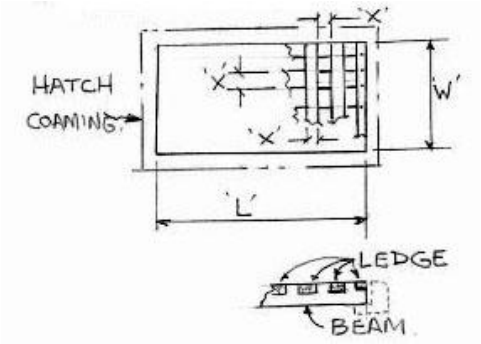
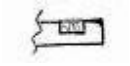
Making Gratings on a Table Saw

Typical Layout



Some thought must be given to scale and the fact that on the real ship dimension 'X' was between 50mm & 70 mm and also the edges of the ends had to finish with a beam or a ledge thus: -



For modelling purposes, look at the plan of the hatch coaming. On *La Belle Poule (LBP)*, 'L' was 27.78 mm & 'W' was 19.05 mm.

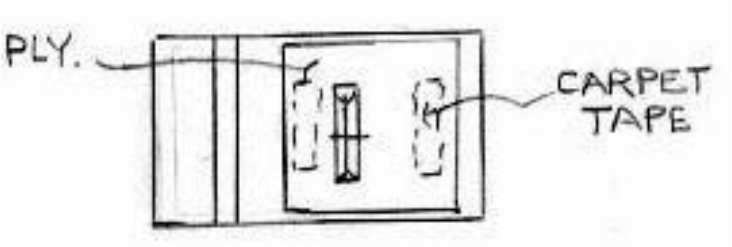
I have a saw blade 0.04" (1.016 mm) thick which is equivalent to a 65 mm at a scale of 1:64.
In order for the grating to end in a beam or a ledge 'W' & 'L' when divided by 1.016 must result in **odd** numbers. *This is important!*

$$\frac{27.78}{1.016} = 27.34 \quad \& \quad \frac{19.05}{1.016} = 18.75$$

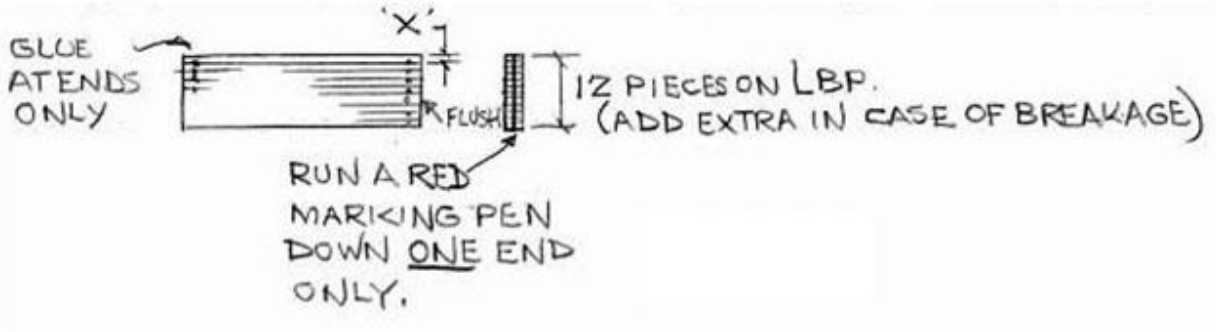
I decided to have 27 spaces on 'L' & 19 spaces on 'W'.
'L' may finish up 0.34 mm short & 'W' may be 0.25 mm too big but, in practice, this should not be a problem.

