Kitchen table

DESIGNED BY JAMES HATTER

James builds a companion for his space busting bar chairs made in our Jan issue

This project matches the bar chairs described last month. The design however can be modified to by reducing the length of the legs, or made into a full-sized table by increasing the size of the top and increasing the thickness of the supporting legs.

All the parts are made up by edge joining lengths of ash together and including some oak infills in the top. The edge joining makes use of adhesive, and is accompanied with jointing biscuits where appropriate, for alignment and reinforcement. Loose tenons are used to join the legs to the rails.

STEP-BY-STEP
Top

1 The finished table top measures 730x 600mm with the corners cut off, and framed with an edging. First form a slightly over-sized blank by edge joining the pieces of ash and oak together. The blank is then

trimmed to 730x 560mm. Form the top by cutting the components to width and length. Check that the lengths of ash are a good joint with each other and use a planer if necessary. Cut matching size 20 jointing biscuit slots along the lengths to support and align the pieces.

2 Dry-fit the components to check alignment, then reassemble using adhesive with the jointing biscuits. Cramp the arrangement evenly to ensure that the board remains flat. Wipe excess glue off with a damp cloth, and leave to cure. Use a random orbital sander to smooth the surface. Trim the blank to 730 x 560mm and evenly trim off the corners.

3 Prepare lengths of 20 x 22mm ash edging to frame the top blank, use 22.5 degree mitres at the joins. Cut matching size 0 biscuit slots to join the edging to the top blank edges. Biscuit the frame edging to the top, and use a band clamp to pull together.

4 Run a round-over bit in a router along the edges, and use a sander to completed table top.

Rails

Each rail is given a matrix effect by edge joining lengths of 20 x 22mm ash together. Size 0 joining biscuits are used for alignment. Cut the lengths to size allowing a little extra in length so that the assembled rails can be trimmed to length.

Assemble each rail with 0 biscuits, and use clamps to hold. Use a sander to

KITCHEN TABLE CUTTING LIST

(All dimensions in millimetres)

	PART	QTY	MATERIAL	L	W	T
A	Table top component	3	Ash	730	120	20
B	Table top component	2	Ash	730	70	20
C	Table top component	4	Ash	155	50	20
D	Table top component	2	Ash	120	50	20
E	Table top component	4	Oak	150	50	20
F	Table top edging	2	Ash	656	22	20
G	Table top edging	2	Ash	486	22	20
H	Table top edging	4	Ash	82	22	20
I	Leg component	8	Ash	240	50	20
J	Leg component	4	Ash	100	50	20
K	Leg component	8	Ash	740	22	20
L	Leg support inserts	4	Ash	65	70	20
M	Leg support inserts	4	Ash	118	22	20
N	End rail component	4	Ash	412	22	20
O	End rail component	4	Ash	66	22	20
P	End rail component	2	Ash	100	22	20
Q	Side rail component	4	Ash	584	22	20
R	Side rail component	4	Ash	152	22	20
S	Side rail component	2	Ash	100	22	20
T	Table top attaching blocks	6	Ash	80	22	20
U	Corner infills	4	Ash	30	30	20
V	Loose tenons	8	Ash	38	40	6

smooth the rails, and then cut to the correct lengths. Put a slight round-over along the bottom edges of each rail.

Legs

1 The legs have a similar profile to the table top corners, and have a matrix effect. Prepare eight 740mm lengths of 20 x 22mm ash for the leg sides, and eight 240mm, and four 100mm lengths of 20 x 50mm ash for the leg infills. Set a table

saw to cut a 22.5 degree bevel, and cut this bevel on one edge of each leg side length and both edges of the leg infills.

2 Mark the positions for the infills onto the leg sides and cut matching size 0 jointing biscuit slots. Make sure that the biscuit aren't in the top 70mm of the leg so that they will not interfere with the rail-to-leg joints. Set the biscuit jointer to cut the slots at 22.5degrees, and make sure that

Cut the table top pieces to size and mark the positions for the jointing biscuits

Set the biscuit jointer to cut matching slots

Assemble the tabletop using biscuits and glue. Clamp the assembly and leave to set

Cut the frame edging to size; cut matching biscuit slots, then join to the table top edge

