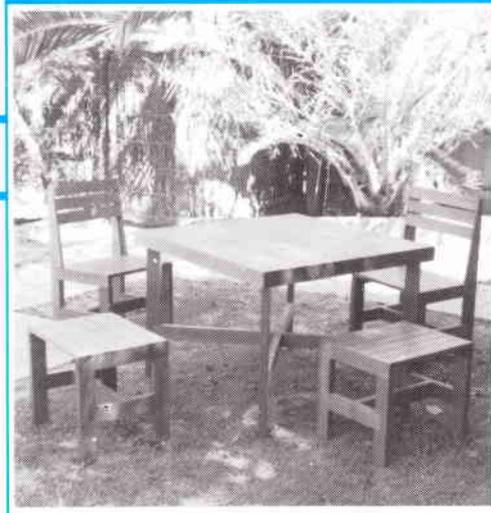


Outdoor Furniture

Designed and constructed
 by John Clark



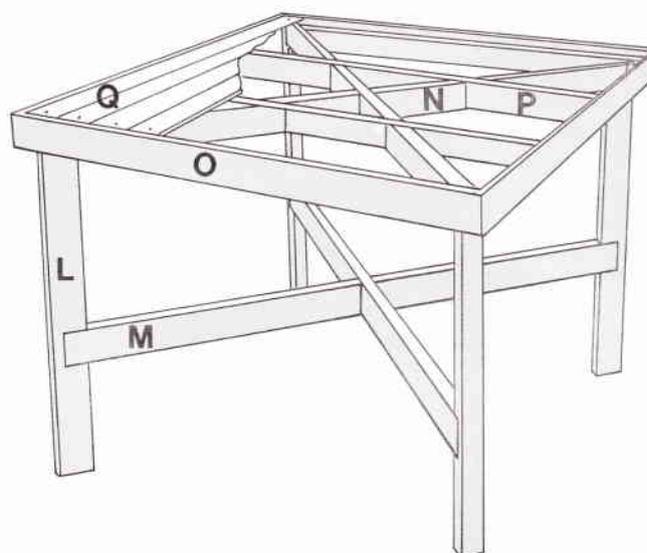
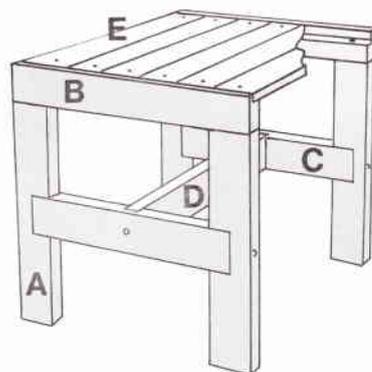
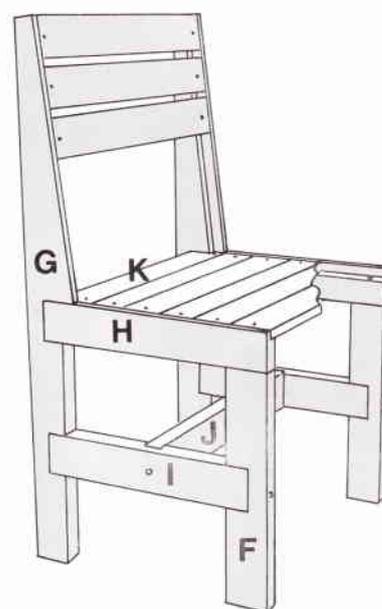
This outdoor setting provides an alternative to the more usual, chunky type of garden furniture. Its clean, attractive lines would make it equally at home in a sunroom, on a patio, or in the garden itself.

The instructions that follow are based on construction using the workcentre and your power saw. However, router-table owners may decide to use their routers for the rebating that is required. A taper-ripping jig is needed. Please refer to the Jig Guide for details.