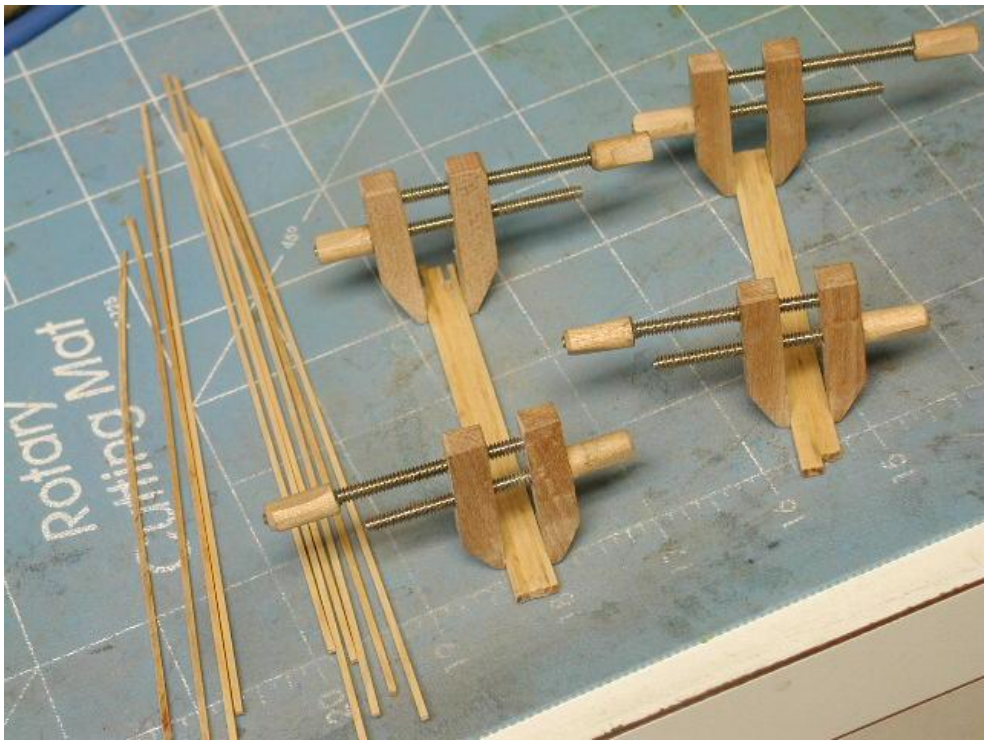
Depending on how many gratings you have, cut strips of boxwood or pear for your beams and ledges. The width of the beams and ledges, 'X', must equal the width of the saw blade you have chosen. In my case that was 1.016 mm.

Take a piece of 1/64" (0.39 mm) aircraft plywood (Hobby Stores) and carpet tape it to the top of the table saw. The saw blade must be below the surface of the table. Run the motor and slowly raise the blade through the plywood. You now have zero clearance between the saw and the table.

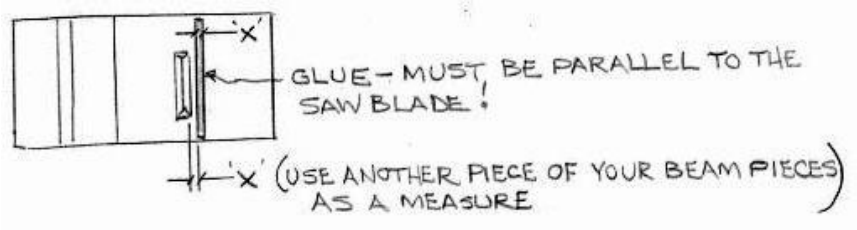


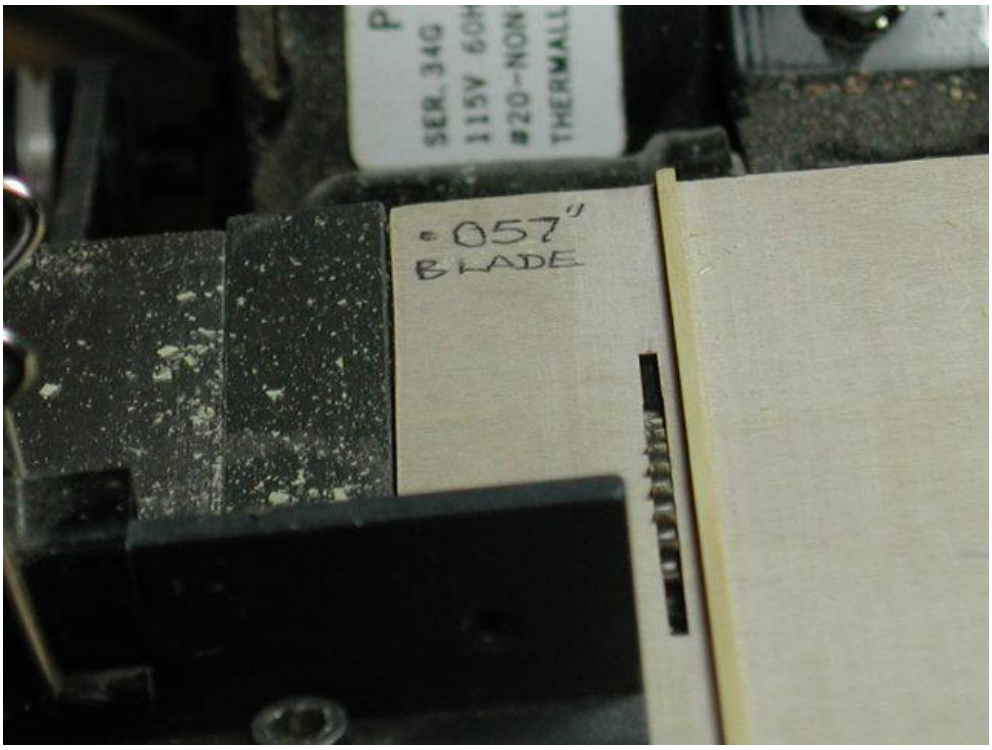
Cross cut as many beams as you require to a length of say ‘L’ + 12 mm.
Stack them together thus with a spot of glue at each end:



