



**The most
technologically
advanced Optimist
in the world!**

The McLaughlin Pro Racer is engineered to be the absolute stiffest, highest quality, and **MOST TECHNOLOGICALLY ADVANCED** Optimist available in the world. Below is a basic explanation of how we can make these statements. Although the boat is constantly evolving, what is listed below should stand for evidence that we are always striving to be the best!

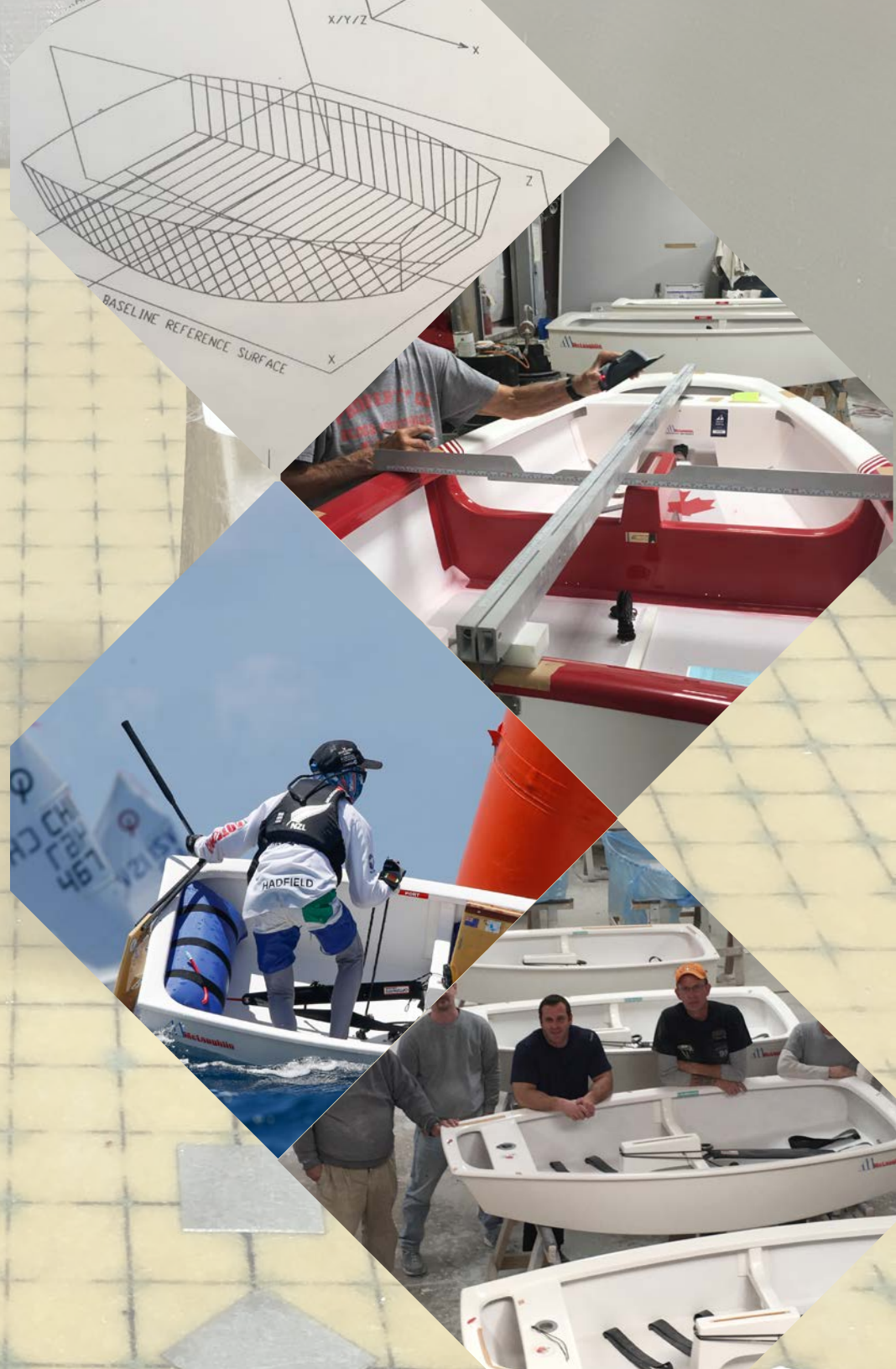
Did you know McLaughlin Pro Racers transcend model years? Substantiated improvements are added immediately to the boat, so you receive the latest, fastest, and best boat available.

