

Retrofit International Optimist Dinghy

A pint-sized retrofit to open up the wide world of sailing

By Adam Cort

The Optimist dinghy needs no introduction. Designed in 1947 by boat builder Clark Mills for the Optimist Club of Clearwater, Florida, it is a fun little training boat for school-age children that is sailed in more than 100 countries around the world.

Many of today's top sailors got their first taste of sailing in an Opti. Big regattas draw entries numbering in the hundreds. Some 300,000 to 400,000 Opti's have been built over the years, and in 1999 the Optimist was inducted into the American Sailboat Hall of Fame.

The boat was originally designed to be built for under \$50. Its dimensions were dictated by what Mills could do with an 8-foot sheet of plywood. Then one day a Danish tall-ship captain named Axel Damgaard took the boat across the Atlantic where it received upgrades like a battened sail and simpler running rigging—and in the process evolved from the "Optimist Pram" to the "International Optimist Dinghy."

Soon it was an international phenomenon. High-tech racing sails, double-tapered mainsheets, daggerboard and rudder foils costing hundreds of dollars—there's something a little surreal about a boat measuring just 7 feet, 9 inches getting this kind of attention.

Nonetheless, for all the hype and retail opportunities, in its heart of hearts the Opti remains the same fun little trainer Mills created so very long ago. Sure it's boxy, but those hard chines provide stability for a 6-year-old. No, it doesn't have a huge amount of sail area or all kinds of sail adjustments. But hey, what's the rush when you still think members of the opposite sex are "weird"?

The Optimist class association also does its best to ensure that the boat's very success doesn't become a burden by ensuring there's a place for racers of all abilities. In addition to dividing the kids up into different age categories, there is also a "green fleet" category for newbies. This ensures your little one doesn't immediately find himself buried by some freckled little devil with a last name like Coutts or Cayard.

"The Opti is safe and stable. Its simplicity makes it ideal as a sailing school boat," writes Bill Douglas, former editor of the class association magazine "Optinews". "Kids love the Opti because they feel that it won't tip over on them. They can relax and enjoy themselves and mess about in the boat, until one day they suddenly realize, 'Hey, I know how to sail!'"

Optimist Stewardship

Another area in which the Optimist has not entirely forsaken its roots is in the area of ownership and design. Although the question "who builds the fastest Opti?" can be a burning one at the national and international level, for the vast majority of kids, pretty much any Opti will do.

In 1995, the Ireland-based International Optimist Dinghy Association set forth on a brave journey to create parity within the class. The result has been a set of specifications that are mind numbing in their complexity, given the simple nature of the boat, and a drastic reduction in the number of certified builders. Still, for a kid just looking to have some fun and maybe race locally, these kinds of esoteric considerations are largely irrelevant.

For this reason there is a brisk trade in used Opti's. Indeed, there are sailors who maintain that no one really "owns" an Optimist. They just lease it for a while—until they turn 16 when they can no longer race with the class—then pass the boat on to the next generation.

When looking at used boats, it can be helpful to keep in mind the rule of thumb that, barring anything-untoward happening, a boat depreciates about \$100 a year. Given that a new Optimist goes for about \$2,500, a 5-year-old boat will set you back around \$2,000, and a boat from 1996 will cost about \$1,500.

For our retrofit, we decided to reach back a little over 15 years for a boat that cost \$800. According to Steve Sherman president of certified Optimist builder McLaughlin Boat Works, a boat of this vintage is about as cheap as you can get without buying what will just end up being a burden. Sherman said boats can be had for as little as \$600, but they are in “extremely bad” shape.

In terms of a builder, if your young sailor is just planning on knocking around the harbor and doing some local, regional racing, pretty much any Opti will do. Indeed, enthusiasts and some sailing organizations continue to build very serviceable Opti’s from wood. **All the current certified Optimist manufacturers, including McLaughlin and Winner, made fast, sturdy boats before 1995. Although they are not certified to build regulation Opti’s today, Vanguard, Johnson Boat Works and Dynamic Plastic also made good boats.**

When looking over our retrofit boat—an old McLaughlin—the first thing we wanted to look for was the condition of the stainless steel screws securing things like the mainsheet blocks and hiking straps. In almost all boats, there is an aluminum plate set in the fiberglass under every fitting attached to the floor. The combined effects of corrosion and hard sailing can cause these to work loose, especially in the area of the mast step.