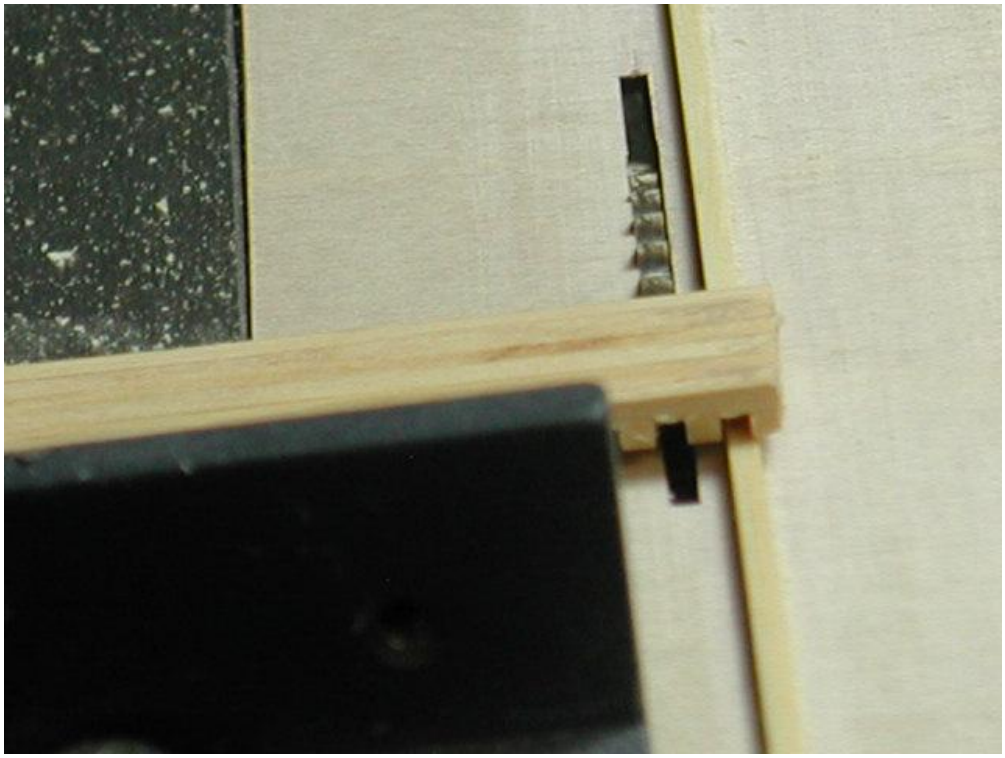


Glue a batten (one of the ledges will act as a batten) to the surface of the ply thus:



