

Furniture from sleepers

John Coetzee shows you how to turn rough and raw sleeper wood into a stylish coffee table.

The making of sleeper furniture differs from normal joinery in two distinct ways; firstly, the raw material comes in large, almost unmanageable chunks of hard wood, and secondly, sleepers were in those days hacked out of freshly lumbered trees, then dunked in hot tar to protect them against the elements. This, in a nutshell, means that despite the fact that many sleepers had been in use under train rails for around a hundred years, they are not dry timber.

The first issue is easily dealt with; you can buy your sleepers ready cut into planks of most dimensions. The second issue is, however, a slightly larger problem. We are in effect using uncured timber, which means that you will encounter a great deal of warping and twisting of planks soon after cutting. The only way to combat this is to work fast, keep an eye on your components and seal the finished product without delay.



The pile of cut sleepers that will be transformed into a stylish coffee table.



The completed sleeper coffee table, a fashionable addition to any lounge.

Sleepers also have the exaggerated reputation of being too hard to work with, but in truth, they are just hard woods of the kind generally used.

Making your coffee table

Step one is to decide on the dimensions of the coffee table to suit your requirements. The table we made was 700mm x 700mm at a height of 450mm. All the following dimensions will be for this particular size. Still, do not be afraid of changing any measurements - the way the table is constructed should make it clear which dimensions depend on others.

We now have three 200mm x 30mm planks of 608mm in length, and four

pieces of 700mm x 70mm x 50mm, which will become the top. We also have four legs of 420mm x 80mm x 80mm, and four rails of 520mm x 100mm x 30mm. Let's get going.

Constructing the top

The three 608mm x 200mm x 30mm planks are grooved along both long edges. For this process you can use a panel saw, or an ordinary skill saw mounted upside down on a worktop. The grooves are 20mm deep and 10mm from the selected top side of the planks. *Tip:* try to do all the grooving with the same setting of the fence.

Next, cut the jointing feathers out of 3mm plywood. We cut six pieces, 32mm



Groove the inside edges of the four components that will frame the centre section.



Make sure that the feathers will fit before you proceed to assemble the top.



Cut feather out of 3mm plywood and spread glue onto the edges of the planks.



Apply glue to the feathers and tap into the grooves of the planks.



Rebate the 520mm x 100mm x 30mm rails on each end.



Use a jigsaw to cut away the bottom 20mm of the tenons on each end of the rails as the mortices are 80mm.



The grains at the head of the planks should run in opposing directions.



Before assembling the frame, cut a groove on the inside of each rail, 10mm from the top and about 10mm deep for the table top brackets.

wide and about 650mm long, and ran the corners over a belt sander to facilitate good entry into the grooves. Spread glue onto both edges of the centre plank and on each of the outside two planks, meticulously working the glue into the grooves. (Attention must be paid to the way in which you laminate adjoining planks).

Grains at the head of the planks should run in opposing directions. Spread glue onto both sides of the feathers and tap them into the grooves of the two outside planks using a hammer and a piece of offcut with the same size groove. Now align the three planks on a pair of sash clamps and gently pull up until the joints are properly closed. Cushion the clamp blocks with offcut material to ensure the safety of surfaces. Another handy tip at this stage is to lay the planks upside down on the sash clamps. This helps to level off the top surface quite nicely. Apply a third clamp on the opposite side and tension up all three clamps simultaneously until a firm setting pressure is reached. Leave under pressure for approximately one hour, then release the clamps slowly ensuring that the joints stay closed.

With the centre section of the top together, crosscut the ends to trim off the

extra 4mm on either side to make the total length 600mm and thus equal to the total width. (The reason we leave some extra meat on our lengths is that it is very difficult to line up ends of adjoining planks when clamping and laminating. Trimming them afterwards therefore leaves a straight jointing surface). Next, groove the edges that you have just trimmed and squared. Sometimes it is required to clamp a brace across the piece in order to keep it straight - remember the moving and warping tendency of sleeper material.

Mitre the 50mm sides on both ends of the four 700mm x 70mm x 50mm components that will frame the centre section. Now groove the inside edges of these at the same setting from the top. Also groove the mitred surfaces to no less than 25mm from the outside corners.

Dry fit all the parts to ensure proper joints, then spread glue on all jointing surfaces and the four feathers. Use short offcuts of feathers in the mitres, then clamp together. After the required one-hour setting time, remove the clamps, once again exercising care that the joints do not pull open.

With the top in one piece, address the holes left by Railway Departments all over

Africa. Plugs of 20mm drilled out of the same material are glued and hammered into each hole. Use an angle grinder fitted with a sanding backing pad and a 24 grit sanding disk to grind down the protruding plugs and roughly bull-nose all corners.