TESTING

McLaughlin is a company of sailors and engineers with a passion for building the very best boat possible. We recognize that in order to build the best boat, we must understand it, test it, and learn from it. This is only possible if there is a way to provide constant feedback and testing. McLaughlin works with coaches and sailors to test over 250 boats annually, in all conditions. The USA has one of the strongest and largest fleets in the world. With this fleet, McLaughlin is able to quickly test our boat with some of the best sailors and coaches. This feedback is not just once a year like some builders. We personally attend over 30 regattas a year. This includes at least one annual IODA Continental or World Championships, as well as multiple National Championships, more than any other builder in the world.

EXPERIENCE AND SKILL

Building a strong and balanced hull that is minimum race weight is not easy. It requires skill, technique, and exacting measures. Building the best hull is not just about weight. Balance and stiffness are critical as well. Our distinguished craftsmen have refined our processes to exacting standards, guaranteeing consistent results. Many of our craftsmen have been with us for over 10 years. When we began building Optimists, there were 800 Optimists in the US. Since then, we have constructed over 15,000 Optis, more than half of the 23,000 in the US today.



Fast by Design

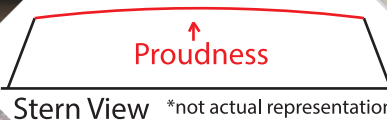
MIDSHIP FRAME

We utilize the maximum allowable glass in all areas of the midship frame, thus resulting in the stiffest hull. We are able to do this through a process of using the perfect glass to resin ratio, thus keeping weight to a minimum.

All McLaughlin boats feature the maximum size airbags allowed. This means the boat will come up drier after a capsizes, and more water is displaced from the front of the boat. More water shifts to the cockpit, where the skipper can bail it out.

We use a CUSTOM machine screw for the mast step. It's screw head has been designed to be the same thickness as the mast step metal. This prevents the eventual movement of the mast step. Most screws will not seat in the counter sink of the mast step, because the screw counter sink is greater than that of the mast step. No other Optimist builder uses a custom designed screw head like we do.

McLaughlin hulls have optimized rocker and proudness. Our hull rocker is optimized for the ideal hull shape for all conditions. The hull is also slightly proud to minimize splash.



HYDROSLICK

FASTEST HULL SURFACE POSSIBLE

Viscous Resistance, or drag, is the single largest resistance component that an Optimist builder has control over. A high gloss hydrophilic surface is the hardest to produce, but it is also the fastest. In addition, it is also the easiest to maintain and longest lasting. Once the hull has been faired, mold release waxes are removed, and the bottom is treated with our **HYDROSLICK** process. This process seals the gelcoat which helps with maintenance, and has hydrophilic properties allowing the hull to be evenly wetted, reducing drag.

Optimal Bow and Stern shape. Featuring a narrow bow for maximum wave penetration, our hull design allows the hull to move through the waves as best as possible. In addition, the stern is narrowed to reduce induced friction as water moves down the hull and past the stern with minimal resistance.

SHARPENED AFT CHINE

All sailboats have form resistance, a sideways deflection of water as the hull advances. Extensive tank testing and computer modeling have proven that by sharpening the aft chine of the Optimist, you are able to create a smoother release of water. This minimizes turbulence, therefore reducing form resistance.

The top of our daggerboard case is at minimum height, ensuring that the maximum amount of daggerboard is furthest in the water.

Materials and Lay Up

QUALITY RAW MATERIALS

This starts with the statement **proudly built in the USA**. You can not build the world's best boat without premium raw materials. The USA has the highest quality refineries, resources, and manufacturers in the world. We can confidently say our custom glass and premium resins are the very best on the market.

