

BOATWORKS BLOG

By Reuben Smith, Boatbuilder at Hall's

1928 22' CHRIS CRAFT CADET - "MOONSHINE"

Number 1 in a Series

Over the next months, we'll tell the story of Hall's restoration of this cadet. This boat has always lived on Lake George, and at 80 years old, she's in the shop for a structural rebuild and restoration. The boat needs a complete new bottom, with repairs to the stem and gripe, and new bilge stringers, keel, and chines, and all the framing and planking. The original engine is long gone, and the boat will have a restored engine installed when we're finished. Above the waterline, we'll do various repairs to planking, deck, and covering boards, and do a complete strip and refinishing.

In this series, we'll talk about the thought process that goes into restoring a boat like this.



Removing the hardware and documenting the boat

Over the past winter, most of the hardware had been removed and stored, and the engine had been pulled. All the bits of hardware need to be stored carefully away, and anything that's broken or in need of attention should be tended to early. It's a good idea to send out any work that needs to be subcontracted early in the process, because the best shops are often working with a backlog. Also, the search for any hard-to-find materials and pieces should begin at the start of the project, too.

The boat should be photodocumented before restoration. Ideally, the hardware is still on the boat during this, but either way we go through the boat, taking a picture of everything, from every angle, before pulling it apart. I like to have a ruler in the shot, for scale, as well. I don't think any part of the boat is too mundane for a picture. When putting the boat back together, I may be desperate for a detail I didn't expect to need, so I try to be systematic and get everything from a few angles. The pictures are pretty uninteresting, generally, but they may be critically important later on.



Restoring the shape

The first step in any restoration is to get the shape of the hull correct, and then brace the hull so that as structural parts are removed and replaced that shape is maintained. This part of the project requires a lot of focussed thinking, as we sleuth around the boat trying to figure out what are the best reference points on the hull. At Hall's we work on lots of different types of boats, and these reference points tend to vary.

Having a lines plan helps a lot. Unfortunately, the Mariners' Museum, which houses the archives



for Chris-Craft, was moving their collection as this project began (which is going to be terrific for protecting that collection; it was just our hard luck that was going on at our moment of need), and no one we knew seemed to have a lines plan. It's possible, too, that there is no lines plan for the underwater form of a Cadet. But there are Cadets around here with good bottoms, and there is also a generally recognizable shape to a Chris Craft bottom from that era.

We decided to level the boat according to the waterline. Using the waterline as a reference can be risky, because on an 80 year old boat it's been sanded over, rescribed, planks have been replaced, and it's not always been scribed into the wood with the sort of care we'd like. Looking closely at this line, we felt we could see the original scribed line. We shot a laser level from one place on the floor toward 5 different points on the hull: the stem, two points opposite each other about even with the forward seats, and the quarters, just forward of the transom, at the first frame. We had set the boat on jackstands at those points, so it was a simple job of levelling the hull by screwing the stands up or down.



An advantage of this system of restoring the shape is we can use the weight of the hull to let it regain its shape gently, without lots of force at any one point. The downside is that the

boat is only held up at certain points, and the boat can sag out of shape, especially while structural timbers go in and out of the boat. It's important to keep checking the shape of the hull, especially in areas not directly supported by the stands. We found, for instance, that the bow was creeping upward. That was explained by a sagging in between the pairs of jackstands, fore and aft, and we added some more support under the hull to counter that sag.

Some of the problem-solving for Moonshine

Any restoration project has unique issues. And restoring the shape is one of those steps that requires a lot of problem-solving and trying to conceptualize the dynamics of the particular hull you're working on. Restoring the shape may also not mean correcting a twist or asymmetry that was built into the boat originally; you can't just torque the boat into the 'correct' shape and expect it to live there. I once restored a sailing auxiliary that was built with floor timbers that weren't at all symmetrical, and bulkheads installed that were inches too wide at the rail. Other one-off boats I've worked on have different shapes than shown in the plans, and probably the design was altered on the loft floor, or in the making the molds. An element to think about when restoring shape is the quality of the builder, and awareness of their methods.

At Hall's our philosophy is to use the boat's own weight to settle into shape, and then as new structure gets added to the boat through the work of the restoration, it will help hold the boat in the right shape. The key to doing this work is to be aware of any signals you're getting from the boat. If something's not right, dig down and try to understand why it's not right, because understanding the problem will lead to a solution—and that solution might simply be living with an awareness of the problem. What follows here are some of the problems we encountered in working on this particular boat.

Back aft, we found that the lower plank of the transom had been replaced, and the second plank above the chine on the starboard quarter had been replaced. The waterline there appeared to have been scribed about a half inch higher than the port side, and the transom lower frame was not quite the original shape, either. Perhaps the earlier repairer was trying to counter the tendency of this boat to ride with her bow high, by putting a little reverse shape in the bottom of the boat at the chines. The aft foot or so of the chines had been replaced, as well, and hooked downward. We decided to use a point on the bottom planking there, directly under the first main frame (which was original and appeared to be in good shape) instead of the waterline, and then measure back across to the same point on the portside to level the boat. This allowed us to ignore any changes to the shape of the transom made in that earlier repair, for now. This also solved a problem we had earlier, when it seemed that the starboard forward stand wasn't holding as much weight as it should, and that the boat had a twist. Once we had the starboard quarter at its proper height, that took care of that perceived twist. It takes a second to say this; in practice recognizing this and figuring out how to address the problem took, um, a little longer.

THAT'S ALL FOR THIS WEEK.

CHECK BACK SOON FOR MORE UPDATES ON "MOONSHINE"