Component Specifications All dimensions are in mm

	Part No.	Description	Quantity	Width	Thickness	Length
Stools (2)	A	Legs	8	67	x 32	x 380
	B	Top Rails	4	67	x 32	x 412
	C	Bottom Rails	4	67	x 32	x 345
	D	Cross Rails	2	67	x 32	x 474
	E	Seat Slats	12	67	x 19	x 480
Chairs (2)	F	Front Legs	4	67	x 32	x 380
	G	Back Legs	4	92	x 32	x 900
	H	Top Rails	4	67	x 32	x 412
	I	Bottom Rails	4	67	x 32	x 379
	J	Cross Rails	2	67	x 32	x 474
	K	Seat & Back Slats	18	67	x 19	x 480
Table	L	Table Legs	4	67	x 32	x 750
	M	Bottom Rails	2	67	x 32	x 1500*
	N	Top Rails	2	67	x 32	x 1500*
	O	Top Frame	4	67	x 32	x 1059*
	P	Top Supports	2	48	x 32	x 1011*
	Q	Table Top Slats	15	67	x 19	x 1033*

* These components are cut oversize initially, and then trimmed to finished size during construction.



Tool Requirements

- ESSENTIAL** Triton Workcentre and your power saw (minimum saw blade size = 7"), taper-ripping jig, pencil, measuring tape, drill and 5/32" and 3/16" drill bits, screwdriver, countersink bit, fine grade sandpaper, hammer.
- USEFUL** Mitre corner clamps, mitre square, nail punch.

Construction Details

Material Shopping List

1. WOOD Outdoor settings require weather resistant woods. If your furniture is to be moved constantly from indoor to outdoor, or from verandah to garden, it would be preferable to use a durable, light softwood, such as Western Red Cedar, Cypress, or preservative treated pine.

Note, however that in making this project you will need a substantial amount of wood. If cost is a major consideration, you may decide to use less durable (less expensive) material and protect your outdoor setting by painting.

The shopping list that follows is for the table, two chairs, and two stools. If you decide you need four chairs, for example, study the component specifications carefully, and add to your material list accordingly.

For the table, two chairs and two stools, shop for (dressed size):

92 x 32 mm — 2 @ 1.8 m

67 x 19 mm — 15 @ 2.1 m

67 x 32 mm — 4 @ 3.3 m, and 5 @ 3.0 m

Because of the quantity of material required, and transportation difficulties which may result from the lengths specified above, the following lists the break-up of each:

92 x 32 mm

each 1.8 m length converts to 2 @ 900 mm.

67 x 19 mm

each 2.1 m length converts to 1 @ 1033 mm and
2 @ 480 mm.

67 x 32 mm

2 of the 3.3 m lengths convert to 6 @ 380 mm and
1 @ 1011 mm each.

1 of the 3.3 m length converts to 8 @ 412 mm.

1 of the 3.3 m length converts to 4 @ 474 mm and
4 @ 345 mm.

1 of the 3.0 m length converts to 4 @ 750 mm.

2 of the 3.0 m lengths convert to 2 @ 1500 mm each.

2 of the 3.0 m lengths convert to 2 @ 1059 mm and
2 @ 379 mm.

2. FASTENING

100 Flat head galvanized nails
40 mm x 2 mm. 50 Zinc-plated countersunk wood screws
8g x 2". 12 Zinc-plated countersunk wood screws 10g x
2½". Waterproof Glue. (Our example used Selleys "High
Stress Wood Glue 308". Please refer to the appendix on
glues for more information.)

3. OTHER A section of 19 mm particle board or similar
will be needed as a packing piece for the 45 degree
bevel cutting that is required (See note No. 8 and Fig. 8).

4. FINISHING Finishing outdoor furniture presents a
range of problems. Ideally the finish should enhance the
wood, not detract from its appearance. It shouldn't stain
or discolour light coloured clothing. And it should be
durable enough to protect and preserve the wood in all
weather conditions.

Clear polyurethane finishes generally aren't adequate for
the purpose, often breaking down after twelve months of
ultra-violet exposure. On the other hand, some exterior
wood finishes have a heavy pigment which totally hides
grain and wood colour, and thus makes the use of an
attractive wood pointless.

Our appendix on finishes has further information but you
may also find it useful to talk to your local specialist
supplier of wood finishes.

We used Cabot's "Outdoor Furniture Finish" and were
pleased with its appearance on the finished furniture.

General Points

1. Always test your saw settings on offcuts before proceeding to cut your workpieces.
2. The construction of this project lends itself to cutting and/or rebating your similar sized pieces simultaneously. Use masking tape to hold your workpieces together to ensure identical components.