We use a custom "super" adhesive to make glass-to-glass bonds stronger than the substrate. This adhesive is also used on the mast step, to ensure it never breaks.

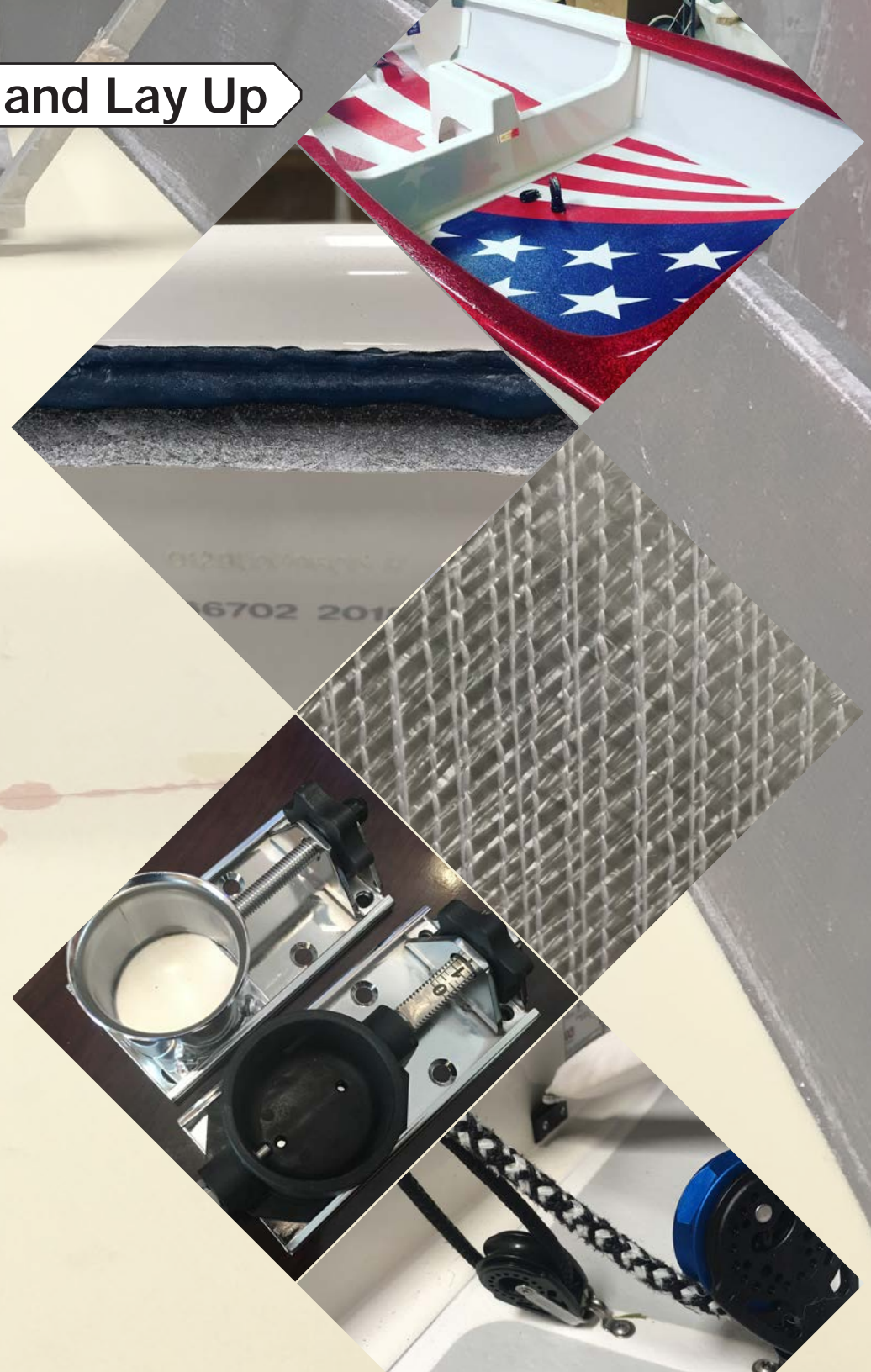
OPTIPARTS
MARINE EQUIPMENT

HARKEN[®]

