

Maud's Mast 1995

How we built a wherry mast, by John Henson

Dave Deacon and I were part way through the year boatbuilding course in 1995 at the International boatbuilding College in Oulton Broad. Terry Upton was the yard foreman and was trained by Brooke Marine – cut him and the lettering 'Brooke Marine' ran through him like the letters in Yarmouth rock. The two of us were duly nominated to butcher the baulk of timber that had arrived at the College.

Vincent and Linda Pargeter were well known for both Vincent's crazy millwright skills and for their mad raising of a sunken wherry and their long term restoration in Tim Whelpton's yard of Maud.

One day a huge baulk of timber – Linda says pitch pine but I was under the impression it was Columbian, turned up on an articulated lorry. It was well over 40 ft long and sided over 14 inches.



Once the baulk had been craned off and put on temporary stocks, all the 'lads' in the College were assembled to move it into its position for working upon. Fifteen or twenty 'lads' and (a couple of lasses) in prime condition were needed to shift the monster to its site in front of the boatshed doors. A public right of way ran alongside so we were watched by a motley collection of Oulton Broad residents and their dogs.

The first thing was to assemble the tools. A long straight edge was the first thing to purloin from somewhere. This was the most valuable piece of kit – even though, on a boat, there are rarely any straight lines. Made from mahogany this was sweated over and tested against other, known straight edges to be sure there was not even a hair's width of a bump anywhere along it. The next was a chalk line – no lasers in those days. I was sent off to the hire shop for what Bernie Press called a 'tar planer' a large green Hitachi electric planer.



Trainees and staff (in white coats) turning baulk

The first job was to get a 'face side' this meant that we needed to get one face of the 46 foot baulk dead flat along its whole length. This needed a straight edge to either pencil or chalk a mark on the high spots. You did this by rubbing chalk along the straight edge, rubbing it on the surface of the baulk and planing off the high spots. This was finished off by hand planing (with a sharp blade) with my Stanley no1 to get the surface dead flat.

The next step as per woodwork lessons at school was to get a 'face edge' at right angles to the 'face side'.

We needed fifteen lads to turn the baulk over and to move it back to its original position. Later, the number of lads needed to turn the baulk reduced but it came as a good excuse to leave their own jobs and get in a sneaky cigarette whilst doing the job.

Now we needed a face edge so a big square was needed. First job with the square is to test it as a fraction of a degree out makes it useless. On a known, straight board you mark the line at right angles to the edge, turn the square over and mark the other. If the lines coincide you have a usable square.



Top being shaped with power planer

So, our job was to make another flat surface, exactly at right angles to the first one. A nasty, fiddly job because you are not only using the planer but need to test the surface with both the straight edge and the square every couple of minutes.

Once flat and square (as they say in the books) the baulk had to be turned again but this time it not only had to be flat and square with the last side, but it also had to be the correct width – the same as the first side. Off we went again, using the straight edge, the square and this time a long metal rule to get the thickness right.

Over again on to the final side – the aim was to get the baulk square along its whole length, flat and straight.

I know from the photos that this was the time we marked out the shape of the mast – square at the weighted end, running into shoulders to the diameter of the bottom of the mast (about 13 inches) then the taper ending around 6 inch diameter until you get to the bulge of the herring hole. This was where Vincent got heavily involved – a taper which ended up with too a fine top would make the mast susceptible to snapping just below the herring hole.

Herring Hole being shaped

One with too little taper would look like a ‘fat ankle’. We were looking for a ‘well turned’ ankle until we got to the main sheave – the herring hole. This was done, as I remember, using snapped chalk lines and curved battens to get the shape at the top of the mast.

