

THE REFIT OF ASTRAEA

The Refit of a Classic Cheoy Lee 41

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Refit and Restoration Phase IB: \$26,182

Svendsens Boat Works, Alameda, CA

Bottom Restoration - The men in the space suits do wonders!

New Prop, Shaft and Cutlass Bearing

New Transom Job - Awesome!

Re-Fit of Astraea

Here is a documentation of the work done by Svendsen's Boat Works in Alameda from November 2005 to the present. Click on each phase to see details of the work.

[Phase I: November 2005 through March 2006. Mast rebuild, new rigging, recoring the foredeck, new lifelines and lifeline stanchion bases.](#)

[Phase IB: The work of Phase I continues. From April 2006 through June 2006. New bottom, new shaft, new prop, new cutlass bearing, and a new transom paint job.](#)

[Phase IB Cont. July 2006. The work continues. New B&G instruments, new bilge](#)

During our third day of lessons with our instructor we were just leaving Sausalito when the engine overheated and steam poured out of the cabin. We shut down the engine immediately, and I determined that we had burst a small connector hose on the fresh water side of the engine. It was totally ruptured but, through the use of the modern miracle of Super Duct Tape, I was able to wrap the hose and get us through the day. However as the ruptured hose appeared to be original equipment from 1983, and after inspecting the rest of the cooling water hoses, I decided it was time to call our diesel mechanic, Marty Chin, and totally overhaul the cooling system and replace all of the cooling water hoses.

At about the same time a strange "musty" odor began to come out of the owner's cabin. A little inspection disclosed that there was a small amount of sewage water in the space under our bed (yuck). Apparently the holding tank had sprung a small leak. Fortunately we treat the holding tank weekly with chemicals, so it was not too bad. Obviously, however, this had to be fixed PRONTO! We pumped out at the pump-out station, and then I got the rest out with a hand bilge pump. I opened the inspection port and through the use of lots of holding tank cleaner, lots of fresh water, and many buckets of hand pumped cleaning water, I was able to get the tank pretty much cleaned out. 🤢 I could see that the tank had corroded internally where the tank lining had failed. So, there was little choice but to take her back to the yards for a new holding tank.

There was also one other issue. Now almost all sailboats are ungainly and nearly uncontrollable when backing. Astraea could back straight, and to starboard, but she would NOT back to port. we had determined that Astraea would NOT back to port. Also, I could not get the full RPM's out of the engine. Therefore I decided that we needed to inspect the rudder and the prop to make sure everything was OK. Of course this would entail pulling her out. So, after a quick phone call to Svendsen's Boatyards we had arranged for her to return and be pulled, a full underwater

[pump system, huge new holding tank system, and repair of previous grounding damage from the Caribbean.](#)

[Phase II: Electrical System Update, New Force 10 Stove, Bottom Rework Part Deux](#)

[Phase III: Repowering with a new Westerbeke 44; Cleaning and repainting of bilge; Installation of new Furuno NavNet2 radar, GPS, and other electronics; refinishing of cabin sole; installation of a new Monitor windvane.](#)

[Click here to see the extensive refurbishment of her brightwork.](#)

engineering inspection would be made, and the holding tank replaced. My work schedule did not allow time to take her over, so we had them tow her from her berth to the boatyard.

While we were at it, I decided that we should paint the bottom. However once she was "on the hard" the boatyard people pointed out that there were so many layers of bottom paint that the paint was cracking. It was time to strip her bottom down to the bare fiberglass and start over with a fresh layer of bottom paint. So, phase 1B began.

Astraea is ready for her bottom work. Don't you hate this "Rustoleum" red primer look?



The yard workers in their space suits are applying gallons of stripper and scraping off many, many layers of bottom paint.



As more paint came off it became obvious just how much the waterline had been raised. Also, they had painted over her blue waterline stripe. My immediate reaction was to ask the boatyard to restore the waterline to the original level and repaint the blue stripe at the waterline. However the estimate was an extra \$5,000 to do this. Ouch! The bill for this little visit was already climbing rapidly, so this was not really an option. Oh, well, since this is purely cosmetic it can wait a while. We decided to just go with a bright blue bottom paint to make her look better.

New prop, shaft, cutlass bearing

Well, the prop is gone. A new one is being made. The new one will hopefully make a difference in performance. While we are at it the yard is also replacing the prop shaft and cutlass bearings. The stuffing tube will be

rebuilt. Interestingly, the boatyard suggested against the new "dripless seals" that I wanted to use and recommended that I stay with the tried and true technology of the original stuffing tube. However they will totally rebuilt the original stuffing tube to make it "like new".

The boatyard removed the old cutlass bearing and will install a new one. As usual, I am pleasantly surprised by the strong construction techniques of Cheoy Lee. This stern tube is really sturdy and well installed. It could definitely take a lot of stress.



The bottom is almost ready to prime. Lots of old coats of paint removed. Impossible to tell exactly how many, but there were lots of them. There were so many coats of paint that there were deep cracks in the paint layers.



Learning more and more about how she is made. We have removed the old speed wheel and transducer in preparation for the new B&G instruments, and were therefore able to measure the hull thickness in the keel. It is 3/4" of solid fiberglass. Glass and resin and labor was definitely cheaper in Hong Kong in 1981 than it is here in the US today! Above the waterline the hull thins to "only" about 5/8" thickness. Amazing.

June 13, 2006: Two coats of primer (Interlux Interprotect 2000E) and a couple of coats of Pettit anti-fouling bottom paint in "blue". Yes, it is definitely, "blue". Fortunately no signs of "blisters", a common ailment with some sailboats. It feels so great to just run my hand across her smooth bottom! Beautiful!



June 18, 2006. Spent a good part of Sunday waxing Astraea in preparation for her going back into the water next week (we hope!). Here is Bob up on the ladder buffing her up after we applied a coat of hard boat wax.



Here she is. Looking good!!!! (At least until I smash her into the dock the next time)



June 26th, the new prop, new shaft, new cutlass bearing, new zincs, all new! Here is a "before" and an "after" picture. Not only does it look good, the new prop should be a correct size and allow us to run the engine at full RPM to maximize engine efficiency.

BEFORE (Note you can even see the cracks in the bottom paint).



AFTER:



New Transom Look

The existing name on the transome dated from her original commissioning and was in pretty bad shape. Here is how her transom looked like when she arrived at the yard:



I spent a weekend day removing the old name, which was painted on. Of course, I made a huge mess out of it. The red paint smeared and soaked into the gelcoat. Oh Oh!

A frantic call to the boatyard on Monday morning. HELP! Once again, the professionals came to the rescue! Svendsen's cleaned up the transom and made it look great. A clean, smooth, fresh palette ready for the transom painter to work on!

READY FOR THE TRANSOM PAINTER



Svendsen's had given me the name of a craftsman named George Kelly, who they recommended as the best boat name painter in the SF Bay.

George Kelly designed a new format for the original name (still *Astraea*, of course, as we like the name and also do NOT want to upset the Gods!).

It is rare that a craftsman exceeds one's highest expectations, but George did in this case! He did a perfect job! Perfect design, color, form, proportion, everything. This guy is a master!

Here is what she looked like after George Kelly did his art! Awesome! If you want to contact George, he is true professional!



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All Content provided by Robert Moon