I With your saw in the crosscut mode begin by cutting all the components for the stools and chairs to length, and the table legs **L** to length. Do not cut the other table components exactly to length at this stage — they will be cut to exact length during construction. It is advisable to code each length as it is cut for easy identification, perhaps with our component part number (A, B, etc.) marked clearly on a small piece of masking tape.

2 If you haven't yet made a taper-ripping jig, do this now. Please refer to the Jig Guide for construction and operation details. The taper-ripping jig is essential to cut the angled back of the chairs.

3 Draw out the chair back angle on a piece of your 92 x 32 x 900 mm length, as per **Figure 1**. Set the angle of your taper-ripping jig by placing the jig over the marked out plank. Convert to the tablesaw mode and set your rip fence so that the saw blade begins its cut at the point **(a)** on **Figure 1**. You can now make the taper-ripping cut on all four chair backs, holding your rip fence setting constant. (You don't need to mark point **(a)** on the other three planks if your settings are not altered.)

4 Convert back to the crosscut mode to rebate the housing joints required for the stools, chairs and table legs.

Begin by raising your saw to make the 16 mm deep rebate in Components **C** (stool bottom rails) and **I** (chair bottom rails). It is best to do these in pairs or sets of four to ensure identical components. Refer to **Figure 2** for dimensions and setting out.

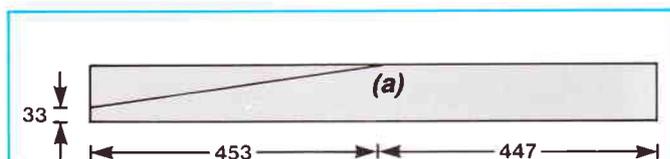


FIGURE 1

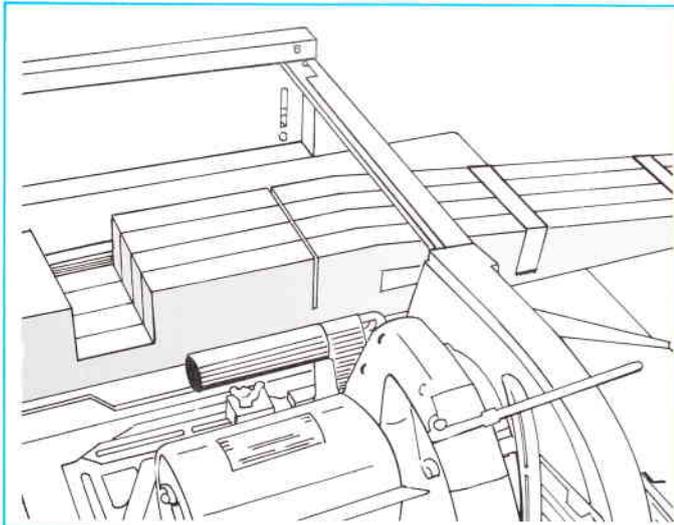


FIGURE 5

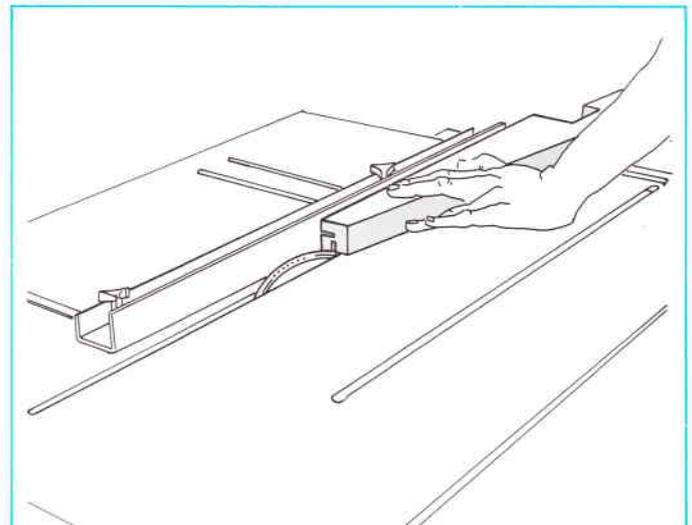


FIGURE 6

Now raise your saw 17.5 mm for the rebates 33.5 mm deep required in Components **A** (stool legs), Components **F** (chair front legs), and Components **L** (table legs). Refer to **Figure 3** for the various dimensions.