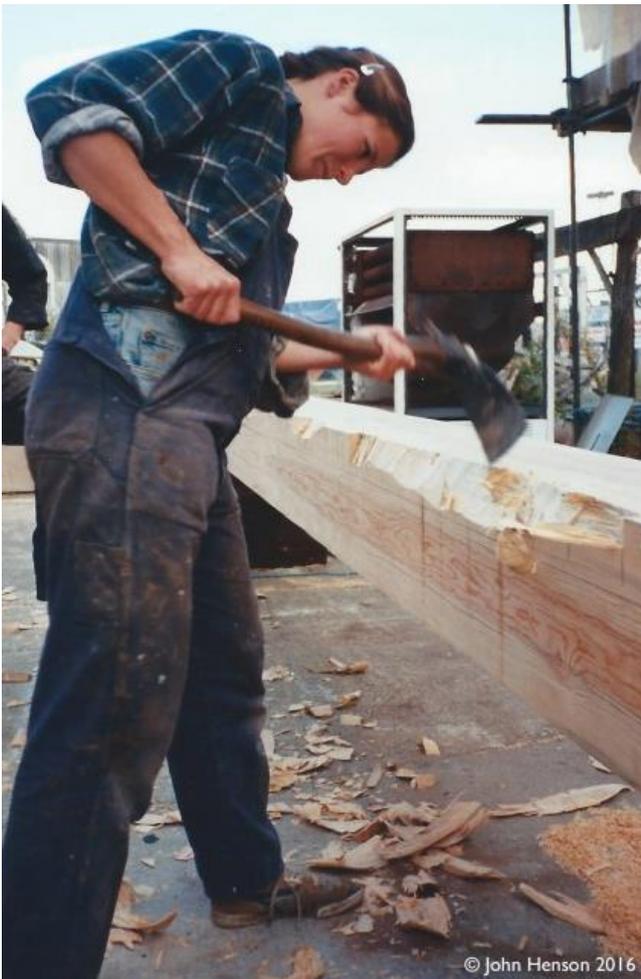


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John Henson Planing Baulk

It was now that we had to start to get the round shape into the baulk. The first stage was to get the cross section from a square to an octagon. This was done by marking the baulk out with a spar gauge that we made up. Then we used a circular saw to cut between the faces of the octagon. We used an adze to cut off the waste.



Top student Anke Ekhard practising her adze technique



*Terry Upton instructing Anke Ekhard in use of adze.
Dave Deacon working in background.*

Once the rough sides had been made it was back to planes and straight edges to get the faces flat and straight. There would be no more square in use for the moment.



John Henson 'tickling' mast with adze

Dave Deacon using adze

The next stage was to turn it into a 16 sided figure – again the corners were cut off and the adze used to chop away the waste. Then to a 32 sided figure, followed by a 64 sided section. By now we were using draw knives to cut off the waste to make the mast very nearly round. Now it got very silly with Terry insisting that we used spoke shaves and sandpaper to get the shapes as close to a round as we possibly could.



Mast approaching final shape and piles of shavings.

Fine Shaping



Reduced to using spokeshave for final shaping



It had taken the best part of six weeks to get to this stage and, it became apparent that there was a massive resin pocket just below the herring hole which would mean that the mast would possibly snap under load.

Another couple of lads were drafted in to cut out the resin pocket and shape it in a shallow 'bowl' shape. They then made the matching shape in clear pine and spent many happy hours getting the two shapes equal – you tend to use chalk or pencil on one part and then rub it gently against the other part.

Resin pocket removed and being filled with glued shapes





Unknown trainee shaping glued inserts

The high points are where the chalk or pencil rubs off on the other side and then more work with the curved based plane. Once Terry and Vincent were satisfied that the cut out on the mast matched the insert, the crew assembled a whole heap of what boatbuilders call mast clamps consisting of two lengths of threaded rod, two sturdy timbers with two holes in each for the threaded rod and completed with nuts and washers.

The glue? Two pack red stuff called Resourcinol – Terry would not tolerate epoxy and polyurethane was barely known at all. Terry oversaw the mixing and once the two parts were glued together there was a mad rush to get the mast clamps on and tight. Glue in those days was a fairly slow affair but it had to be right. Beyond a couple of screws to prevent the insert being moved, I don't think there were any fasteners put into the the scarf because of the possibility that they would weaken the structure.



Shape of filled resin pockets – filled and glued.

It was at this point that Dave and I were moved off the job but our last effort was to stamp our names into the heel of the mast, just where the lead goes, so one day in fifty or so years, they may well find John Henson and Dave Deacon's names stamped into the heel of the now defunct mast.

I remember that, at the end of each day we covered the mast with a waterproof sheet and rarely, if ever, worked in the rain. We looked after our 'baby' with great care. By the time we finished, there were 'shakes' beginning to appear, but that is always a problem with solid single timbers. All the ones I can see over twenty years later are along the grain and none have migrated across the mast. The suggestion of letting raw linseed soak into the shakes is a good one but I'm sure that cutting the oil with a paraffin will make it soak in better. I have seen solid masts with bands to keep the shakes from opening, but this would be impracticable since the gaff jaws have to slide up and down.



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1Heel of mast where the lead balance weight is to be hung

I've heard that Maynard Watson has built a mast for Albion, but it was decided to laminate this one as finding a decent baulk for timber 46 ft long and 14 inches square is going to be almost impossible. I must take the chance to take a look at Maynard's job as I'm sure the shape will be rather more elegant than the 'thick ankle'd' job we achieved.

By the way , it was noted that when the crane came to take the mast to Upton, the mast was well over a half a ton lighter that when we started!



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Completed mast on truck as transported to Upton