Traditional and green WOODWORKING

part two

The tree has been felled, the dust settled and a billet of green wood shouldered to the outdoor workshop. A dead straight 14ft bolt remains in the tree's trunk to be collected later. This week there are two green wood projects on the 'to do' list – finish the Captain's Chair and prepare ribs for the dinghy restoration.

BY ALEX JERRIM

Dinghy restoration and chair making might seem strange bedfellows. In the modern workshop they might be but not the traditional—the skills, tools and materials to create both share much in common. If you can extract a chair leg from a log, use sighting lines to bore compound angles, shape a seat, steam bend a back bow and work a curved branch into an armrest you have the skill to shape a thwart knee or breasthook, steam bend ribs, form a transom and build a boat.

Traditional woodworking is grounded in core principles – understand these and the door to greater possibility opens. Such principles include: how a tree grows and dies; what happens to wood after the tree is felled, bucked, halved and quartered (or milled); how and why a steel blade does or doesn't server wood fibres cleanly; how tools are adjusted to accommodate curves and compound angles; how to create and see shape and form in the mind's eye; and most importantly solve problems.

above right: The Captain's Chair is said to have been popular in the pilot house of Mississippi steam boats. The example here sits besides the pole lathe and drawhorse that were used to produce the turned parts.

right: The arms and back crest were extracted from branches of a similar radius. Tools used were axe, broad hatchet, rip saw, turning saw, drawknife, spokeshaves and scrapers.

The Captain's Chair will need four legs, four stretchers and eight spindles. The woodworker uses a beetle and wedge to halve the billet and then froe and maul to split each piece in half again and again. This process quickly delivers the necessary raw material. As the pieces reduce in size the froe's accuracy becomes more important – if off centre, the split is unlikely to run straight and the froe will have to be manipulated to steer the split back on course.

Next, the broad hatchet – a single bevel hand axe and an almost forgotten tool – is used to work the raw material into a rough cylinder in preparation for the lathe. It's a remarkable tool. Slip your hand towards the end of the handle and the two pound head swiftly reduces a quartered section to size. Hold it close to the poll and the cut is fine, smooth, flat and exact.

The task of making a piece of wood round is made easier if you first make it square! Just as a spar maker works a boom or gaff down from four sides, to eight, to 16, to 32 and then round, the broad hatchet takes the piece quickly to eight sides and then the drawknife is used for the last two steps.

Now to turn the pieces. The woodworker wraps the string of the pole lathe twice clockwise around the hewn cylinder and then allows the piece to fall between two pins. One pin is a threaded rod that winds to hold the piece firmly. The string leads to a treadle. The pole and treadle work in unison, spinning the piece three to five times, first one way and then the other.

A pole lathe's rhythm and quiet efficiency captivates most who see it for the first time. By the look of the woodworker's face he is still captivated by this tool. The many hundreds of hours spent easing the chisel in on the treadle's down stroke and out on the return stroke have not dulled the pleasure of being a 'bodger' (the name given to a person who turns legs and spindles on a pole lathe).

The chisel cuts like a hot knife through butter – it's sharp and the wood still very green. Only hours previous, the piece being worked was part of a living tree. The roughing out gouge and flat chisel quickly produce a finely finished surface. Still wet, the figure in the wood hints at what it will look like when oiled.

While the lathe's pole has been pulsing, a large pot of beach sand has been heating on the stove and is now ready to receive all 16 turned parts. The woodworker, who turned the tenons oversize, now buries each tenon in the sand for several hours. The heat will simulate seasoning and accelerate the time it takes to get the tenons nearer to the moisture content of the surrounding atmosphere.

The tenons will shrink but not crack because the spindles were riven from a quartered billet. The tenon, and eventually the whole spindle, will shrink inwards on a path inline with the growth rings. The piece will oval slightly but not crack. Length-wise there will be negligible movement. When the tenons dry they will be returned to the lathe and brought down to size. The mortice will still be green and shrink to take a tight hold of the tenon.

Joining two pieces of wood of different moisture content is an interesting challenge. It's one that colonial boatbuilders knew better than anyone. Moisture content has implications for nearly all projects including those that involve steam bending. If the wood is too dry the brittle fibres will tear apart, too saturated and the full fibre cells will not accommodate their partners causing the inner curve of the piece to crush. (Most wood bends best in a steam box with a moisture content of approximately 20-25%.)

By far, the greatest challenge for the green woodworker is how to predict and accommodate movement. A green wood piece could weigh several times more than its seasoned equivalent – that extra weight is mostly water. Take the excess water out of green wood – we could be talking many litres even in relatively small pieces— and the wood cells contract, but not in mysterious ways. Whenever wood changes shape there will be a reason for it. Mostly you can come to understand this when you know where and how the tree grew, where the tension and compression was in the tree, how it was split, riven or milled and the nature of the environment it has been exposed to between then and now.

left: Wood split and quartered from a long straight bolt ready to be made into ribs.

below left: The ribs steam bent and fitted.

The many challenges of working wood green are not reasons to avoid it, quite the contrary. Shy from challenges and we learn little. Wouldn't you like to sit under a tree and be able to see a boat, chair or other project in it and know how to give it a go?

A week in the workshop, plus some, has slipped by. The parts of the Captain's Chair are finished and ready for assembly. The dinghy's ribs, which were to be ready for the steam box by now, lie in long quartered billets – a fun project for next week.

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