Components **G** (chair back legs) also require this notch-rebate. See **Figure 4** for marking out and **Figure 5** which shows how this is done. The saw height for larger power saws remains as is, and the procedure is essentially a repeat of the above.

However with some 9¼" and all smaller saws, it will be difficult or impossible to fit the components **G** between the table, slide rails, and saw chassis. You will need to lower the worktable (see operator's manual, "Double Cutting", for hints about lowering the table.) Lower the table just enough to allow the workpiece to fit underneath.

Check your depth of saw cut; the thickness of the **remaining** material should be 33.5 mm. If your saw has not a sufficient depth of cut to achieve this, you will need to make a reduction in the length of components **H** and **I** (top and bottom rails).

For example, if your depth of cut is insufficient by 4 mm, decrease the length of these components by 4 mm.

5 While in the crosscut mode, trim the top ends of Components **G** so that they are at 90 degrees to the tapered face, by holding the tapered face against the workstops.

6 Convert back to the tablesaw mode. The next step is to make rip cuts on Components **G**, so that the bottom part of the back legs of the chairs have the same width dimension as the front legs. You will need to set your rip fence at 67 mm to achieve this. Cut through to the second notched rebate.

While in the rip-cutting mode, it is convenient to rip Components **P** (table top supports) to their correct width. Set the rip fence at 48 mm... and always use a push stick when narrow ripping.

Component **C**: Dimension (b) for Stool = 156.5mm
Component **I**: Dimension (b) for Chair = 173.5 mm

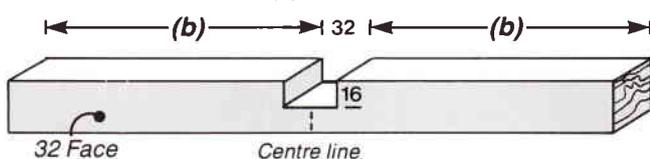


FIGURE 2

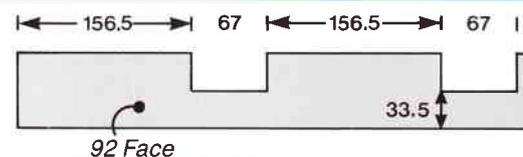


FIGURE 4

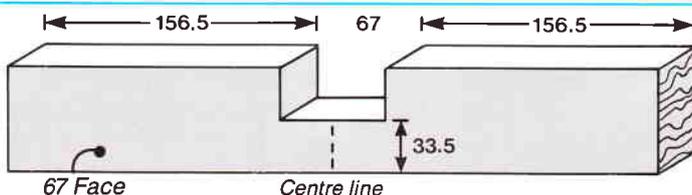
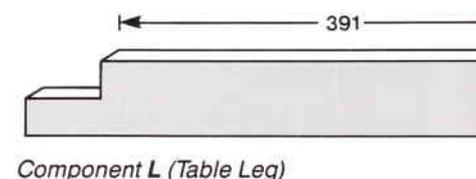


FIGURE 3

Components **A** and **F** (Stool and Front Chair Legs) are identical



Component **L** (Table Leg)