According to Sherman, the way to check the screws is to simply give each one a twist with a screwdriver. If a screw turns, it is no longer set. You can try simply re-tightening it, but if the hole is stripped, you can solve the problem by drilling a new hole forward or aft of the original one about ¼ to 3/8 of an inch. Be careful when performing this screwdriver test that you don’t use too much “authority.” Just give it a little torque. Don’t use so much torque that you twist off the head of the screw.

Floating Away

While still inside the boat, we made sure to look at the adjustable, stainless steel, cup-style mast step. The welds on the cup can fail, and the cup should be replaced if there is any cracking. If boat speed is not a priority and the entire mast step is shot, you can replace the step with a short length of 2-by-4. The mast will fit snugly in a 1 7/16-inch hole. An entire mast step costs about \$55. A new cup alone costs \$25. Some old mast steps have a pin instead of a flange, but these are no longer used, because the pin weld has a tendency to break.

In our case, the cup was structurally fine, although we took a minute to check the fore-and-aft adjusting screw to make sure it was still working. Sometimes the screw will become bent. Simply bending it straight with the help of a vise will allow free movement again.

Still inside, our next order of business was looking at the boat’s flotation tanks. Post 1995, all Optimists carry their three mandatory flotation bags strapped down in the angle formed by the topsides and floor. However, before 1995, boats were required to carry glass flotation tanks within which these bladders were carried—and these tanks can leak.

The easiest fix is to simply cut a limber hole, or mouse hole, at each tank’s lowest point. The idea here is that with the ingress of water inevitable, the best solution is to give it any easy way out.

Another option is to seal the tanks using 3M-brand 5200 sealant, applied on the inside of the joint where the tank meets the floor, a job that generally involves cutting and installing a new inspection port. To find any and all leaks, you can pressurize the tank by blowing in air with a hair dryer. Cut out a hole in a piece of cardboard for the hair dryer and tape it down so it covers the original access hole. Squirt a little dish soap and water solution along the tank-to-floor joint, the bulkhead seams and the hull-to-deck joint, and any leaks will immediately become apparent in the form of bubbles. Once all the leaks have been found, reach inside and seal the area with the 5200. You should be all set.

In some cases, the tank floor flange will separate from the floor, which means a bigger, but still reasonable job. According to Sherman, the best approach is to use 3/8- or ½-inch No. 8 stainless steel, flathead sheet metal screws with finishing washers and 5200 as a sealant. Drill five holes through the **tank FLANGE edge with a 1/16-inch-diameter drill bit, being careful not to penetrate the hull bottom.** Then mask off the area beyond the edge of the joint to avoid getting 5200 where it doesn’t belong. Sherman said the tanks generally pull inward and upward toward the centerline as opposed to outboard when they separate, so

simply pressing, screwing and sealing the glass back should do the trick.

Of course, there is always the option of just ripping the things out. However, in nearly all boats, the tanks also help stiffen the hull, so it's not a good idea.

In the case of our retrofit, we chose to go simply cut limber holes down low to keep the water from accumulating where it doesn't belong. (In a 70-pound boat, it doesn't take much to begin to affect performance.) We also bought three inexpensive, white PVC air bags at \$21 apiece. (These should be replaced every couple of seasons.) Call us lazy, but we had plenty to keep us busy up in the bow and didn't want to run out of juice.

Look Out!

Alas, the down side to being the world's most popular youth training boat is that you tend to bump into a lot of stuff—docks, other boats, buoys, you name it—which can be rough on even the strongest of bows. In the case of our little retrofit, it seemed past generations had done their share of abrupt stops. In fact, the hull and deck had separated to the point where you could see daylight in spots. This not only compromises the boat's structural integrity, it allows water to slop in under the deck's overlapping lip.