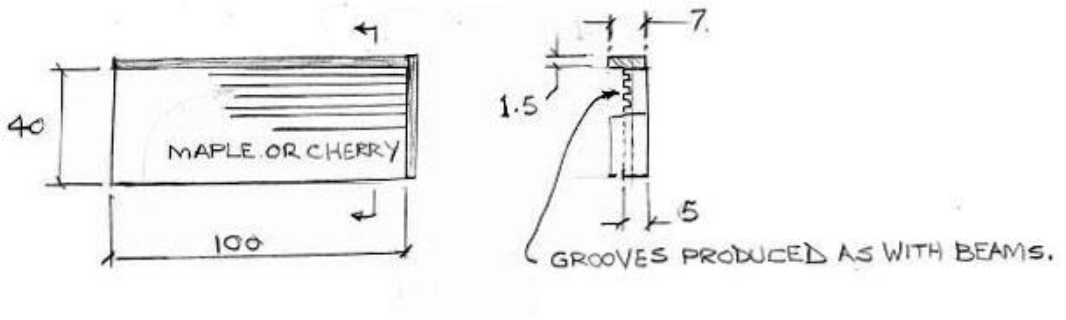


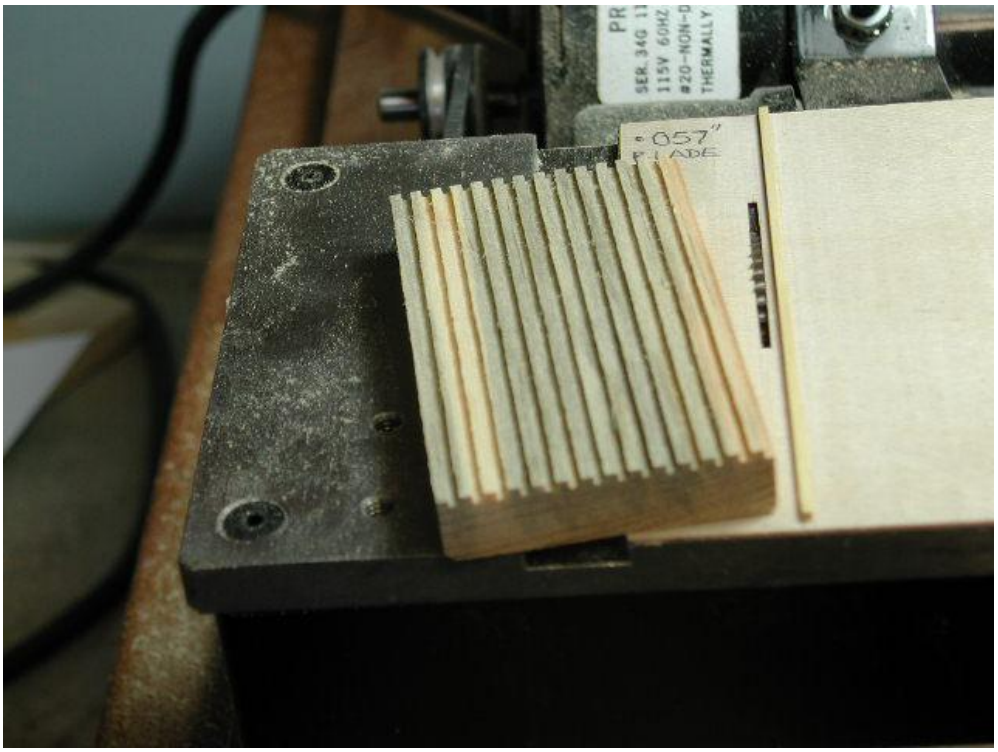
Install the mitre gauge and taking your glued-up block of beams, run them across the saw blade. The blade must be raised to produce a dado whose depth is equal to the thickness of the ledges. For the first cut, the end of the glued up pieces must butt up to the glued on batten thus:



Separate the beams (Acetone will soften the glue and you can run a razor blade down the joints. Be careful – Delicate!)

Although not essential I made the following assembly jig:

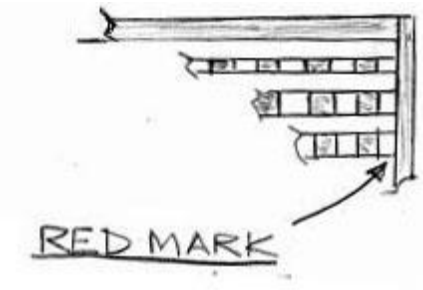




Place beams in the grooves thus with the dados facing up:

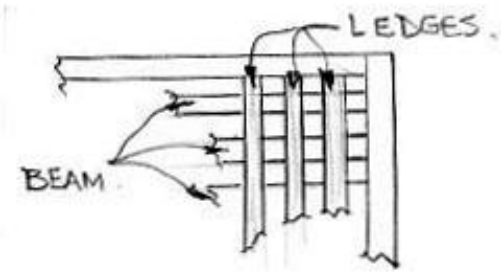
Important!