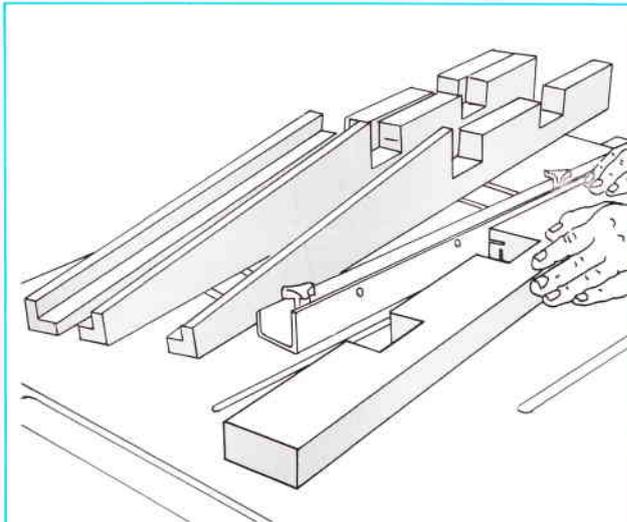


FIGURE 7

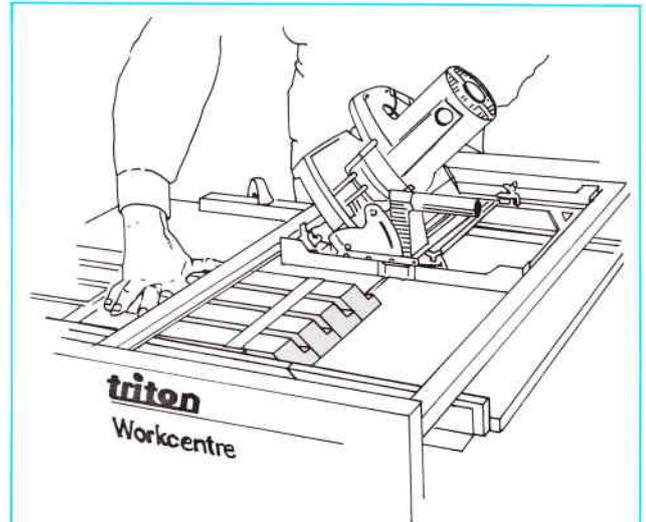


FIGURE 8

7 The next operation is to cut the edge rebates in the following Components: **B** (stool top rails), **H** (chair top rails), **G** (chair back), and **O** (top frame of table).

Use a 19 mm offcut to set the saw blade height, and set the rip fence at 16 mm (assuming the standard 3 mm kerf). Make your first cut into the narrow face, and the second cut with your workpiece lying down on its wide face.

Safety Notes

The procedure suggested in Note 7 is convenient because it does not require re-positioning of the rip fence. However, it can cause the narrow offcut to be trapped between the blade and the fence. **It could be flung out towards you.** When making rebates this way, switch off the power with your knee towards the end of the second cut. Finish the rebate with the blade coasting to a halt.

Also, note that the rebates in the chair backs **G** must be done in mirrored pairs. See **Figure 6** and **Figure 7** which show the procedures.

8 Now turn to the construction of the table top frame, which begins with mitre cutting the ends of components **O** (top frames).

To achieve this, you will need your saw set up for 45 degree bevel cutting in the crosscut mode. Your operator's manual details the procedures required for these cuts. Study the instructions carefully if you are not familiar with bevel cutting. As suggested, use some offcuts to test that your saw setting is precisely 45 degrees; poorly fitting mitres are obvious. And again, tape your four pieces together to ensure identical components (**Figure 8**).

The outside length dimensions of these top frames **O** should be 1059 mm, the inside length 995 mm. Mark out these dimensions carefully on your workpieces before proceeding to the second bevel cut.

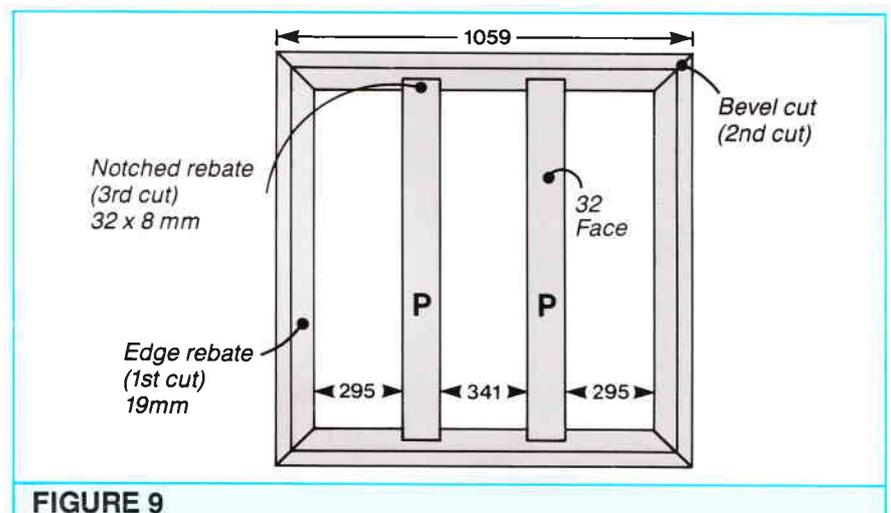
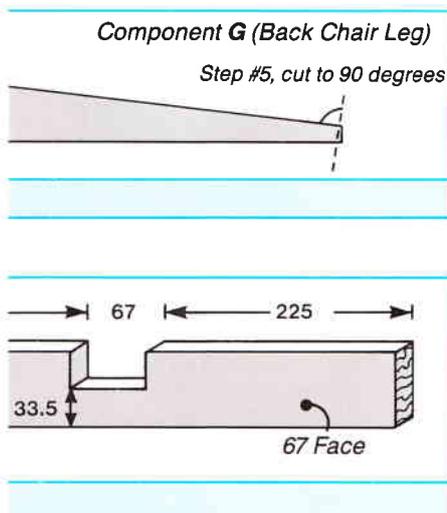


