

# Cargo Proa Prototype

## Building Blog



### AUGUST 2020#1

Demoulded the tender bulkhead and glued it together. Looks good, but a lot of work. Laid up the second one. Infused the first tender floor, which went well. Laid up the second tender floor and infused the second bulkhead. Went well so we infused the floor as well. Vacuum was lousy, so we added a second, small pump. Bang, down it went. However, as the infusion progressed, the flow rate slowed alarmingly, including missing an area where there was obviously a leak in the table which probably would have shown up if we had a gauge instead of doing a pull up test. We swapped pumps with the bulkhead, which helped, but not much. At about 6 pm, the flow stopped, presumably because the resin had started to gel in the feed line, so I broke my promise not to fiddle and inserted two more feed tubes. These worked reasonably well, so I plugged in a third, which hardly worked at all. Almost certainly because the fiddling had caused leaks. The resin gelling is caused by the occasionally excessive heating we

expose it to to get it up to the recommended >30C in less than 20C ambient. It would be less hassle, but more money to buy winter hardener. I turned the heaters off and left at 9 pm with about 10% not wet out.

Next day, dry area had halved so I removed the bag, diffusion cloth and peel ply and applied resin with a brush and hot air gun. Wet out 5 layers of 400 gsm and the stripes in the peel ply against the mould became visible. Later in the day, we removed it and there was no visible line so presumably it is OK.



Fitting tender bulkhead



Tender half floors



Gluing tender bulkheads together



## AUGUST 2020#2

Due to circumstances beyond Rob's control there was no work Monday. However yesterday and today was business as usual. I have managed to prepare and infuse the 3rd tender bulkhead. Rob cut me loose and let me do it on my own while he and Roan busied themselves on the deck mold, glass layout and bagging. That will be tomorrow's excitement infusing the first deck half as it's a pretty complicated looking layout. Again the cautious decision was made to only do one half at a time so there'll be a second infusion needed, which will probably be next week. Helping to speed up the cutting and laying out process this week is our brand new electric scissors. I think Rob will find it's some of the best money he has ever spent – they're fantastic!

Robert Rasmussen



Electric scissors



First deck half



Fist deck half infusion. Pictures by R. Rasmussen

### AUGUST 2020 #3

Starting to take shape quickly now. The tender is eight and a half meters long. It is just the boat to go ashore with the ferry itself will be 24 meters long. So we literally have a big job ahead of us.

Robert Rasmussen



### AUGUST 2020#4

Installed the other half of the floor and the innwhales for the deck to glue to. If I had had a bit more confidence in my measuring and infusion abilities, these would have been slots, making adding the deck quicker and lighter. Demoulded the truss diagonals. They look like a winner which is good as I had spent the weekend thinking about truss beams, truss masts, truss wishbone booms and truss hulls. Rob R working on the rudder mould, Roan making tender stringers.

Bow floor and gunwhales are bonded in. Bonded the test truss diagonals to the horizontals. Looks good. A bit fiddly, but not too messy. The floppy flax hull sides are no more. Halving the panel size has made a big difference, bonding on the deck should make it acceptable.

Rob perfecting the rudder mould. Tender deck fitted. I should have made the slot wider, but once the technique is sorted, it goes in pretty easily.

### AUGUST 2020#5

Arrived at the shed before Rob D today and got straight into prepping for the rudder half layup. When Rob arrived we planned the rudder layup process and decided what to do about the tender hatches. The hatches will be left for now, but will go on the inboard hull sides at a later time. It was decided they are not needed till after launching. They won't be water tight just covered as they will be vertical. Hatches on the deck are in the way of the seating and would need to be flush and water tight.

The rudder layup was to be part hand layup and part infusion as Rob was concerned the resin would not get between and under the carbon. In

the end It worked out well despite being an experimental procedure. The bag was fitted to one side of the mould, the carbon and glass under it were hand wet out while the rest was left dry and a dry glass layer placed on top of the carbon. The Bag was then closed, evacuated and the whole layup infused.

