Day Six

Align and Glue Planks

Steps:
- Align boat, check dimensions
- Join planks provisionally
- Pull wires
- Glue the outside planks

Tools and Materials:
- Epoxy putty powder, mixing cups and wooden spatula
- Spatula, painter's tape
- Two sawhorses
- Two battens
- Universal pliers and string cutter

Today, the boat will be inverted and fixed on two sawhorses. Then, the seams are glued in two steps with epoxy. The epoxy has to cure between the two steps. That's a long lunch break.

Control of important dimensions

As long as the boat is still on a flat surface, recheck all important dimensions again. It is so easy to glue together a boat which has moved slightly and is no longer sitting square and true, and then get angry every time you look at it. To prevent this from happening we must recheck:

- Are the bow and stern standing exactly upright?

With a right-angle check whether the bow and stern are exactly upright. The rear looks really good:

Unfortunately, the upper part of the bow is warped slightly to starboard:

If you open the bow top wires and rasp the port side one or two mm finer…

..., then the bow comes out exactly straight!

- *-Are the distances between the moulds on the right and left the same?*

This can be easily checked with a ruler:

- *Are all moulds perpendicular?*

This is controlled with the plumb line - or a big nut on a thread.

Align boat on the sawhorses

The boat is turned over. The frames A and E are clamped on the sawhorses.

- *Now is the last chance to check that the boat is not twisted.*

For this purpose two battens are clamped at the frames in a way that they touch the gunwale, so that they stick out the left and right under the boat.

Peer over the centre of the boat. The two battens must be parallel:

(The picture shows this step at a later date).

*-Are all planks really positioned **exactly edge to edge?** Are the plank seams straight and not wavy?*

If not, maybe tighten a few wires or add a few extra wires.

Hull Seam Glueing – first, we glue the plank seams only between the wires.

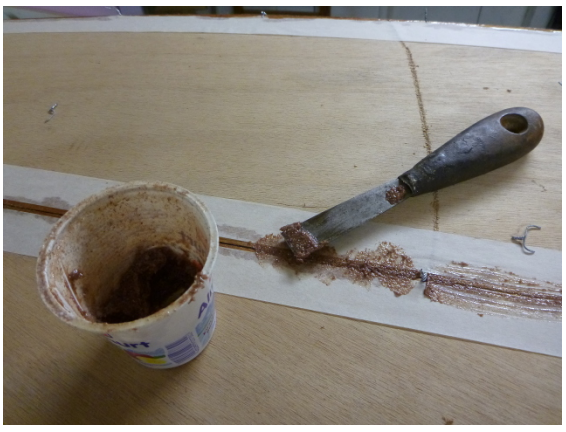
And there you go: Mask the plank seams with painter's tape.

To work as a glue, the epoxy needs to be thickened to a mayonnaise-like consistency. It must be so fluid that one can easily squeeze it in the plank seams.

By cutting a few wires at the bow and stern, you can fill the seam with slightly thickened epoxy placed on the adhesive edge. Then firmly wire back up again.

When assembling with wire again, check whether the bow and skeg still stand straight. To do this, aim with the eye directly along the Bow edge and skeg edge.

Work then the epoxy putty well into the plank seams. The wired sections remain free of epoxy glue at the moment.. A narrow spatula is well suited to this work:



The bonds are to be so durable that the hull does not fly apart during subsequent sanding.

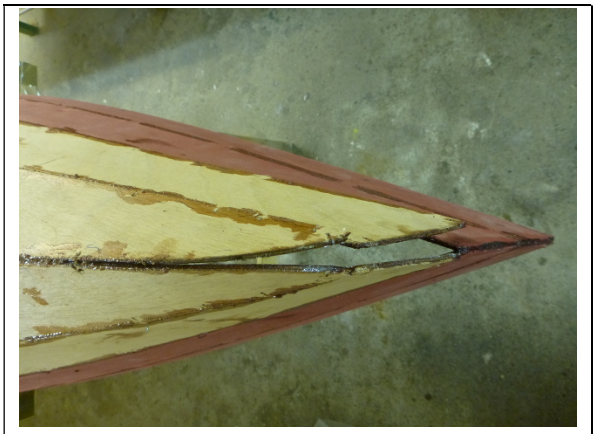
They do not need to be very strong. With this building methodology, the wooden planks provide the form; the strength comes from being coated with fibreglass cloth and epoxy.