FIGURE 9

Construction Details

9 Two of these top frames **O** require two rebates notched in to accept the two top support components **P**. These rebates are placed 295 mm in from the inside edge of your bevels, are 32 mm wide and 8 mm deep (**Figure 9**).

Be sure to do them together so that they are a perfectly matching pair, mirror imaged.

10 The table top frame can now be assembled. See **Figure 9** which pictures the basic structure. Drill your pilot holes, clearance holes, and use your countersink bit to prepare for your woodscrews (**Figure 10**). Make sure that your screw holes at the bevelled corners are offset for clearance. Screw and glue the frame components **O** together using the 8G, 2" screws.

You will find that mitre corner clamps are useful during this assembly; your table top is square if the two diagonal measurements are equal. Don't add components **P** (top supports) at this stage.

11 The table top is supported by the legs **L** which are held together by the diagonal bracing components **M, M'** and **N, N'** (bottom and top rails).

Note that these components when finished, are designed to fit neatly from corner to corner, diagonally, inside the frame components **O**. However, they are also notched into rebates already made in the table legs **L**.

So to determine the lengths of parts **M, M'** and **N, N'**, rest a piece of your 67 x 32 mm material (already cut to 1500 mm) diagonally over the

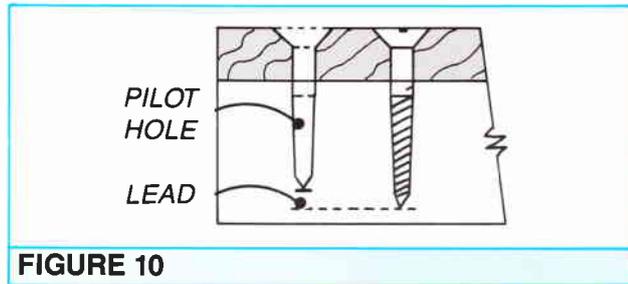


FIGURE 10

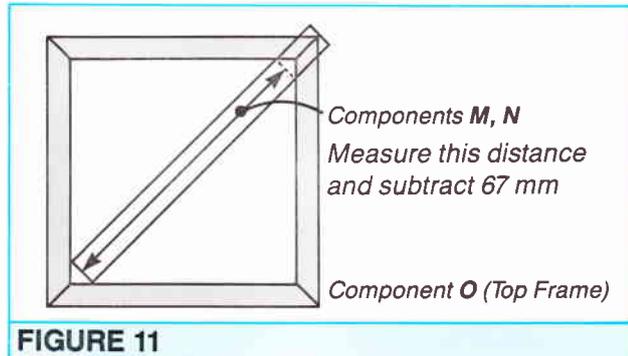


FIGURE 11

underside of the top frame (**Figure 11**), mark where this would neatly fit into the frame, then subtract 67 mm to allow for the rebates in legs **L**, and cut to length.

12 At the midway point of the components **M, M'** & **N, N'** make 33.5 mm deep rebates for the halving-joints that are needed. **Figure 12** shows the table legs **L** and the top and bottom rails (**M, M', N, N'**) assembled. At this stage they should be only screwed, not glued. Components **P** (top supports) should also be attached to the table top frame (component **O**) now; again screw only, don't glue.

