

Saving Old Glory: Coating A 1930s Yacht-Turned-Guesthouse With Polyurea Is No Day At The Beach

By Michele Ostrove

As her wooden hull sat rotting in a ship yard in the fishing village of Ilwaco, on Washington state's Long Beach Peninsula, the Old Glory bore little resemblance to her former glorious self. Built in the 1930s, Old Glory was a 70-foot luxury yacht crafted from such fine wood as iron wood, teak, and mahogany, with a large main cabin lounge, galley, and staterooms, spacious crew quarters, wheel house, and shaded sun deck.



Jim Starr, owner of ColPac Northwest, Ltd., a coatings company in Long Beach, regularly drove by the shipyard on his way to the bank. He had noticed the yacht sitting there for over a year before he got the call asking him to be part of Old Glory's rescue mission.

The call was from Chuck Neaman, a local master carpenter who works for the man who bought the boat — a wealthy Utah executive who had invented a well-known first-aid product. The boat's new owner had unusual plans for the rotting structure, which had seemed destined for salvages. Old Glory would be restored to her former splendor, but would never again be an ocean-going vessel. Instead, the owner planned to bury keel waterline-deep in the sand dune on his 100-acre ocean-front property in nearby Leadbetter Point, and transform her into a guesthouse.

Old Glory would share the estate with a whimsical menagerie, the main feature of which is a three-story, stone house Starr describes as "a cross between a huge barn and a medieval castle." Topped by a handcrafted Viking ship weathervane, the castle commands an expansive view of the Long Beach peninsula and the breaking wave of the Pacific. Its manicured lawns feature 50-foot totem poles and 30-foot forest creatures reminiscent of the "tree people" in "The Lord of the Rings," according to Starr. An adjacent, trout-stocked, manmade lake is inhabited by a 40-foot sea serpent sculpture. Anchored to the lake's 150-foot pier are a 35-foot sailboat and a 35-foot Dutch ketch, which serve as floating guest cabins. A 20-foot-high, three-bedroom tree house provides additional sleeping space for overflow company.

Clearly, when it came to restoring Old Glory, money was no object.

Wood Work

Neaman had Old Glory hauled to its new home and built a three-story, 90-foot long by 40-foot high, sheltered work space over the vessel and a concrete apron around it. With the boat protected from the elements, he began the several-months process of restoration. "On the upper hull, he replaced about 20 percent of the rotted planking with Douglas fir or Sitka spruce," says Starr. Neaman trimmed the main cabin, pilot house, and decks with gleaming brass and virgin mahogany. All of the wood arrived as logs, which the master carpenter milled himself on-site. He pulled out the twin diesel engines and installed a complete marble-floored bathroom in the old engine room.

"Under shelter, her hull had been stripped to bare wood, and then dried over a period of about six months," says Starr, a former electrical and aeronautical engineer. "Then it was thoroughly sanded, recaulked, and completely covered with a coat of fiberglass resin. All this was done before we became involved."

Then Starr arrived on the scene to coat Old Glory's hull above the waterline and deck with polyurea, supplied by Specialty Products, Inc. (SPI) of Lakewood, Washington. It would prove to be the greatest challenge he'd face since he started his coatings business.

"One of the problems we encountered was when we learned that the heat applied for the fiberglass coat was from propane heaters," Starr says. "The resin coat had been applied over an average moisture content of about 15 to 16 percent. Consequently, even with the resin coat, spots with high moisture were sealed in."

"We had to remove a lot of the fiberglass and you could see there was moisture behind it," he continues. "They had done some surface prep, but we had to come in behind them and do our own."

Starr and his four-man crew had to grind three-quarters of Old Glory's hull by hand, using DeWalt four-inch grinders with seven-inch pads (#16, #50, #120 grit), and a Sears Craftsman dual-action orbital sander with six-inch, 220 grit abrasive disks. "We had to be very careful not to break through the fiberglass and gouge the wood," Starr notes. "We didn't want to destroy the plank lines, and wanted to maintain the aesthetic quality of the wood."

Will This Wood Ever Dry?

Because of the yacht's proximity to the ocean and the nearly constant rain in the Pacific Northwest, ambient moisture levels remained alarmingly high, even though the Old Glory was completely enclosed. "It got so that the Weather Channel became everyone's favorite until the hull was finally coated," Starr says. "The hull's moisture content had to be regularly monitored using an Omega HHMM690 moisture meter, so that damp spots could be located before an application."



Starr's crew learned that when the sun's heat hit the yacht's hull, it created steam in the pockets of moisture trapped underneath. The entire vessel would have to be completely dried, section by section, before they could successfully apply the polyurea.

