

„LITTLE TRI“ construction

I have built almost anything that can sail. At the age of 12 my first sail thing, an ice “boat”. I used skates which had to be mounted on shoes as runners. Big fun, very fast, only the lake was too short. Then there were mono hulls of various sizes. Then I started with catamarans. And now a trimaran or better a double outrigger boat. LITTLE TRI is more in line with the outriggers of the Pacific. There were good reasons to build an outrigger. Irrigation tubes are perfect amas. To connect the akas to the hull and amas ropes are used as on Pacific outriggers. This was very wise as I learned later. All is held together with ropes which work like a charm by the way. I designed a hull which is wide enough that a seat can be placed in the cockpit so that my disabled wife can sail with me again. She is the better helms person anyway. The cockpit floor is high enough to be self draining. So I was sitting down to bring the idea on paper respectively computer. I wanted to prove myself that I can still do it, building a 4,7 m boat in four weeks. At the end it took 3 months but only 137 hours to build this little trimaran.



When we reckon with a 35 hours work week then the boat was even faster finished ;-)) It was taking so long because it was very difficult to get some materials. A surprise for me I have to admit. As an example, it took almost three months to get the Aluminum tubes. To buy PVC irrigation tubes in its original length of 4 m was impossible. After a search for two months I found out that they are shortened to 3m here to make them better transportable. The hull is a typical plywood/glass/Epoxy construction.



I started the build on the eight of August 2013. Here the first parts, the bulkheads. After that the keel, fore deck and aft deck where cut and coated with Epoxy. The pieces are assembled and glued with Epoxy glue. First the two keel parts where glued. I used butt straps. The quickest way.

To build the hull I use my own technique. The base, precise cut parts. Also the bulkheads, the transom the keel and the side panels. Instead of using wires to pre mount the hull I use small screws. You can just see them on the photo. I started by mounting the transom to the keel. Then The side planking to the transom and keel and the next bulkhead. I pre drilled with a 2 mm drill and use 3 mm screws to mount the parts. Then on strategical points some pencil marks are made to find the positions back and the assembly is dismantled. Apply Epoxy glue to the gluing areas and assemble again. Sometimes I put plastic tape to the corner areas. After curing the screws can be removed. If the screw heads are filled with epoxy glue heat up the screw bit with a heat gun. The heat will melt the Epoxy and the screw can be removed. A much quicker and more accurate way as using wiring.



Length height about
180mm



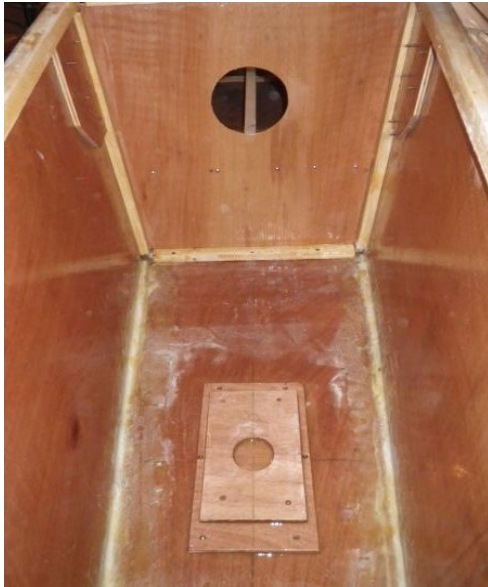
Screws in keel area



Next day the forward part was assembled and glued etc. The hull was emerging. The hull looked like this. Date 08/14.



Next fillets and glass in the keel area applied. The deck stringers were done at the same day. The picture is from 08/16



In the mean time I made the mast step and fore deck. The stringers for the cockpit floor where added and the deck made

This done the deck could be mounted.

The inside got also the final coat of Epoxy. The wood is now good protected with three layers of Epoxy



This is how the hull looked at 08/22. I changed the design a bit and the aka supports where done for nothing. So the new ones will be mounted inside the cockpit just after the fore deck. The room under the cockpit has a volume of 240 liters.

Which makes the boat unsinkable. Without the area in the bow before bulkhead 1.

08/23 Rudder parts made. Easy job. The main spar covered with UD carbon fiber. Was working wet in wet. This was a fast and dirty job but done in one day.



Besides other jobs like covering the hulls with glass fiber cloth I started the rudder housing.



After curing the outside fairing which is more for the strength of the housing are made.

Next I finished the hull so far that he could see the daylight. The hull is ready to be painted. I will not do this inside because of the smell. And here is the hull after one month and one day and 88,5 hours.



I have to bring out the boat to mount the dagger board case. Because the window is just wide enough to let the hull pass.

The dagger board is placed in an outside dagger case. I have also made the gudgeon from glass fiber to mount the rudder housing. Because it is here very difficult to get the necessary stainless steel.

It was taking three months to get the Aluminum tubes which I would like to use as akas. As I could collect them they had the wrong wall thickness, 5 mm instead of 2 mm. I will use them anyway.