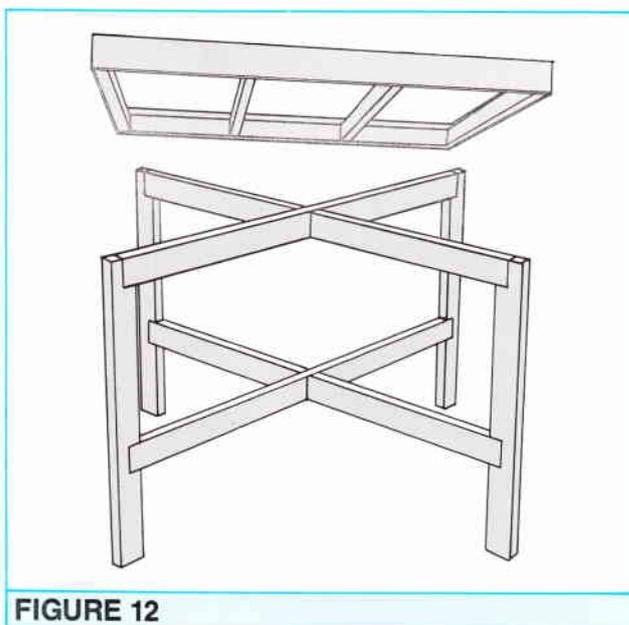


FIGURE 12

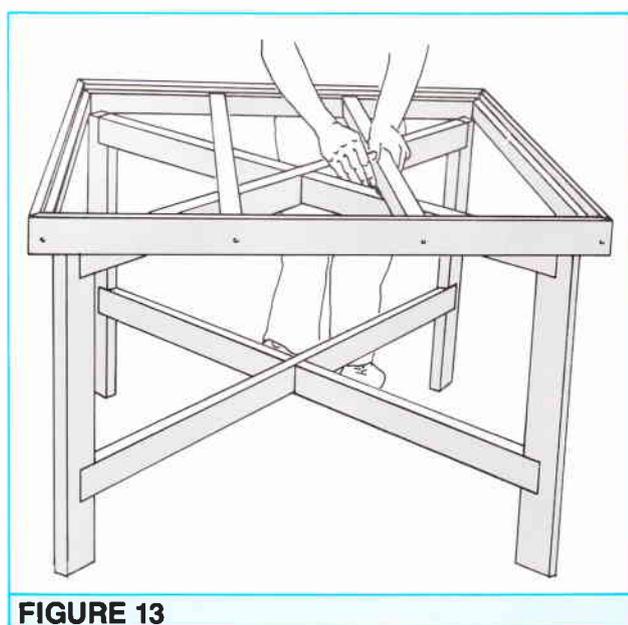


FIGURE 13

Construction Details

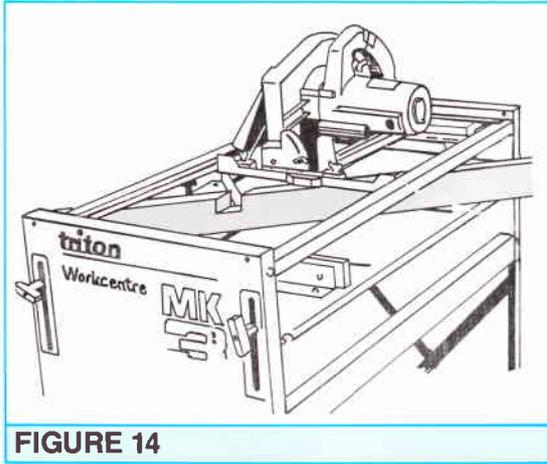


FIGURE 14

13 Rest the top frame onto the assembled leg structure, as per **Figure 13**. This enables you to mark where components **P** (top supports) and Components **N,N'** (top rails) intersect. Carefully mark these contact points with a sharp pencil, and code them so that you can reassemble them in the same location.

Remove components **P** and **N,N'** from their respective assemblies and with your saw still in the crosscut mode you can cut the required 45 degree notched rebates. This is most conveniently done with your protractor set at 45 degrees and clamped to the work table; both faces of the protractor will be used. Your rebates in this case need to be 24 mm deep for these 45 degree halving-joints. (Components **P** are only 48 mm "high".) **Figure 14** shows the procedure.

14 Your component cutting is now almost complete, and the initial assembly can now be done. Refit the top supports **P** to the top frame components (this time glue and screw). The table top slats **Q** can now be accurately cut and fitted; they should be 1033 mm in length, but check your own top frame for sizing. The slats are nailed to the top frame using 40 mm galvanized nails, allowing equal spacing between each (approx. 2 mm). Use a nail punch to punch the nails flush with, or just below, the surface of your wood.

