

# Boarding & Swim Ladder Basics

*Paul Esterle has been building or repairing watercraft, of all descriptions, for longer than he cares to admit, from hovercraft to power and sail boats. Paul specializes in boat improvement and repair projects utilizing wood, epoxy, and fiberglass. If you have any questions about your boat project, contact Paul at pesterle@comcast.net.*

by Paul W. Esterle

While many of us have ladders installed on our boats, how many have tried to use them to get back aboard? I'll bet a good number actually haven't tried out their ladder to determine how well it really works.

Boarding a boat from the water, especially after a swim when you're tired, isn't easy. Soft ladders have a tendency to fold back under the boat, leaving you looking at the sky with no easy way to board. Some lightweight aluminum ladders also fold up under pressure or pop off the gunnel when most needed.

I have two main criteria for judging the usefulness of a ladder.

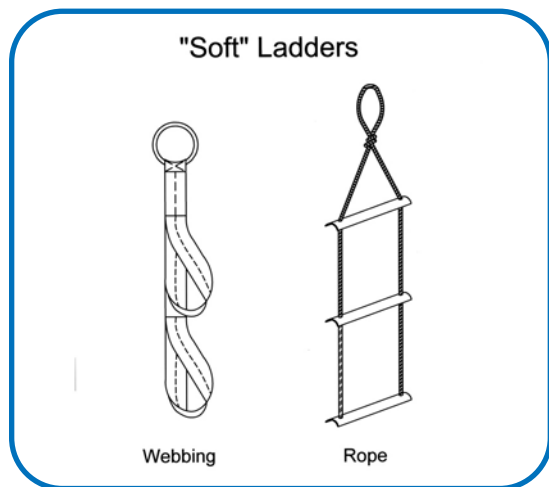
It must extend far enough below the water to allow you to get a foot comfortably on the lowest rungs. Many ladders aren't long enough, making it difficult to leverage yourself up and out of the water.

It must remain vertical when under load. Being on your back with your feet and the ladder extending under the boat is not an ideal or even practical way of boarding.

Let's look at some of the types of ladders on the market and see their promise and their pitfalls.

## Soft Ladders

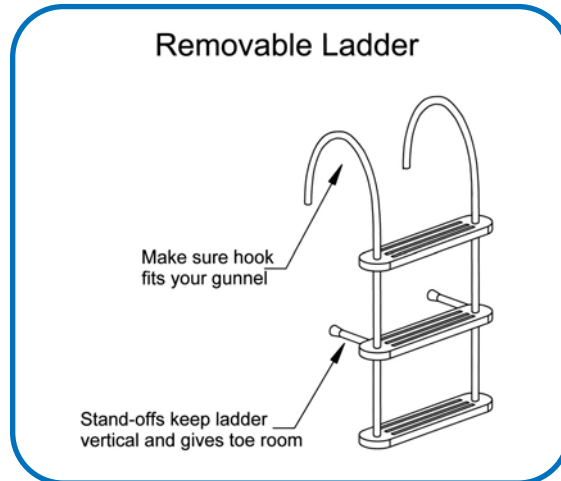
I lump all rope or webbing-based ladders in this category. They usually are designed to hook



over a winch or a cleat. Webbing models have web loops sewn to either side of a central webbing strip. Rope ladders have some sort of rungs spaced out on two side ropes.

These designs suffer from two major problems. The first is that they will either float you under a shallow hull or ride right up against the hull, making it hard to get your feet onto the rungs. The second is that there is no way to keep them vertical as you try to board the boat.

Most of these types of ladders are advertised as emergency boarding ladders. They fold up and store in a compact space. However, before depending on it, try it out and see if you can use it to board your boat. Remember that while you may be fit and able, your passengers might be less than perfectly fit and able to climb the ladder.



## Temporary Ladders

These rigid ladders are designed to hook over the gunnel of your boat. The sidepieces of the ladders look like inverted "J's". The usefulness of this type of ladder depends on how well the hook fits your gunnel. Too narrow and it won't fit properly over the gunnel. Too wide and it may pop off the gunnel under load.