McLaughlin uses a Custom 45-45 biaxial cloth in the side walls of the hull. Several builders claim to use a biaxial cloth, but use the standard 0-90 version. This is much less effective in preventing twist, as the fibers are not aligned with the load paths. Our 45-45 cloth glass is specific to our use, and is the strongest and best engineered material for an Optimist.

We use only the best Optiparts equipment in every boat we build. All Optiparts fittings have been tested repeatedly, and have held up in the worst environments for over 30 years.

Since our founding, we have been proud to work with Harken[®] manufacturing. Over the years, this partnership has brought unique Optimist rigging and equipment ideas to life. From the "hook-in-block" standard on Optimist masts, to color anodized sheaves in ratchet blocks, McLaughlin and Harken are pushing Optimist rigging forward.



Unique Builder "Quality is in the details"

BALANCED RIGID HULL

McLaughlin's Custom 45/45 biaxial glass is unique in Optimist building. It is the strongest glass allowed by the class. It is laid up along the sides and overlapped at the corners. This gives the McLaughlin hull exceptional stiffness and torsional resistance, without adding weight. Our cure process is also unique. Most builders need to turn their tooling every day. Our standard hull stays in the mold 48 hours. This makes the hull very fair when it is removed from the mold. PRO Racers are removed from the mold after 96 hours, an extra two days of curing time. Doubling the curing time assures the resin reaches full hardness, retaining the intended shape longer, and creating an even smoother and fairer surface.



VACUUM BAG PROCESS and OPTIMIZED BALANCE POINT

Using the highest density foam allowed by the class, our vacuum bag process prevents voids and creates a perfect composite bond between the hull fiberglass, structural foam, and inside floor. Using the highest density foam, ultimately we create the stiffest and most durable hull possible. Over the years, we have perfected the ideal location and number of vacuum ports, as well as the ideal pressure.

Pre-rolled, or wetted glass, is used for all our parts. We wet out all the glass before applying it to the mold. This helps us to best control the weight and balance of the hull as well and uniformity of resin in the laminate.

The maximum allowable overlap is put in all the corners in McLaughlin boats. The rules allow 50mm of material overlap. The larger the overlap, the stronger the corners, and therefore the hull.



How important is the Spar and Foil placement?

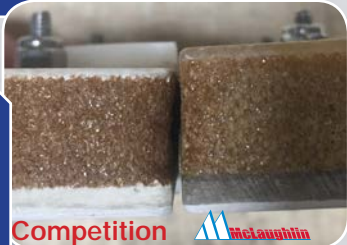
APPENDAGE ALIGNMENT

Placement of the mast, daggerboard, and rudder are critical components. Over many years of production, we have developed a system for placing the appendages exactly on centerline. We are so confident in our system that we have even built a laser jig to prove it.



McLaughlin's mast height is at the maximum allowed height possible. This can be up to a 10mm advantage over the competition.

Exceptionally strong mast partner. The mast partner and mast step see the highest working loads. McLaughlin uses the maximum amount of glass in this area. This minimizes deflection and prevents excessive damage in the case of a demasting.