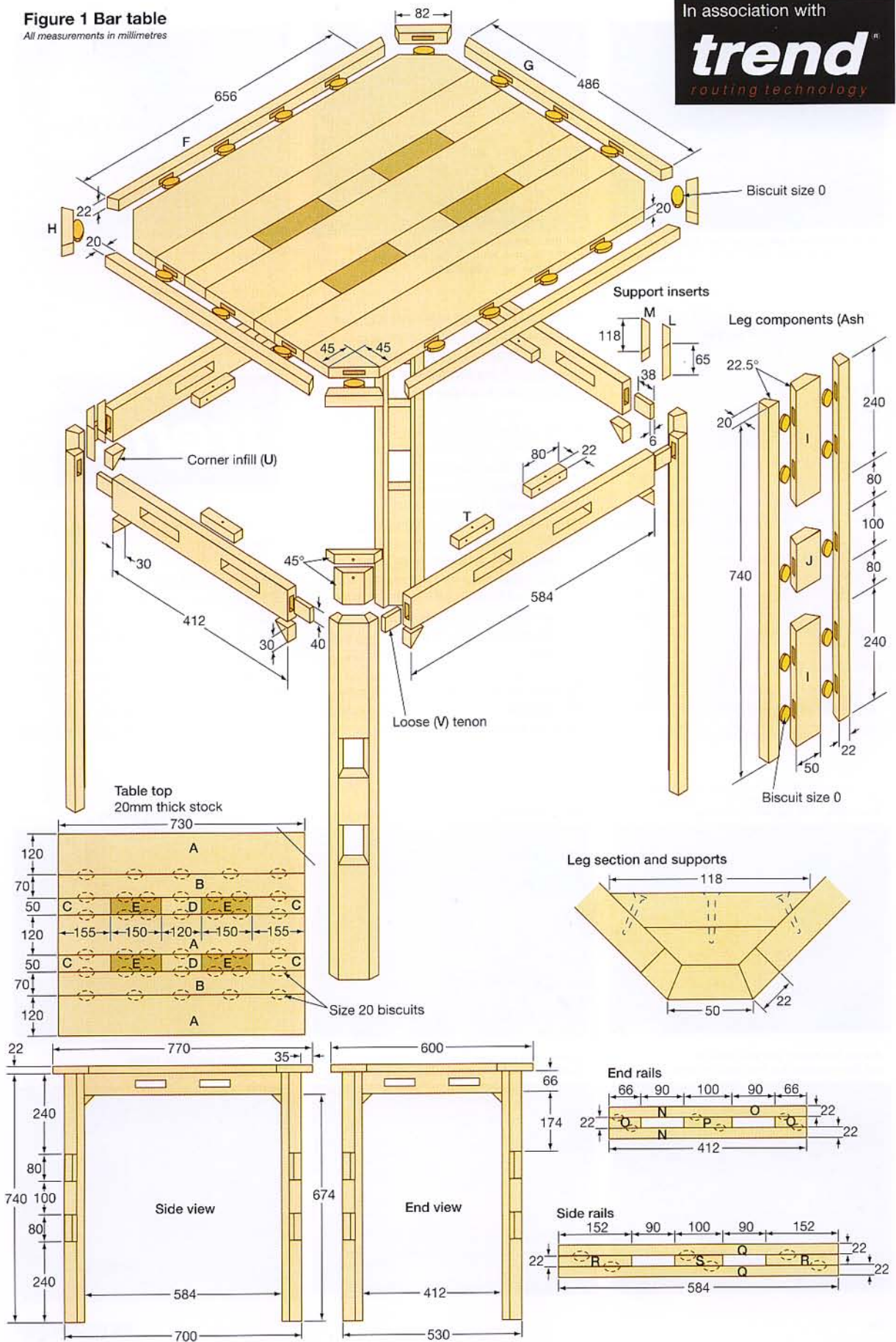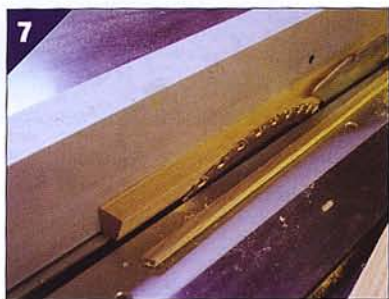Use a band clamp and sash cramps to hold the edging in place

Put a 22.5 degree bevel each side of the leg infills

Figure 1 Bar table
All measurements in millimetres

In association with

trend
routing technology

82

656

486

G

F

22

20

H

20

Biscuit size 0

45 ← → 45

Support inserts

M

L

118

65

Leg components (Ash

22.5°

240

20

80

100

740

J

80

Corner infill (U)

80 → ← 22

T

45°

584

240

30

412

30

40

50

22

Loose (V) tenon

Biscuit size 0

Table top
20mm thick stock

730

120

A

70

B

50

C E D E C

120 ← 155 → ← 150 → ← 120 → ← 150 → ← 155 →

A

50

C E D E C

70

B

120

A

Size 20 biscuits

Leg section and supports

118

50 → ← 22

22

770

35 →←

600

240

66

174

80

740

100

674

80

240

Side view

End view

584

412

700

530

End rails

66 → ← 90 → ← 100 → ← 90 → ← 66

22

Q N P O Q

22

N

22

412

22

Side rails

152 → ← 90 → ← 100 → ← 90 → ← 152

22

R S Q R

22

Q

22

584

Put a 22.5° bevel along each leg side

Set the biscuit jointer to cut the slots at 22.5 degree, and cut the matching slots in the leg components

the fence is set so that the slot will not break through. Cut all the slots and dry fit each leg to check.

3 Assembly is helped by cutting a length of wood with the same profile as the inside of an assembled leg. This requires two 45° bevels to be cut. Cut into convenient lengths 100mm.

