protrusion on a man-made artefact, or other divers.

Remember, never fasten the towline to your gear or wrap the line around your hand. If you don't have a reel, make a loose loop in the free end of the line. Slip this loop around your palm so you can quickly let go if necessary.



VSAG Tow Line Variation

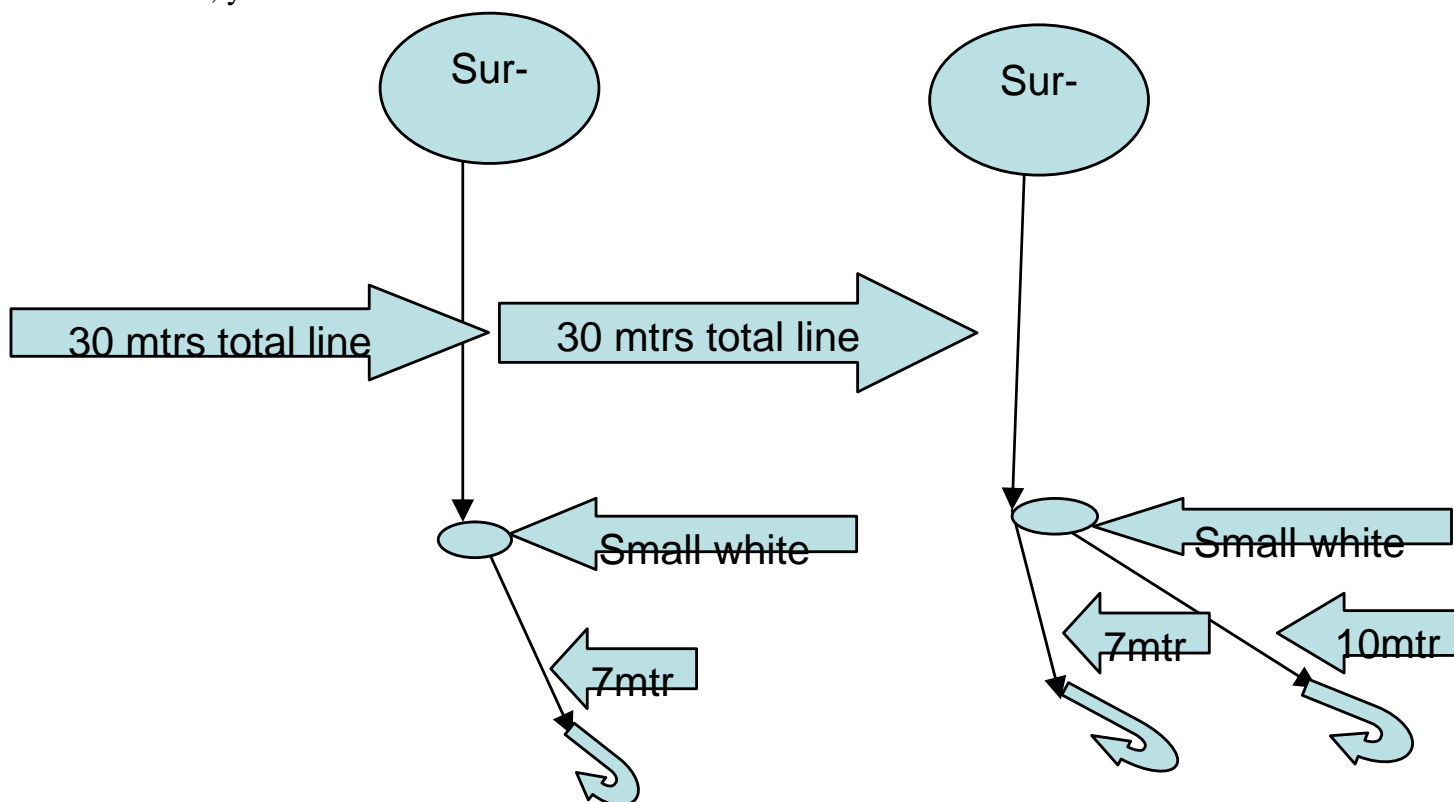
As stated earlier, the common VSAG practice is to use a 30 metre (100 feet) length of line with a red surface buoy at one end and a reef anchor/pick attached at the other end. In addition, a small white float is placed approximately 7 metres (23 feet) from the reef anchor end. The small white float keeps the line almost vertical and therefore off the reefs, thus helping to avoid snagging.

To reduce the risk of entanglement, John Lawler devised a "diver freedom system" after diving for crayfish at Cape Jaffa some years ago. This system enables two divers to have some degree of diving freedom, at a safe distance from each other, yet still be in contact via the common shared line and small white float.

This was achieved by attaching a second 10 metre (33 feet) line, complete with reef anchor, to the small white float. Thus we now have 23 metres of line descending from the red surface buoy to the small white float. The original line extends from the small white float 7 metres to a reef anchor. Then a second line extends from the small white float, 10 metres to a second reef anchor. Two divers can then dive from the one mother line but work around different areas of a reef. (Diving for crayfish is best done independently.)

While trialling this system, John Lawler and Alan Storen discovered that the small white buoy was also a big advantage for normal diving, as the small white buoy kept the line almost (not always) vertical and therefore off the reefs.

Thus using this “diver freedom system”, two divers are able to safely work rather independently of each other, yet still be in close contact.



Ascending

It's important to continuously reel in excess line as you ascend to prevent tangling on gear.

The primary purpose of towing a float and flag is to warn boats that there is a diver below. Thus boats know that they should stay away, or reduce speed to below 5 knots. Unfortunately, the drivers of boats and PWCs are not always familiar with the meaning of the flag or buoy. They may actually approach it to get a better look!

Divers should keep in mind that just because they stay within the legal “safe” zone around their flag doesn't guarantee that boat traffic will keep its distance or reduce speed. Always look up as you ascend, revolving in a slow, full circle to check for boats and listen for the sound of a motor. If you detect the presence of a boat, remain at or below safety stop depth until it departs.

When drift diving from a boat, the procedure is usually for one diver to tow a float (with or without a flag) and for the dive boat to follow. In this case divers are usually instructed to surface as a group. The pickup boat should not approach the float until all divers have surfaced.

The “OK” signal is given by the float handler and the boat approaches cautiously. Don't approach the boat until the engines have been shut down or put into neutral (i.e. no propeller is turning) and the boat captain / dive captain signals that it is OK to board.

Safety Stop

A flag and float assembly can also be useful as a reference during the safety stop. Mark the towline at 5 metres (16.5 feet) below the main float and use the mark as a visual reference to maintain a constant depth.

One buddy should tend the float line. At safety stop depth with the float directly above, surface water motion is more noticeable than at depth. Hold the line loosely with elbow bent, to absorb the up-and-down motion of the float.

Surface Support

Float and flag assemblies often double as surface support platforms. Instructors have students maintain contact with the float to keep them from drifting away while on the surface and as a reference point for ascents and descents.

A few extra weights can be stored inside zippered compartments of some of the inner tube type of float. A float compartment could even hold a snorkel or extra mask.

Dive Safely

Whatever style of float and flag assembly you use, observe a few standard practices:

Don't fasten it to your person.

Don't let it get between you and the wave action.

Watch out for boats.

Used properly, the dive float and flag will become another trusted diving accessory.