Progressively using finer paper as you go along, smooth down all surfaces. When satisfied that all unsightly scratches and saw scars are obliterated, use an orbital sander with 150 grit paper and polish the top and edges to a baby soft, fine finish.

Turn the top over on a clean blanket, fit a wire cup brush to your angle grinder and clean up the bottom of the top to remove all splinters, and railway dirt that might still be imbedded there.

We used Woodoc 10 to coat the table. It penetrates well when thinned down 50:50 with petrol and applied with a soft cloth as a first coat of polish - petrol also accelerates the drying time of the product. We then used two more coats to produce a rich soft finish. Use wire wool to flatten the surfaces between coats and do not thin down the two final coats.

Another difference in working with sleepers is that certain inaccuracies and irregularities are considered fashionable, adding to the character of sleeper



When all unsightly scratches are removed, use an orbital sander with 150 grit paper to polish the top.



The legs and frame of the coffee table, glued and clamped.



Once removed from the clamps, check once more for squareness.

furniture. The top of a coffee table, or any other table for that matter should at least support a cup of coffee without spilling, but we used an angle grinder and a hand-held belt sander to surface the top and all other parts, deliberately not making it too perfect. An extra dramatic indent at the corners here and there only adds character and makes the piece a once-off.

Making the legs

The angle grinder should by now have established itself as the primary tool in sleeper work. We ground the four 420mm x 80mm x 80mm legs into an attractive shape, giving our artistic flair a bit of a free rein. Just remember to round off the bottom ends of the legs and sand them nice and smooth, so that the carpets it will eventually stand on do not suffer ill effects. Sleeper furniture is notoriously quite heavy.

About 20mm from the outside corners of each leg, use a 16mm straight bit to cut 40mm deep and 80mm long mortices from the top downwards.

The 520mm x 100mm x 30mm rails are now rebated on each end for 40mm to a remaining thickness of 16mm. Make sure that both rebates are on the same side of the plank. Since the rails do not show on the outside, choose the most presentable face prior to rebating, and then do so on that same side. We are now left with a 40mm x 16mm tenon on each end of our rails. They are, however, 100mm long and the mortices only 80mm. Simply use a jigsaw to cut away the bottom 20mm. On the belt sander, round off the undersides of the tenons to fit the radius left by the router bit where you cut the mortices in the legs.

Before assembling the frame, cut a groove on the inside of each rail, 10mm from the top and about 10mm deep.

Start and end these grooves before the beginning of each tenon. Spread glue as normally done with mortice and tenon joints and clamp together two sides of the frame separately. When set after one hour, glue in the remaining two rails. This makes it easy for us to wind up with a frame at least square enough to fit into the top. Strengthen these recently made joints by inserting two screws into each tenon through the inside corners of the legs.

Use a length of screw that will actually go through the tenon without appearing on the outside of the leg - an 8mm x 50mm chipboard screw works well in a 20mm deep countersunk hole with pre-drilled pilots.

Because of the screws you need not wait for an hour to allow the glue to set. Remove the clamps and do a final finishing using 150 grit sandpaper. Apply the three coats of Woodoc 10 as described earlier.

Final assembly

Simply lay the top face down on a clean blanket as soon as the stain is properly dry after some four hours, depending on the weather. Then put the frame into the top, naturally upside down too, and using table top brackets inserted into grooves in the rails, fasten the frame to the top by using 8mm x 20mm chipboard screws through the brackets. Take it easy when driving screws with an electric driver, especially when fastening any metal onto the wood. Metal stops a screw very abruptly and with the speed or torque too high, it is quite possible to snap the screw or shatter the pozzi bit.

Your coffee table will remain beautiful and stable forever if fed a tot of Teak oil once a month. 🪛

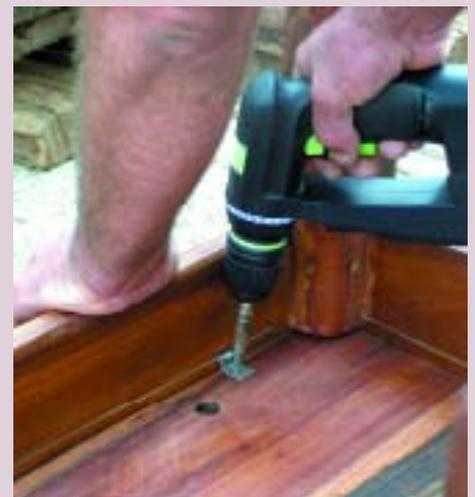
For more information on this project, or to purchase sleeper wood, contact John or Ian at Railways Sleeper Centre on 011-788-7179.



Apply the coating to the table - we diluted 1:1 with petrol, which decreases the drying time.



Move onto the legs and the frame, coating as before.



Finally, fasten the frame to the top using table top brackets.