Assemble the two leg frames **together** and refit the top rails **N,N'**. It is advisable to test fit the top frame onto the leg assembly before gluing these components.

In our assembly we decided not to glue components **N** and **N'**, and components **M** and **M'**, together. Woodscrews only were used to allow for partial disassembly.

The design allows the table top frame to interlock positively with the leg frame assembly without the need for gluing or screwing these two together. (**Figure 16**)

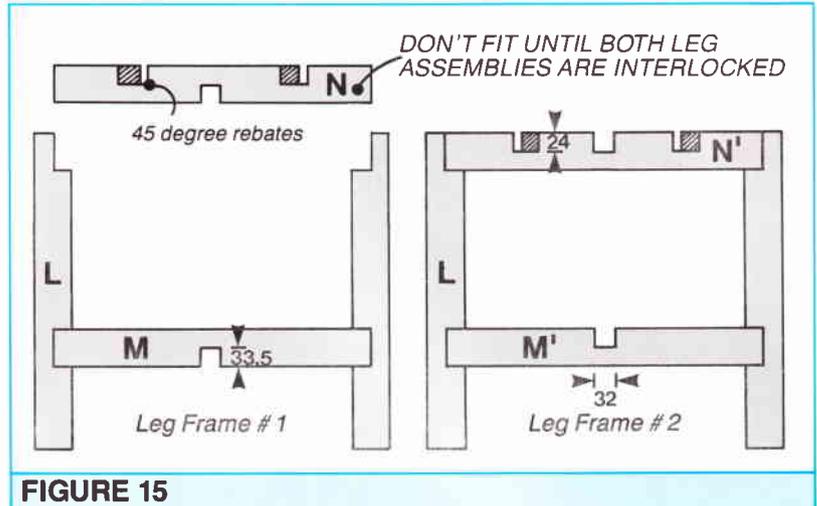


FIGURE 15

This again allows for a degree of disassembly, but if your outdoor setting is not going to be moved much you may want the additional stability that locking these together will give.

15 Now assemble the stools and chairs. Begin by assembling the side frames with screws and glue, (note from the isometric drawings the locations of the wood screws), then attach the cross rails **D** (stool), **J** chair, and finally nail the stool and chair seat and back slats **E** and **K**. The seat slats are spaced at approximately 2 mm, the back slats are approximately 12 mm.

16 Lightly sand all your furniture, removing any sharp edges, and apply two to three coats of a suitable outdoor finish.

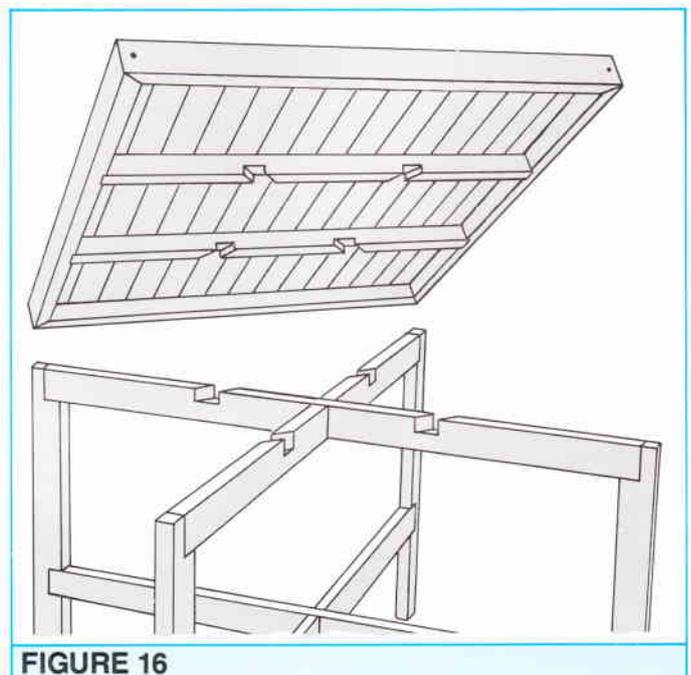


FIGURE 16