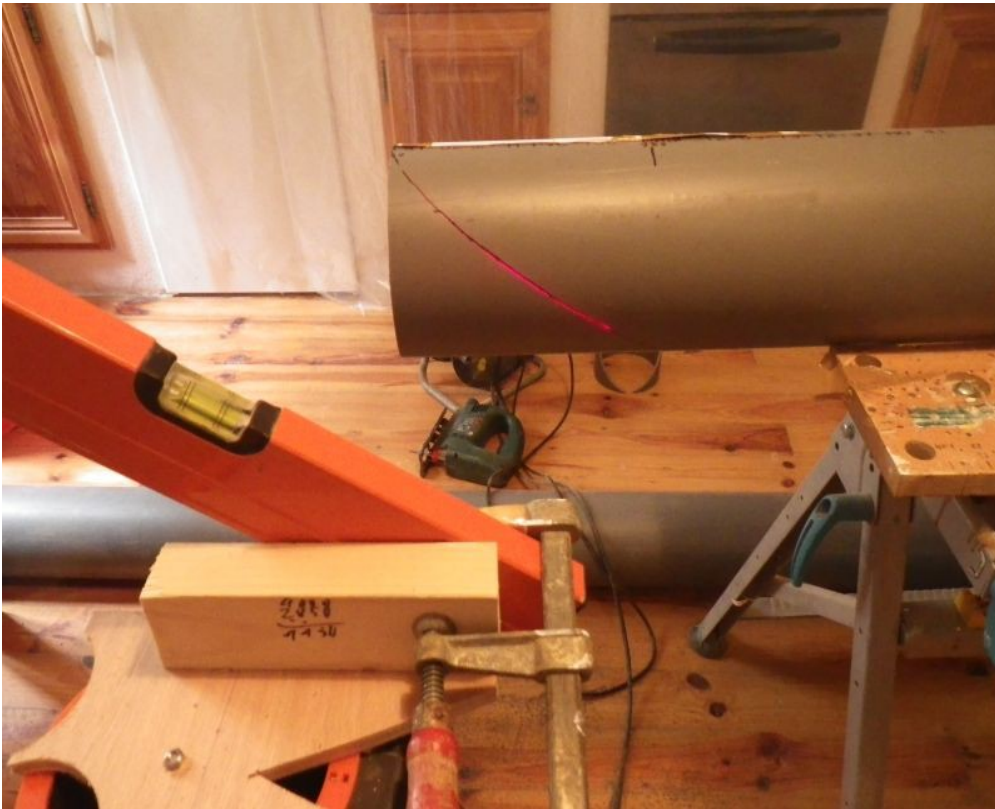
This is the hull painted after 102 hours. As mast I use a windsurf mast. The sail is, as you can see, a Sunfish sail.

I have spent another 35 hours to finish, make the amas the dagger board and make the aka connectors. Prepare the yard and boom made from Aluminum tubes to. Make the soft seats and seat holders. By the way I used another windsurf mast to made these.

The boat was ready to sail at last, but this was at the beginning of October and I am a typical warm weather sailor ;-))

The amas made from 180 mm PVC tubes are easy to do. Here only some photos from the built

Laser set up to find the angle of the bow and transom . Mark with a pencil and cut out



The result. The bow.



Make the aka connectors from 8 mm plywood.

Now it is time to apply glass cloth at the areas where the aka holders will be glued the tubes. Sand the area with 120 grit sand paper. Clean the area with Acetone, or better when you can get it with MEK (menthyl ethyl keton). Then apply the glass cloth (120 gr/m²) with Epoxy. Applying the glass cloth as described for best result when mounting the aka holders is very important. PVC is difficult to work with when you want to glue an other material to it, besides with Cyanoacrylt. Difficult to get in necessary quantity and will not work well with wood.

If you want to paint the tubes same preparation procedure. As paint use a good latex based paint.

Prepare the end caps. Using the shape of the ends scribe of the shape on an 8 mm plywood piece.

Make an inner and an outer piece. Glue them together.

Use above procedure on the inside of the gluing area before you glue the end caps to the amas.

Use lots of Epoxy glue to mount the end caps. Fix with wood screws. These are removed after curing.

Mount the aka holders to the amas. Make big fillets at the aka to ama connection.



Cutting the Aluminum beams and mounting all hardware finished the building process.

Here a picture how the boat looks now with painted amas. Ready for next sail.



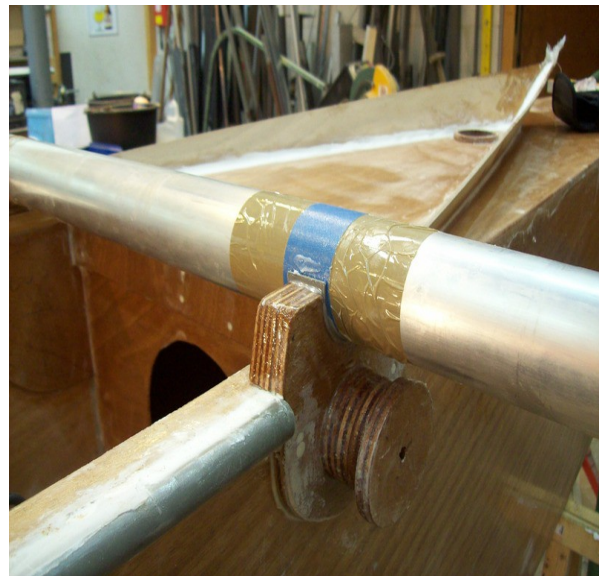
I have sailed the boat a bit this year, time permits which was not much. She is an easy mover. Already with almost no wind the boat has a good turn of speed. Handling is a doddle. The best sail I had with the boat in a force 4 to 5. The wind was coming from the land, so the sea was flat. The boat was very fast. A power boat which was sailing alongside us was telling me the boat maximum speed was 13 knots. I have to test this my self in the future. For my feeling it was fast, feeld like flying.

I got, to my surprise, many inquiries for a plan. So here he is. The construction manual has 22 pages and contains also 23 photos, so that also a first time boat builder will understand what has to be done to build the boat. The drawing set is delivered also as PDF file. So no extra programs will be necessary.

The next boats are under construction already one of them in Amsterdam/The Netherlands. Here are some picture of his built



Hull no. 2



Beam connector under construction

Cheers

Bernd