



# CAPE HORN 31



**O**n September 18, 2003 Hurricane Isabel roared ashore at Hatteras, North Carolina with sustained winds over 80 mph. My neighbors to the south were cut off for weeks when the ocean overwashed Highway #12 and opened up a new inlet aptly named for the storm. In her wake, the East Coast, as a whole, suffered over three and a half billion dollars in damage.

Near the northern tip of Hatteras Village there were three vacation homes all built by my friend and mentor Carl “Pogie” Worsley. All three survived the storm with varying degrees of damage, but what amazed Pogie was one home in particular. This home had pilings that were undermined and windows blown out, but gusts over 100 mph hadn’t “worked” this home to the point of fracturing the drywall mud.

Four years later I built a new home for my family just 50 miles or so north of what was once Isabel Inlet. I sacrificed my “decor” budget when it came time for insulation. My husband Billy and I had every square inch of exterior wall hosed down with closed cell, two-part, urethane foam. The technology behind closed cell foam would not only keep our house from “working,” but it was, and is the only insulation approved for use in a flood zone because it doesn’t absorb water.

Several months ago, all our theories were tested by the wind and flood of



Hurricane Irene. We were blessed to come through without a crack in our drywall; Pogie was proud.

A few days ago I spent some time interviewing Tyler Cesar, Plant Manager at Cape Horn Boats. While we chatted, I finally got around to the question, “What makes your boats special?” And I readied my pen. You would be amazed that there is always something that sets a builder’s product apart and it is always a real thing not just some BS sales pitch. That day I was surprised to hear that it was closed cell, two-part, urethane foam.

Cape Horn Boats hails from Milton, Florida right out there in

the panhandle. They are family owned and born of necessity and happenstance, not unlike the Carolina builders I know so well. Chris Fabbro built himself the perfect boat for fishing the Gulf and a close friend thought it was perfect enough to ask for one, too. And so on. Build it, fish it and build a better one. And so on. On the day I interviewed Cesar there were three different Cape Horn models in the rigging shop visible from his desk. And Chris’ friends now have nine models total to choose from.

Cape Horn boasts 29 employees, all of whom survived the recent economic crisis. “We are only as good as

our employees,” says Cesar and production hasn’t missed a beat. “We adapted and overcame. We built a better mouse trap.” I’d say they did, but they had an edge and experience with far reaching business challenges. Cape Horn hit their first and perhaps only “hiccup” during the hurricane seasons of 2004 and 2005. “Our dealer network was decimated,” explained Cesar. They branched out to northern states, North Carolina being one, and the small boat world got turned on to a big secret. Cape Horn was perhaps the biggest bang they had ever gotten for their buck.

That brings me back to my decor budget. Why did I give up glass tiles in my new bathroom? Because I knew a house that wouldn’t absorb flood waters or shimmy on its piling legs was worth the trade. At Cape Horn, the Fabbro family has given up some profit margin to stay competitive and infuse their hulls with closed cell, waterproof foam that acts essentially like glue and binds the entire hull together. Not too many years ago there wasn’t a family on the Outer Banks of North Carolina who could imagine a house that didn’t sway and shimmy when the washer machine hit the spin cycle. Can you imagine a 31-footer with 300’s kicking it in excess of 60 mph without a squeak?

Cape Horn can pretty much guarantee that their hulls will not “work.” The foam acts as a shock absorber and the engineers have designed their hulls so that energy is directed up and out. Most times static energy will work on screws and joints until they loosen up and separate, respectively. Not this time; not these boats. Here’s how they do it.

Tyler Cesar told me their hulls are laid up pretty much along with industry standards. Gelcoat is covered