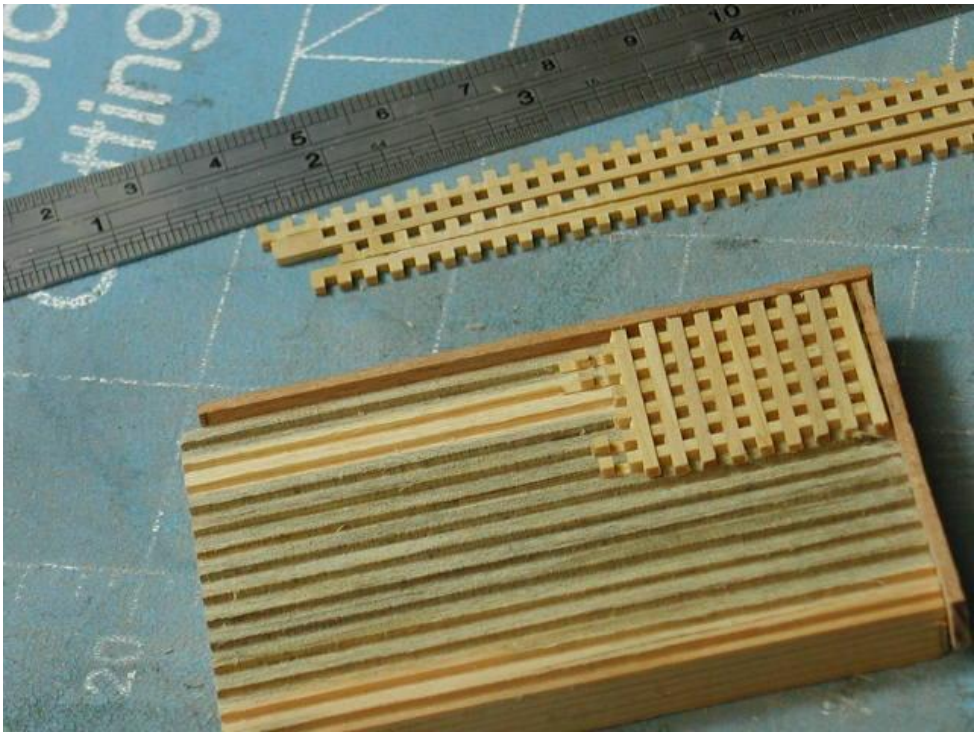
Ends of beams with red marks should be at this end



and flush with the end frame.

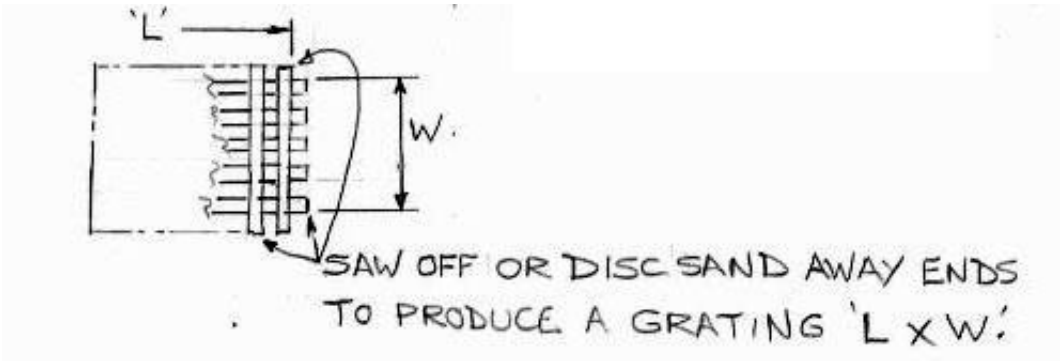
Then glue in the ledges – not too much glue and be careful to not glue the assembly to the jig.
It is best if the bottoms of the dados in the beams are slightly above the top surface of the jig.