4 Assemble each leg using adhesive and biscuits, carefully aligning the infills to the marked positions. Clamp the legs to pull the joints together, making use of the profile aids to reduce any distortion. When set, clean up the assembled legs with a sander, and trim to length; also cut off the corners at the bottom of the leg sides.

Leg to rail joints

1 Traditional mortise and tenon joints could be used by allowing extra length for the tenons to the rails; however a

mortise and tenon jig would be tricky to use because of the profile of the legs. So, I used loose tenons, with the mortises cut by lowering each leg and rail end onto a 6mm straight cutter in a table-mounted router.

2 Set up the router with the 6mm cutter and clamp an upright to the router table fence. Mark the cutter leading and trailing edges onto the router table. The mortise length is 40mm, so mark the position for the matching mortises onto each leg and rail end. Set the router cutter low, then gently lower each leg and rail in turn onto the cutter and move along so that the start and finish marks of the mortise line up with the cutter marks. Continue to make progressive cuts to give a final depth of 20mm.

3 Make the loose tenons by cutting a length of 6 x 40mm ash, and round the edges to match the mortises. Check the
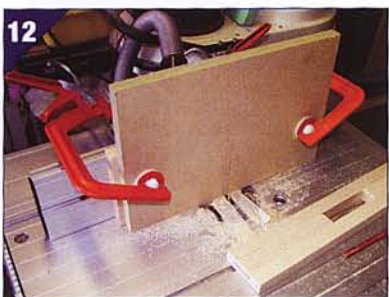
fit into the mortises, and then cut into 38mm lengths.

4 The leg to rail joints is further reinforced by two support inserts attached to the inside of the leg and the adjoining rails. The first of these fits into the inside profile of each leg, extending slightly to each adjoining rail, while the second attaches to the first, and then to each adjoining rail, with screws and glue. Cut a 300mm length of 20m x70mm ash and put a 45 degree bevel along
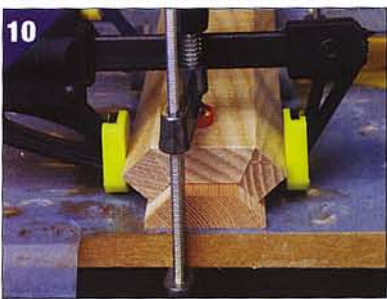
Assemble each leg with biscuits

Use a temporary infill to assist clamping

Assemble each rail using biscuits

Set up the router and the table to cut the mortises for the loose tenons

Lower each leg onto the router cutter, using the marks to give the correct position and length

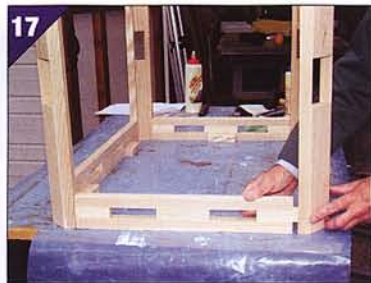Repeat with each rail. Make progressive cuts to the correct depth

Cut the loose tenons and check the fit

Fix the rail to the table top attaching blocks to the top of the rails

Join the legs to the rails using the loose tenons and adhesive. Use a band clamp to pull the joints together

either edge such that it will fit snugly within the inside profile of the leg. Cut the length into four 65mm lengths. Drill a 4mm clearance hole in each and countersink. The second support is made by cutting 118mm lengths of 20m x 22mm ash with a 45 degree angle at each end. It's best to trim to size after the table has been assembled. Each support requires three 4mm clearance holes, one to attach to the first insert and one at each end to attach the angled cut to each adjoining rail.

Assembly

The table top is attached to the rail and leg assembly by six 80mm long blocks of 20 x 22mm ash. Cut these to size and drill two 4mm clearance holes to attach the blocks to the tops of the rails and one 4mm clearance hole for the screw into the underside of the table top. Attach these blocks to the top of the rails; have two on each side rail, and one on each end rail.

Start assembly by inserting the loose tenons into the ends of each rail with adhesive. Next join the rails to the legs by inserting the tenons into the mortises in the legs with adhesive. Pull the whole assembly together with a band clamp. Attach the first leg support insert to each leg using adhesive and a 4mm x 35mm screw.

Lay the table top face down on a flat surface and draw a line 35mm in from the table top edge. Carefully lift the leg and rail onto the table top and align this up with the drawn line. Use 3.5mm x 35mm screws through the attaching blocks to secure the leg and rail assembly to the table top.

The second leg support can now be attached, trim these to size, and attach the support to the first one, and to each adjoining rail with 3.5mm x 35mm screws. Add adhesive when attaching these. Cut eight small triangular inserts and glue at each leg and rail intersect. ■

FINISHING

Do a final sanding; you may find this more straightforward if the table top is temporarily removed to give better access to the rail to leg joints. Apply two coats of a quick-drying clear matt acrylic varnish to all surfaces. Denib the surface of the first coat with a 400 grade paper. Give the table top a third coat.

Attach the first leg support

Check that the assembly is square

Carefully lift the leg and rail assembly onto the underside of the table top, and align. Fix with screws through the attaching blocks

18

19

20

Attach the second leg support

Add the decorative corner infills

Apply a clear varnish

21

22

23