

# Ladder Lessons Learned

There are any number of ways a boater can end up in the drink, intentionally or not, whether it's a swim from the boat on a hot day or losing one's balance reeling in a big catch. Either way, when a boater goes overboard, there is only one sure way to get back in the boat quickly and safely — a good boat ladder. While boat owners are not required to have ladders as safety equipment, it's a good safe boating habit to have one aboard, especially if you venture out alone.

U.S. Coast Guard statistics show that the vast majority of boating fatalities occur on boats under 20 feet. In a number of cases, the victims drowned because they couldn't reboard their boats. The BoatU.S. Foundation wanted to learn what ladders work best for self-rescue situations in small boats. On a beautiful late-summer day, Foundation staff spent nearly 10 hours testing boarding ladders with the help of 10 volunteers from BoatU.S. staff. Little did they know that they would be asked to perform over 200 reboarding attempts over the course of one day. Needless to say, there were a lot of aching muscles the following morning.



**This rigid, three-step ladder was a perfect fit for the Whaler, but it was not usable on other boats.**

With 11 ladders to test on three different boats, testing and rating them was a daunting task. Ladders were tested on a 17-foot Boston Whaler, a 14-foot jon boat and a 12-foot rigid-hull inflatable boat (RIB). Two observers for each boat set up the ladders and took notes for every test. A man and a woman tester on each of the three boats rated ladders individually for the following criteria: comfort, convenience, ease of use and deployment. All testers wore life jackets throughout testing. A fully clothed adult without a life jacket would have a considerably more difficult experience because

of the lack of buoyancy against the weight of water-soaked clothes. While our tests were in warm water, fast reboarding in cold water is even more important because of hypothermia risks.

The testers included five men and



**Though specifically designed for inflatables, this ladder received low ratings on our RIB, but was a tester favorite with 5 stars on the Whaler and jon boat.**

five women of average fitness. There were some notable differences when comparing the experiences of men and women; the most significant being upper body strength, which enabled some men to board some of the boats without a ladder — at least at the beginning of the day. But many of the ladders tested worked equally well for men and women. Observers noticed that women had difficulty reaching into the RIB for the ladder and had to go to the stern to deploy it. Men seemed to have no difficulty deploying ladders over the side of the RIB.

But men did have problems getting their feet into the loops on some of the smaller ladders, whereas the women had no trouble at all. Though men, using mostly brute strength, were generally faster than women, toward the end of the day, technique trumped brawn and fatigue became the equalizer.

For many of the ladders, length was key. Though some ladders seemed impossible to use on the first try, modifying the length to fit the tester made reboarding easier. In some cases, this was the only way to make the ladder usable. Making these length adjustments from the water was difficult at best and often required the observer to board the boat and adjust the ladder for the tester who was already in the water. So it's important to test your ladder ahead of time and take care of the fine-tuning before you need to use it. The ideal length, measured from the surface of the

water to the bottom rung, averaged around 20 inches. (The standard developed for boatbuilders by the American Boat & Yacht Council sets the minimum length below the surface at 12 inches.)

While some ladders worked well on multiple boats, not all of the ladders worked on all three of the boats. There was no clear winner overall, but there were some notable characteristics among the ladders that rated highest as well as those that rated the lowest. The only ladder that received high ratings on all three boats was a simple, one-step strap made from four-inch-wide, yellow webbed material. This ladder, the Sea Steps, has one large looped foothold and a small handhold strap. A small line attached to the top of the ladder made adjustments and installation quick and easy.

Simplicity seemed to be the rule since the highest ranked ladders all had fewer than three steps. The more complicated/longer ladders with more steps consistently got lower ranking. Testers favored three or fewer steps and generally didn't use steps below the top two or three when reboarding. Sometimes testers only used one out of four or five steps, preferring to climb just high enough to get a knee onto the gunwale of the boat and then pivot or roll in from there. This technique gave the single-step models a comfort advantage because the multi-step models left additional steps above the waterline that tended to scrape testers' legs and arms.

A significant frustration testers encountered was swinging — when a ladder was forced underneath the boat during boarding, throwing the tester off balance. This phenomenon demanded more upper-body strength to counter the swing and taxed testers' stamina. The jon boat's low freeboard and instability amplified this problem, making it especially difficult to reboard. Testers found reboarding was easiest at the stern and the bow on the jon boat. Because of the Whaler's slab side and high freeboard, testers experienced less swing when reboarding; and ladders that were nearly impossible to use on the other boats became favorites on the Whaler. Some ladders also swayed to one side during boarding rather than under the boat. Though irksome, the technique was usually corrected easily.