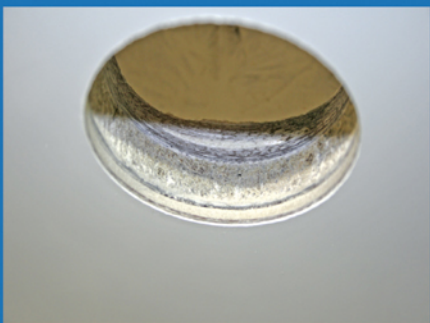
**31 footer.**



**Fitting the deck.**



**Rolling chop and resin.**



**Layers of hull sides 31 footer.**



**Rolling layers on the 31.**



**Stringers.**



**Working on the transom 31 footer.**



**Stringers with closed cell foam infused.**

with a skin coat made up of polyester resin and four ounce fiberglass chop. These layers are rolled by hand and each layer is allowed to cure so that heat may escape and prevent imperfections in the hull. Excessive heat also has the capacity to damage the mold so Cape Horn keeps their hulls on the line for nine days. Layers of woven cloth, 24-ounce, are followed by 1/2 inch divinycell and more laminate. The bottom is finished with chop strand matt. On the sides and topside a barrier coat called spray core is added to the process. Polyester based, this layer amounts to twice the thickness of fiberglass at four times the strength and protects against print through.

While the process itself may be industry standard, the finished product is not. Cesar explained that Cape Horn uses more laminate than anyone else and proves it when it comes time for hookups. Technicians have to get through three solid inches before they can install a transducer in the keel. Hull thickness is just the tip of the iceberg. From here on out Cape Horn just does things differently.

Cesar mentioned to me that he could see the rigging shop from his desk. On that day there were two 31's, a 24' and a 21' all on the same line. Now I don't know if our Carolina builders are smarter because they keep one line for each hull for efficiency or if those Florida boys are smarter because they can put 'em all on the same line and still tell 'em apart. Just some boat builder humor, but Cape Horn apparently gets it done with a mixed line. At the same time all small parts are laid up one at a time by hand as needed. Cape Horn feels that the one at a time process allows for more control over their finished product.

The technicians at Cape Horn have never heard of "adhesive." All parts are glassed into place including 1 1/2 inch high density "coosa" board that is fiberglassed into each hull in order to reinforce the transom. Stringer systems are built one at a time as well out of 1 1/2 inch light density foam board. Each stringer system is fiberglassed into the hull and essentially laminated throughout with the addition of the closed cell foam.

Now we have come back around to that foam again. Here's where it gets groovy. Cesar explained to me that rolled fiberglass has a binder in it or catalyst, if you will, which I knew. What I didn't know that he went on to explain is this binder is a magnet for moisture. It acts like a wick and there is only one thing that can come from polyester and moisture—blisters.

The moisture issue is what led Cape Horn to the closed cell foam. It is the same reason the Dare County Building Inspector, Fred Featherstone, allowed me to spray foam three feet below my base flood garage. No matter what happens, my walls won't absorb water and neither will a Cape Horn boat although my garage is not "unsinkable."

The foam is sprayed into the hull throughout the stringer system and essentially glues the stringers in place. Cape Horn calls the process "injecting" which makes me think of the turkey fryer, but in doing so I am not far off. The foam is two-part, is sprayed from a gun and begins to expand the moment it hits the air. Cape Horn allows 24 hours for the foam to cure. At that point, technicians drill small holes throughout the stringer cavity and inject more foam into those holes; any air pocket can run, but it can't

hide and the whole hull is infused before the deck is set in place. The deck is glassed, screwed and laminated into place.

In the end you have an unsinkable hull that cannot absorb water. Joints and screws cannot work loose because every air void is filled with "glue." Any shock to the hull is absorbed by closed cell foam and its energy is controlled until it is expelled. On top of all that, the 36 footer has a fish box that will hold 700 pounds of tuna and it is completely surrounded by the same insulation that keeps me and mine chillin' in August. Wow!

Now I may have been blown away by all this closed cell foam business if I hadn't spent my own money on it several years ago. What interested me most about Cape Horn was the production regulations imposed by the State of Florida. Cesar told me, which I knew, styrene is what makes the polyester resin smell like money. (I love the smell of polyester and fresh cut juniper.) And styrene is essentially bad for the environment. The State of Florida regulates how much styrene a company can put into the air in one year. Hence, Cape Horn can only build so many boats in a year. In years past, the company made more small boats (17, 19, 21, and 24 footers) and put out upwards of 600 boats before they approached their styrene limit. Today, Cape Horn clients are demanding bigger boats (27, 31 and 36 footers) which mean more styrene and fewer finished hulls. 2011 has been a success for Cape Horn Boats with 80 boats completed. I'd say there will be some builders who may be jealous of that.

Air permits, I wonder what Pogie would think of that. 