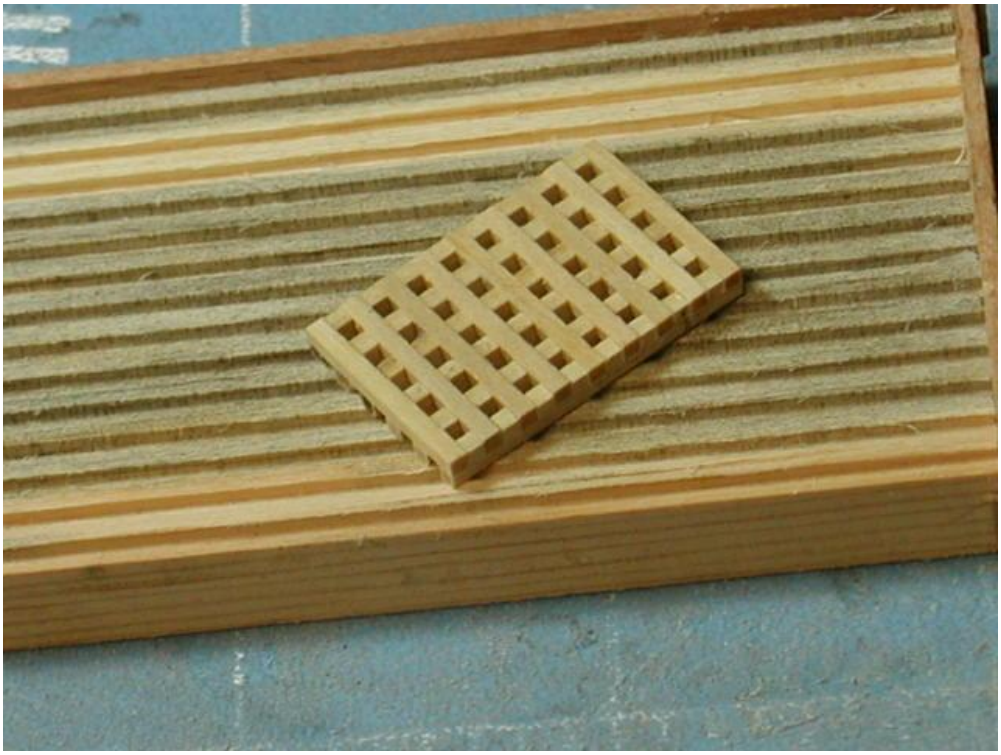


Remove the assembly from the jig.

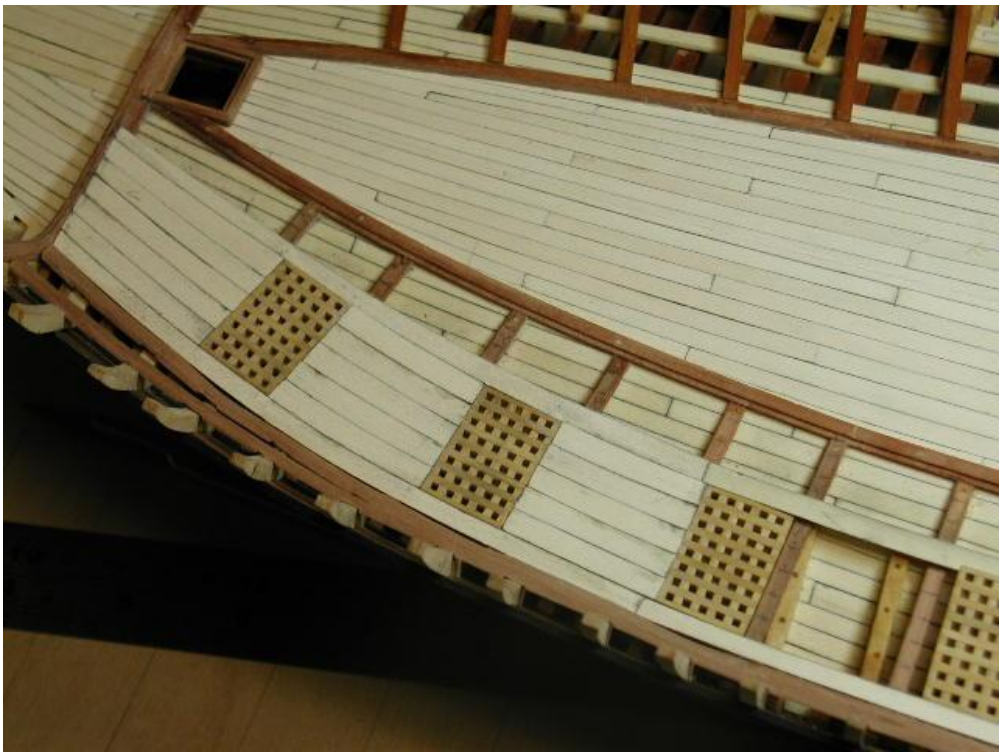
You should now have a grating slightly larger than you require:



A completed grating:



And a set of gratings installed on Le Requin:



Finishing touches.

Note. Nothing is perfect in engineering, you may have to:

1. Adjust the opening in the hatch coaming, or
2. Sand the outside edges slightly to fit the hatch coaming.

When installed in the coaming, sand a slight camber to match the deck.

Keep the zero clearence ply with the glued on batten. Mark what blade thickness it is for – it may be used again.

The methods of producing parts and their assembly shown here, have been tried and found to be good for the ships mentioned. Feel free to improve on them as you find fit.

Keith Harrison
23rd October 2005