The filler is intended to bridge the seams. It is good if you work in the rather thin liquid filler with the spatula into the seam, but the filler must not come out on the inside of the plank.

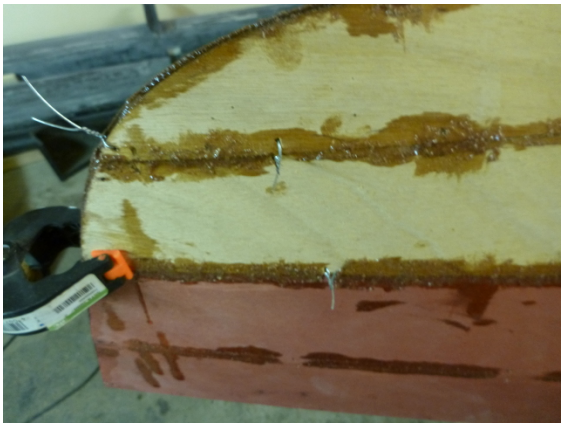
It really pays to carefully remove excess epoxy with a narrow metal spatula. Removal now is much easier than sanding away later!

Pull Wires

When the epoxy putty has hardened, all the wires are removed. To do this, cut them on the inside with the string cutter and then pull them gently with the slip joint pliers from the outside.



Oops! When pulling out the wires, the bonding has separated at the bow!



Nothing serious. I sand the seams again slightly, brush them with epoxy, apply some putty on the edges and put three wires and a spring clamp on.

Glue Planks

When all the wires are pulled, I mix some epoxy with filler and fill the positions under the wires and all wire holes with putty.

Then I pull off the painter's tape. (This must be removed now, before the epoxy putty hardens fully)

The skeg gets a fillet of putty on both sides. For that, the epoxy is mixed a little thicker. Creating the fillet is easiest if a wooden spatula is used.

The excess epoxy putty right and left of the fillet is removed using a small metal spatula.

Finish the bow and stern

The bow now gets added protection from glass fibre cord.

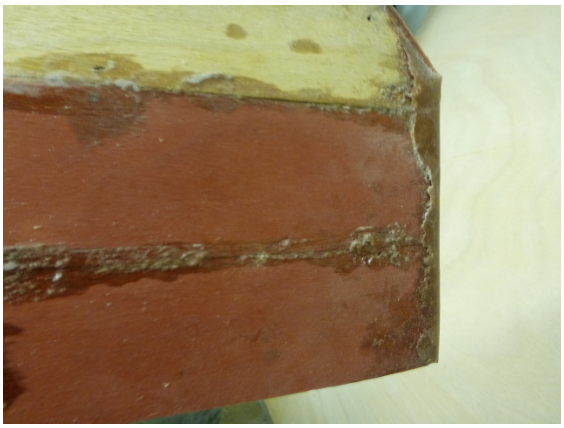
The 3 mm cord is dipped in epoxy, so that it becomes saturated. Then apply epoxy to the front edge and attach the cord with small staple nails until the epoxy has cured.

On the finished boat, it will look like this:

If you do not find this beautiful, you can create an edge with filler instead - like at the stern. Here's how: First, apply thick mixed up epoxy putty…

..., then tape down with construction film.

After drying, a smooth edge has formed that needs little sanding work:



This is what the hull looks like now: Totally uneven seams, and rough edges. Don't worry, all of that will change tomorrow.