Testers determined that while boarding over the side of the jon boat was possible, boarding at the bow or stern was much easier.

Among our test ladders were some distinctive designs. One ladder made specifically for RIBs had a unique, S-curved design that hugs the hull of a RIB perfectly. A slight outward contour on the bottom step provides better leverage. Though well suited for the RIB, it was not a good fit for the jon boat or the Whaler. In contrast, the Whaler's vertical slab side was perfect for an all-aluminum, three-step, fully rigid design with hook-style arms. Bearing a close resemblance to its permanently mounted cousins on bigger boats, it was unusable on the smaller RIB and the jon boat.

The least favorite ladders were the ones that floated, scraped arms and legs or got tangled, making deployment com-

plicated. For more details on the ladders tested as well as rankings, visit our web site at [BoatUS.com/foundation](http://BoatUS.com/foundation).

Important lessons we learned about boarding ladders:

1. Looks can be deceiving; just because it appears simple doesn't mean it's right for your boat. Designs vary widely so consider your boat's hull shape and freeboard before buying.
2. A few minutes spent testing your ladder in calm, warm water could save you time and hassle when you actually need to use it. It might even save your life.
3. Proper technique is critical. Practice boarding with your ladder so you'll know exactly what to expect should you need to get out of the water quickly.
4. Many ladders need additional rope and/or a carabiner or clip for attaching it to a ring or cleat on the boat.
5. Price is not necessarily an indicator of performance. Even a simple looped dock line can be workable when needed. The key is to test it out beforehand so you'll know what to do in an emergency.



This one-step ladder, the C-Level Sea Steps Safety Ladder, was a tester favorite on all three boats. It even made boarding the jon boat over the side seem simple.

6. Finally, keep your ladder within a short reach from the water, don't stow it in a locker where you won't be able to get to it once you've gone overboard. After all, if you can't reach it, you can't use it; and if you can't use it, you may not be able to get back in the boat at all.

You never know when you'll need a little help reboarding your boat, so be prepared. For more information on our testing methods and results as well as video demonstrations of boarding ladders, visit our web site at [BoatUS.com/foundation](http://BoatUS.com/foundation). ■

— By Amanda Suttles

## Boat Ladder Test Results

Manufacturer and Model	# of Rungs	Highest Tester Rating on:	Material	Retail Price	Web Site
5 C-Level Sea Steps Safety Ladder	1	RIB, Jon, Whaler	webbing/rope	\$23.99	<a href="http://www.clevel.com">www.clevel.com</a>
5 Garelick Inflatable Boat Ladder	3	Whaler, Jon	plastic/aluminum/rope	\$84.99	<a href="http://www.garelick.com">www.garelick.com</a>
4.5 Davis Swim Stirrup Reboarding Ladder	1	RIB, Jon	plastic/rope	\$24.99	<a href="http://www.davisnet.com">www.davisnet.com</a>
4 C-Level Sea Steps Safety Ladder	3	RIB, Jon	webbing/rope	\$42.99	<a href="http://www.clevel.com">www.clevel.com</a>
3.5 Plastimo Five-Step Safety Ladder	5	Whaler, RIB	plastic/webbing	\$124.99	<a href="http://www.plastimo.com">www.plastimo.com</a>
3 Plastimo Rope Boarding Ladder	4	RIB, Whaler	plastic/rope	\$24.75	<a href="http://www.plastimo.com">www.plastimo.com</a>
3 10' Length of 5/8" Polyester Line	1	All	dock line rope	\$12.99	<a href="http://www.westmarine.com">www.westmarine.com</a>
2.5 Sea-Dog Step 5 Rope Ladder	5	Whaler	plastic/rope	\$31.99	<a href="http://www.sea-dog.com">www.sea-dog.com</a>
2.5 Garelick EEZ-In Gunwale Ladder	3	Whaler Only**	plastic/aluminum	\$39.99	<a href="http://www.garelick.com">www.garelick.com</a>
2 Plastimo Folding Inflatable Ladder	2	RIB only**	aluminum/rope	\$50.99	<a href="http://www.plastimo.com">www.plastimo.com</a>
2 Doyle Quickstep Boarding Ladder	1	Not for Small Boats	plastic/rope	\$29.99	<a href="http://www.doylemarine.com">www.doylemarine.com</a>

\*\* Low ratings for two of the test boats brought average down, but ladder received exceptionally high ratings on one boat as noted.

Stars: 5 stars (highest rating) - 1 star (lowest rating)