It was all hands on deck with Rob wetting out, Roan placing the carbon strips and myself mixing resin and trying to remember to take photos. Previously Rob and Roan had been busy trimming and preparing the tender decks for cross stringers. Unfortunately they could not infuse the stringers as the long awaited resin will not arrive till tomorrow. There was just enough for the rudder infusion.

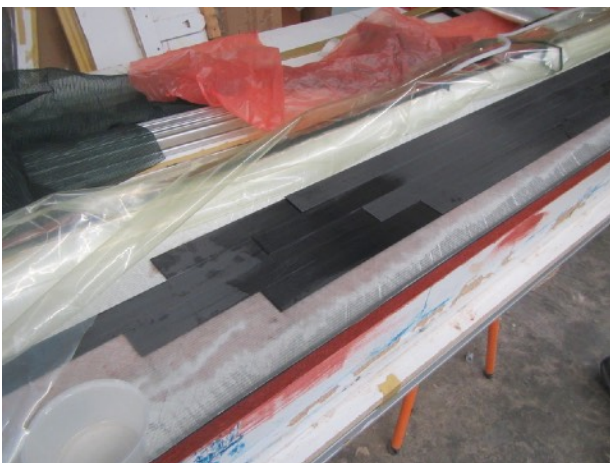
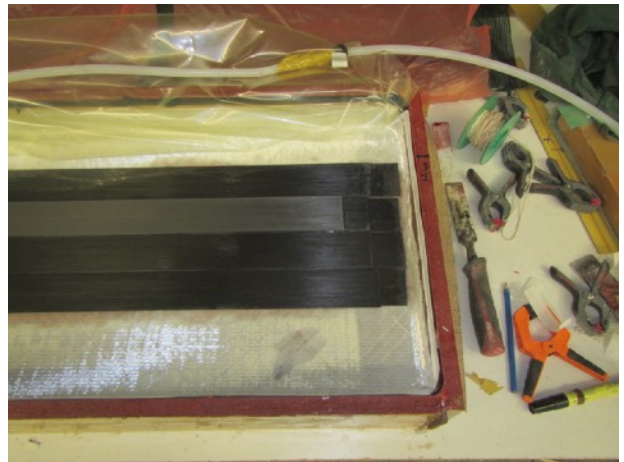
Rob Rassy



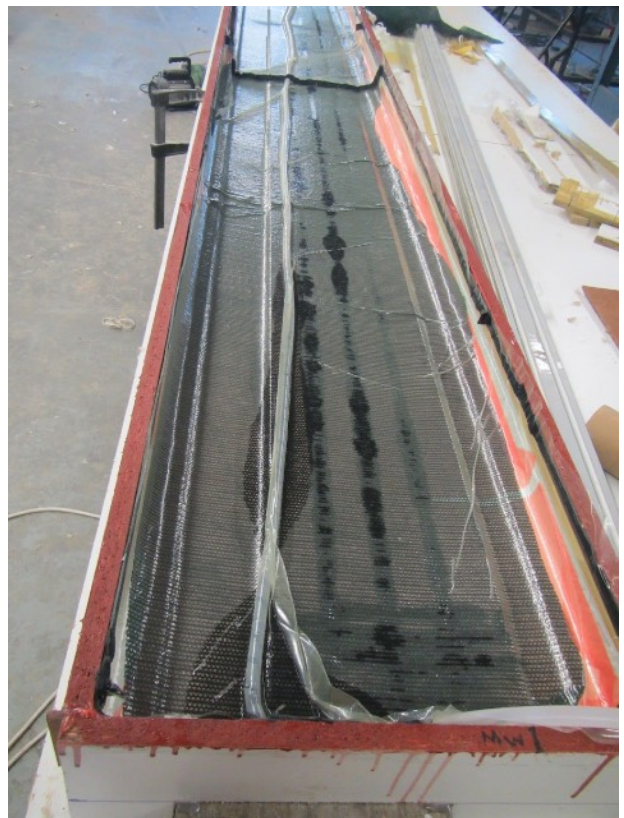
Leak sealing the bag



Carbon stacked and wet out



Glass under carbon hand wet



Start of infusion

Infusion completed



Rudder half infusion

Pictures by Robert Rasmussen