

## Project Chat Sheet #5: Long Work Bench

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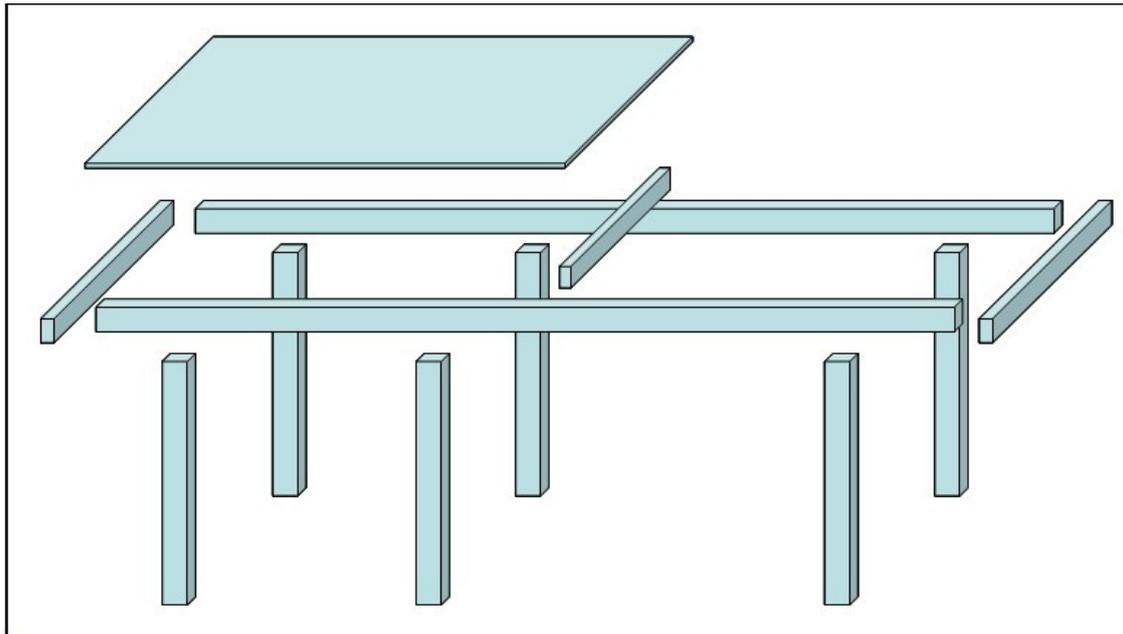
Early project job: building a work bench, six metres long.

This Dory project uses the 'Outside-In' building approach, which requires joining three and a half 2400x1200mm plywood sheets together to create the topsides of the boat. For this boat, that means creating two plywood topsides, each made from 3 ½ plywood sheets joined end to end, making each of the topsides 8.4 metres long. As well, the project needs a long work space for laminating the keelsons (central and sisters), and the other key longitudinal pieces – the chine logs and sheer clamps.

In the absence of a long, flat floor or tarmac surface area on our site, capable of taking 3 ½ plywood sheets set end to end to enable them to be joined together, it was necessary to create a bench for this purpose.

A bench six metres long – the length dictated by the standard stock size of available pine construction timber – satisfies that need, with overlap of the ply by just over a metre at each end, at the stage of final sheet joining.

The bench is simplicity itself. The frame is constructed from five (5) six metre lengths of 200x50mm (roughly the old 4 inch x 2 inch) stock pine.



Importantly, the bench does not need a full length table top. What it needs is just one section of tabletop area over which the ends of two sheets that are to be joined together can be placed flat and square and clamped/weighted down during the gluing process.

A single 2400x1200mm (or old 8x4Ft) sheet of thick particle board or melamine-finished board serves that need quite adequately. To keep multiple sheets flat and level along the table length, away from the particle board sheet, you simply sit battens (the same thickness as the particle board) across the bench frame.

For the frame:

- 2 x 6.0M lengths, for the longitudinal beams.
- 6 x 1.0M lengths, for 3 pairs of legs

- 3 x 1.0M lengths, for the cross beams
- 16 x 600mm lengths, for the braces – with ends cut at 45 degrees
- Tech screws 75mm or 100mm long.

The photo shows how the pieces get screwed together. It's a tad 'agricultural', yes, but the objective was strength and stability in a bench, not a delicately made piece of fine furniture. It only needed a couple of hours work.

This long bench does not need to have a long life. Once the joining of ply sheets to create the topsides is completed, the keelsons laminated, and the long stringers for the chine logs and sheer clamps laminated, the need for 6 metres of working bench space goes away.



Six metre work bench, for joining ply sheets

With that thought in mind, I chose not to place the mid set of legs in the centre of the 6M length of the bench. Rather, I placed the 'centre' legs just two metres from one end. From the photo, you will observe that all legs have two vertical corner braces, but (at the far end in the photo) just four of the six bench-top frame corners also have inner lateral corner braces? Thinking ahead, by cunningly placing the mid legs where they are, and placing a cross beam there, with inner lateral corner braces - what I've actually done is to create the fully braced frame for an eventual site workbench that will only be 2400x1200 in size – the size of the particle board sheet.

When I no longer need 6 metres of bench space, I only need to make two saw cuts, through the longitudinal beams, taking off just under 4 metres (at this end, in the photo) and voila – my shorter workbench is done. The timber in the off-cut section of bench framing can then be recycled for other needs, like temporary support legs for section frames in the hull, braces and so on. But – until I complete the "long" work, the six metres of bench is necessary.

The particle board sheet is not permanently fixed in one position. This lets me slide it back and forth and, depending on how many ply sheets I'm working with for a particular joint, I can position it under the joint, for flat support during gluing.

For upper gluing 'clamps' for joining ply sheets, I had the guys at Bunnings cut a 3 metre, 200x80mm treated pine sleeper in half for me. The garden sleeper cost about \$25, and the sections will have later use somewhere in the garden, so there will be no waste. One half sitting on top of the other – resting flat over the butt strip – and coming in at 20Kg, gives more than enough clamping weight for epoxy gluing a sheet joint.

When using epoxy glue, the idea is not to clamp the joints too tightly because you actually need to leave some glue between the bonding surfaces – you don't want to squeeze it all out by clamping too tightly.

So – at relatively modest cost, we now have the working bench top capacity to handle the "long" bits of work for the project.