The combination of a light-weight ladder and a heavy-weight boarder may cause the ladder to fold up, especially if the lower end of the ladder extends below the bottom edge of the hull.

Better models of this type have heavier tubing combined with a stand-off that keeps the ladder in a vertical orientation while also allowing space behind the rung for your toes. The length of the stand-off can be modified to make the ladder vertical when used on your particular boat.

## Permanent Ladders

These ladders are permanently bolted to the boat. In most cases, they will fold up out of the way or otherwise collapse (un-telescope?). There is a multitude of designs out there: two-step, three-step or four steps; folding vs. telescoping; with platform or without.

Many are designed to bolt onto a transom swim platform. For sailboats, they can be mounted amidships or on the transom. Many argue that an amidships boarding ladder is easier to use when waves might make the transom bob up and down. These are generally not practical for powerboats.

A final type of permanent ladder is called a

sport or diver's ladder. A central, large diameter tube has steps or rungs welded each side. These are much easier for divers wearing swim fins to mount. They lock into a bracket bolted to the side or transom of the boat. They are very rigid and very strong. You will need to ensure the mounting area on your boat has adequate strength since these ladders have a very small mounting footprint and concentrate a large amount of stress in a small area. Instead of folding, they are removed and stowed elsewhere.

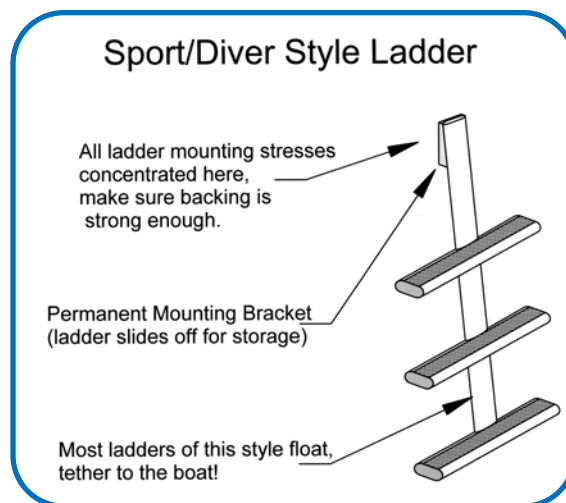
## Mounting Considerations

If you are installing your own ladder, there are some major considerations to think about before proceeding. If you are mounting the ladder to the side of the boat or the transom, make sure the structure will support the load. Outboard transoms usually are strong enough, being reinforced with more than an inch of plywood. Other transoms may need reinforcing with plywood, StarBoard (R) or metal backing plates. Make

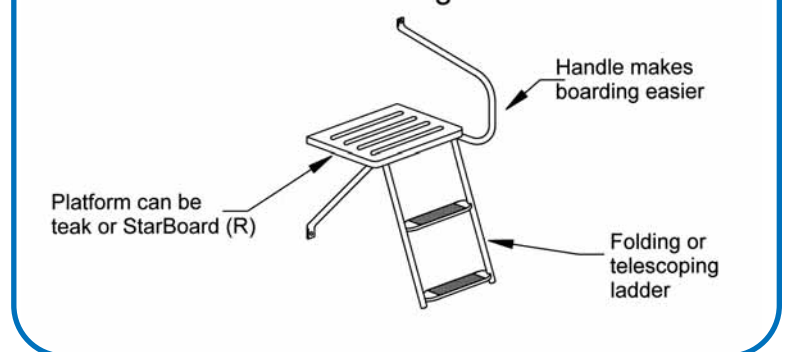
sure to reinforce the area where the stand-offs hit the hull. A ladder attached to a swim platform can exert a tremendous load on the swim platform's attaching points, so make sure the hardware is suitable for such a load.

There is another important consideration not directly connected with the ladder design. Most of the ladders talked about here end at the deck level. There are

no additional rungs, steps or handholds above the deck level to grip onto while leveraging yourself aboard. Stern pulpits, shrouds or rigging can provide critical leverage for making those last steps aboard. Some designs that include a



## Swim Platform/Boarding Ladder Combo



swim platform as part of the boarding ladder also include a railing or grab bar as part of the design.

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