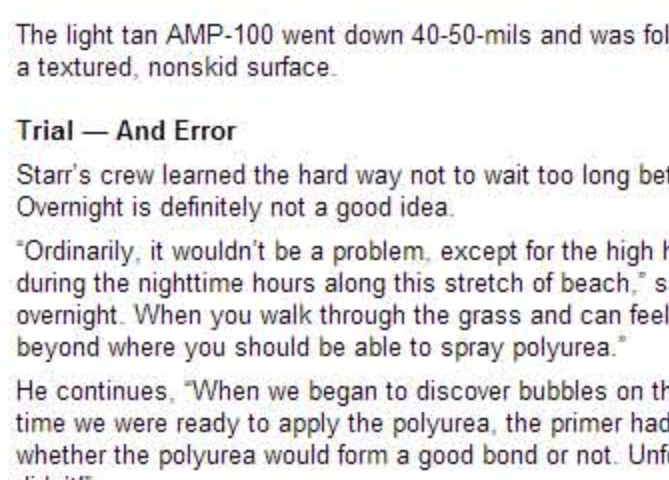
"We decided to go with black visquine, which absorbs heat," says Starr. "We taped rolls and rolls of visquine together and built a big tent around the boat. We also used the visquine to mask-off sections we didn't want coated."

Soon the applicators realized that the heat of the sun wouldn't be sufficient to dry the boat. They tried to artificially dry the wood using a kerosene system, and discovered that kerosene-based heat contains moisture, so they switched to diesel. Time was a critical factor. Once the heated air blown in underneath

the visquine tent dried off a single section, the crew donned respirator gear, gave the area an acetone bath, and began spraying primer — before moisture set in again.

Ready To Spray

Wearing Allegro or Survivair supplied-air full-face masks, the crew applied a coat of SPI's Polyprime-100 primer, using a Gusmer FF 18-18 proportioning unit with 150-feet of heated hose. The unit was powered by an Ingersoll-Rand 7.5 HP, 80-gallon air compressor and equipped with a Gusmer D-7 gun with a #55 valving rod and chamber, and Gusmer IPM transfer pumps. To prevent the offshore breeze from carrying overspray to the neighboring house, vehicles, lake, ocean, and other workers in the area, the crew kept the visquine tent tightly secured around the area being sprayed.



The primer coat on the hull was followed by a 40-50-mil layer of Polyshield SS-100 in glossy black. The SS-100 is SPI's "workhorse polyurea," McCabe says. "The SS-100 is consistent and is very tight when you spray it," he says. "It has the lowest perm rate of our products." On the deck, they used SPI's AMP-100 aliphatic-modified polyurea, a blend of aliphatic and aromatic polymer chemistry that provides UV stability.

The light tan AMP-100 went down 40-50-mils and was followed by an eight to 10 mil spatter coat to give the deck a textured, nonskid surface.

Trial — And Error

Starr's crew learned the hard way not to wait too long between the primer coat and the first coat of polyurea. Overnight is definitely not a good idea.

"Ordinarily, it wouldn't be a problem, except for the high humidity that reared its ugly head after the sun set and during the nighttime hours along this stretch of beach," says Starr. "Even on the warmest days, dew still forms overnight. When you walk through the grass and can feel moisture on your toes, you know that you're well beyond where you should be able to spray polyurea."

He continues, "When we began to discover bubbles on the upper half of the hull, we realized too late that, by the time we were ready to apply the polyurea, the primer had begun to dry to a point where it became questionable whether the polyurea would form a good bond or not. Unfortunately, under the conditions we were working in, it didn't!"

Consequently, they needed to remove an entire section of blistered polyurea from just above the waterline to the four-inch-wide "bumper strip" that had once protected the hull from bumping against the dock. After ensuring the stripped area was dry enough to coat, they applied a layer of SPI's Tie Cote intercoat adhesion enhancer, to bind the new coat of polyurea to the previously coated sections that had not blistered.

Lesson learned: "Graft a moisture meter to the end of the arm you spray with," jokes Starr. "Let it become part of your body."

From that point on, the crew only primed what they could handle, making sure to spray the polyurea just as soon as the set-up time allowed them, which was about four hours, then shooting on the sun's heat. "What couldn't be covered during the first shoot was swabbed with acetone and then shot, allowing that side to be completed," says Starr. "The natural order was to shoot the lower quarter, then the upper quarter of the starboard side, then repeat the same procedure on the port side, or vice versa."

The entire coating job took over three weeks, counting the redo and frequent weather-related interruptions.

Old Glory is now settled in her final resting place, her new polyurea coat gleaming in the occasional sunshine that graces Long Beach peninsula. Though her guests won't experience the former grace with which her hull sleekly glided through the waves, thanks to Chuck Neaman and the crew from ColPac Northwest, landlocked Old Glory will remain as magnificent as ever.

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