



Making a wooden mast

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Selecting Timber

- A suitable baulk of timber is selected and inspected to make sure it's free from natural defects such as knots, shakes and sap pockets.



The First Cut

- The rip saw is set at the required thickness and the timber run through at an even speed. At this stage it's important to factor in enough extra wood to allow for planing and shaping down to the intended diameter of the finished mast.



A Good Fit

- To even out any natural stresses that may exist in the wood, the timber is turned so that the grain flows in the same direction. Generally speaking, the 'inside top' section is rotated to become the 'outside bottom' – but it does depend on how the wood comes off the saw.



The Second Cut

- Both halves are machined straight by following a straight-edge pattern tacked onto the top of the wood. This important cut corrects any slight bend that may be in the mast and gives an edge to work from. The hollowing, together with the luff and any wiring tube, is also cut out at this stage using the spindle moulder.



Hollowing

- The mast is hollowed to reduce the weight, leaving certain sections intact to support spreaders and shroud fittings.



Glueing Up

- Collars use Aerolite 300 on smaller spars, and Resorcinol on larger ones. Here, Aerolite 300 is being used in the traditional manner – spreading glue on one side and hardener on the other, before the two halves are joined and clamped.



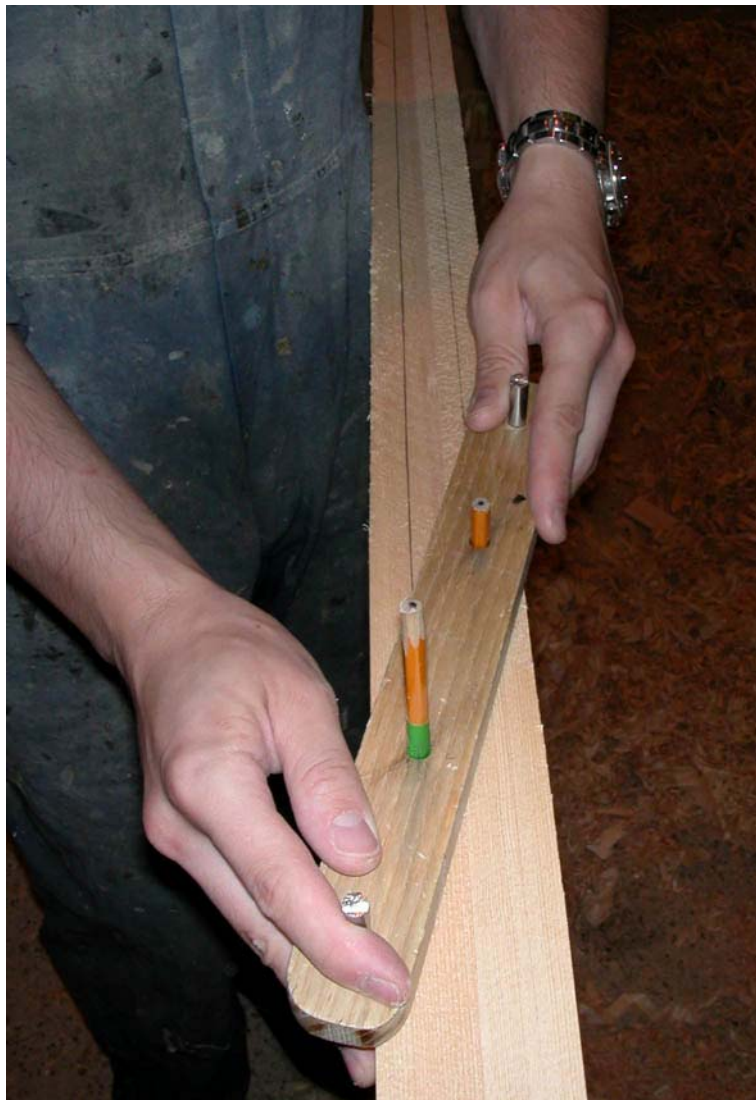
Setting

- The two halves are pressed together and clamps are placed at regular intervals along the spar while it is eyed up to make sure it lies true and straight in both directions. If at any point there is a slight bend, the mast can be tapped with another piece of wood, or a soft mallet, in order to straighten it before the remaining clamps are placed and tightened. Clamps are spaced every 15-20 cm and left for six to eight hours for the glue to cure and harden.



Marking

- The tapers along the back and sides of the mast are cut first using the rip saw to remove the bulk. It is then squared up by hand using a jack plane. Once true, a spar gauge is used for marking the edges of four new sides along the spar.



Hand Shaping

- Most of the shaping is done with the drawknife, following the spar gauge lines and turning the square-sectioned spar into one with eight sides.



Hand Planing

- The rounding plane is used to round the eight-sided spar. Working with the grain and along one edge at a time, the spar is worked until the spar is almost at its finished dimensions: then, a smoothing plane, set fine, is used over the length of the spar to make the shape – whether round or pear-shaped – as true and consistent as possible.



Final Smoothing

- The spar is sanded fine using 60-grit sandpaper followed by 120-grit, and finished with 240-grit.



Varnishing

- The spar is varnished using a base coat, followed by four top coats.