To fix the problem we first flipped the boat upside-down on a pair of sawhorses—ya gotta love a 70-pound boat! Then we started digging around in the hull-to-deck joint with scrapers and screwdrivers, removing as much of the old adhesive as possible. That done we taped the edge of both the hull and deck around the repair to keep the surrounding gel coat from becoming a mess. Then we jammed a couple of screwdrivers into the joint to open it up, forced in some epoxy, removed the screwdrivers and brought the pieces together with clamps. Any epoxy oozing out was taken care of with the masking tape. The bit that remained could be easily wiped up with acetone.

On Sherman's recommendation, we also cut up some strips of 1.5 oz. fiberglass about 2 inches wide and 4 inches long, which we epoxied on the inside of the hull-to-deck joint, under the deck. The idea here was to make the bow as strong as possible, so our Opti will be prepared to get acquainted, head-on, with many more docks in the years to come.

Finishing Up

At this point we had a solid Opti. The gelcoat was dinged up here and there, but the damage was purely superficial and nothing to worry about. For those sailors interested in doing any kind of cosmetic gelcoat repair, Sherman has a step-by-step guide under the FAQs section of his Web site www.optistuff.com.

With the daggerboard and rudder, all it took was a light sanding and a couple of coats of varnish and they were ready to go. Applying a coat of car wax will also bring back the color, hide scratches and protect the finish.

Both the gudgeons and pintles were in good shape—the lower pintle, like the bow, tends to come in for a lot of abuse—as were the tiller, mast collar and mainsheet blocks. One thing the boat didn't have was an Optiparts mast lock—a stainless steel locking band with a rubber insert that clamps around the mast below the deck to keep it from popping out during a capsize. True, the boat already had the requisite mast tie, but a training boat should be all about security, so we wanted the backup. We also made sure to check and make sure the bridle on the boom wasn't showing a lot of wear. The class requires that the distance between the boom and the lowest part of the bridle be less than 4 inches, to prevent a child's head from becoming entangled in the event of a capsize.

That done, we purchased a new set of hiking straps. In all honesty, we could have just purchased some webbing from a outdoors shop, but having padded, purpose-built straps aboard makes our little boat look cool. Getting some inexpensive decorative automotive striping, which we used for racing stripes, made the boat look even better.

In this case of these and all other purchases, we had any number of vendors to choose from. In addition to boat builders like McLaughlin, catalog companies such as Layline, Annapolis Performance Sailing and West

Marine all stock complete selections of Opti parts, included pre-measured lines. Speaking of which, the last thing remaining was our rig.

Not surprisingly, with an Opti, what you see is what you get: no shrouds, just a vang, mainsheet, mast, boom and sprit. The main sheet was looking pretty ragged, so we replaced with a functional new Dacron sheet for about \$10.

The sail had also seen better days, so we replaced it with a new "club," or practice, sail for \$150. New canvas is an area where gaga Opti moms and dads can spend some big bucks. Top-end racing sails from makers like Toni Tio, Olympic Sails, Omega and North offer Opti mains for \$500 and up. However, that kind of technology is not only overkill for most sailors, its counterproductive, since racing sails are not as durable and will quickly deteriorate under typical rough-and-ready Opti sailing conditions.

Project list and cost summary - International Optimist Dinghy \$800 Retrofit budget:

1. Air bags (3)	\$63
2. Epoxy and filler	\$60
3. 3M 5200	\$12
4. 1.5 oz. fiberglass	\$10
5. Varnish	\$16
6. Optiparts mast lock	\$25
7. Mainsheet	\$10
8. Hiking straps	\$29
9. Mainsail	\$150
Total retrofit work	\$375
Grand total	\$1,175

- LOA 7' 9"
- Beam 3'4"
- Weight 77 pounds
- Sail area 35 sq. ft.
- Draft 2'9" (board down)

Sources

McLaughlin Boat Works, 800-784-6478, www.optistuff.com; United States Optimist Dinghy Association, 609-492-9000, www.usoda.org; West Marine, 800-BOATING, www.westmarine.com; Annapolis Performance Sailing, 800-729-9767, www.apsltd.com; Layline Inc., 800-542-5463, www.layline.com.

McLaughlin Boat Works, World Champion Boatbuilder For Over 40 Years.