Competition McLaughlin

LOW TURBULENCE DAGGERBOARD SLOT

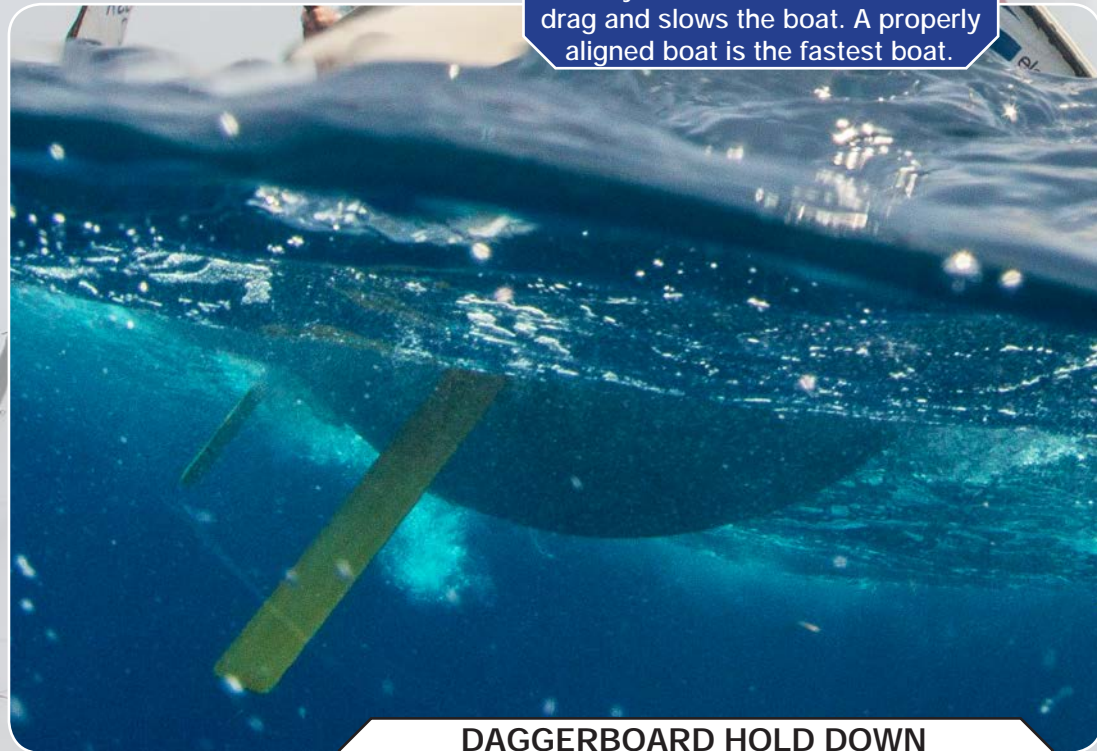
The daggerboard slot for the Optimist is significantly longer than the blade itself. We have determined the optimum location for the blade through years of testing and created custom inserts that fill in the void. This reduces water turbulence, decreases wear damage on the blade, and positions the daggerboard exactly where it needs to be.

Custom Daggerboard Trunk Inserts

Reduces Drag and Minimizes Turbulence



Any deviation of alignment destroys neutral helm. This creates drag and slows the boat. A properly aligned boat is the fastest boat.



DAGGERBOARD HOLD DOWN

YOU REALLY HAVE TO TRY IT TO BELIEVE HOW AWESOME THIS SYSTEM IS!

Our standard hulls have one shock cord that serves two functions—hold down the daggerboard for sailing to windward and holding it up for sailing downwind. This system is simple, but adds friction to the blade at all times. The PRO Racer design has two separate systems. The first system allows one handed height adjustment with minimal effort. In the “up” position, the board is cocked aft, which is preferred for low weather helm and down wind speed. This simple system also ensures the board is tied in as required by the rules. When returning from the race the board can be taken out of the slot without untying a line. The second system holds the board from moving up and down in sloppy seas and waves while sailing to windward. A vinyl tube handle is incorporated into the shock cord for quick release when you get to the weather mark.

-PRO Racer-
"Your boat, your design."

CUSTOMIZED

The Pro Racer hull is our developmental "Grand Prix" model. It isn't just a fancy name for a production hull. They are usually built to order and to the specifications of the sailor. It comes with every option we can include to give the helmsman an advantage, and we also invite the sailor to add his or her own ideas. Mainsheet rigging style, blocks, daggerboard configuration, hiking straps, bailers, nonskid and even hull cosmetics can all be customized to meet any sailor's needs. Visit our photo gallery or our Facebook page to get more ideas. There you will find truly unique PRO Racer designs.

