Building the mighty Kraken

Creating a centerpiece sculpture with steel and fiberglass-reinforced concrete

By Dan Sawatzky

The legend of the much-feared Kraken is indeed true—at least at Scallywag Bay Adventure Park in Trinidad. But it isn't quite like everyone has heard. The long-tentacled sea monster is actually a mechanical beast, and was more than a match for the wooden sailing ships of the pirate's day. This creature was invented by our illustrious Gruffles, the pirates who populate this place.

Our delightful task was to build two of these awesome crafts, one life-size (about 35-ft. long) and a much smaller version on a sign. They will be the icons for the bumper boat attraction, acting as both signs and photo opportunities.

The massive beast also needed to break down to fit into a shipping container for transport. We started, as usual, with a heavy, welded steel structural frame. Around this a lighter pencil-rod framework was built, which would support the sculpted fiberglass-reinforced concrete shell. Then came the laborious task of hand-tying the expanded galvanized metal lath. When we were done, the concrete was sculpted to resemble a combination of heavy, riveted copper plates and wooden panels.

The real magic happened with the paint. We hand-brushed and blended multiple coats of a premium grade of Sherwin-Williams acrylic house paint onto the sub and then a series of custom mixed glazes to age them perfectly. Lastly we painted on a flag, the Gruffle insignia and lettering, and aged them. As a comical touch we also painted a number of ships, a rowboat and small tropical island silhouettes representing its mighty conquests. We named the vessel O'Ryan in honor of a former team member, Ryan McCracken.

The top four tentacles were built separately, then hung on temporary transport stands for delivery. We welded up steel pallets, which were just a teeny bit smaller than the bottom of the shipping container so there would be no movement of the pieces during transport. All of the pieces were carefully designed to slip into a 40-ft. shipping container. This was no small task as the main hull of the submarine weighed in at a hefty 8,000 lbs.

Once the container was loaded we called in a massive crane to load the container onto the truck. It was driven about 60 miles to port and then loaded onto a container ship, which

The eager crew tests the heavy, welded steel frame for the Kraken. Each piece was built on removable wheels so we could move the pieces around the shop and yard. Lift points were also designed from the start.

The more complex the shape, the more difficult it is to shape and tie on the galvanized mesh. While that may be true, it's also true that the more complex the shape, the more interesting the final result will be. Once the wire is all secure it is time to begin sculpting the final shape.

It takes a lot of teamwork to sculpt a project like this. The piece is both large and detailed. One person mixes the fiberglass-reinforced mesh, another delivers and four to six team members trowel it on. When it begins to set, the whole crew joins in to sculpt it in a couple of hours.

A minimum of three base coats of color were brushed on and then two coats of glaze was brushed on and toweled off to age things to perfection. Then some faux corrosion was simulated, using some green patinas.

Like the sculpting process, the paint and glazing involved the entire crew working shoulder to shoulder at times. When we paint we need to work quickly so there are no dry edges as we blend and glaze.

Phillip John came to our shop from Australia to attend a workshop. Since he was in town for a few extra days we put his talents to work on the painting of the names and symbols on the submarine.

traveled down the west coast, through the Panama Canal and on to Trinidad—a journey of over 6,000 miles. The trip took six weeks from our yard to the worksite in Trinidad.

The second Kraken was much smaller and would form the dimensional icon for the sign. The lifesaver ring with the raised lettering was routed on our MultiCam CNC router from 30-lb. Precision Board HDU, as was the rough dimensional shape of the Kraken.

A welded steel frame was laminated into the layered ring, and legs protruded out of the back for mounting. We then hand-sculpted the detail on the submarine and arms using Abracadabra Sculpting epoxy. A steel rod was inserted into the middle of each arm for strength. We painted and glazed the smaller version to match the big one. The sign was then welded to the steel frame of the support structure. This was sculpted using fiberglass-reinforced concrete to look like a ship's mast, complete with furled sail. It was fabricated in two pieces which will slip together quickly onsite. Ropes and a custom pirate flag will complete the piece.

As soon as the worksite is ready I will travel to Trinidad to supervise the removal of the pieces from the container and the final assembly. Using the primary onsite contractor's equipment, these two pieces should be easily installed in less than half a day. Here's hoping it all goes as planned!

In the next article in this series we'll get into some very fun signs with a whole lot of character(s)—Gruffles, that is. Stay tuned… SC

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The final paint job was a pleasing combination of warm and cool colors. Once painted, it was pushed out of the shop to make room for many more pieces yet to be done. It will be placed on a concrete footing on site and then the deck will be poured around it, burying the remnants of the shipping frame.

The sign for the bumper boat attraction featured a smaller version of the full-size Kraken. The life preserver ring was routed on our MultiCam CNC router from 30–lb. Precision Board. It is comprised of three layers with a steel armature laminated into the center. Steel arms protrude out of the back to fasten to the ship's mast which will hold it up. The Kraken was sculpted using Abracadabra Sculpting epoxy.