

Inspired by the land of the Pharaohs

When designer-maker Nicholas Chandler was commissioned to make some unusual dining furniture, he looked to the land of the pharaohs for inspiration. In this two-part project he describes how he designed, then made, the chairs and table. First, the chairs.

When I was commissioned to make this dining set the client said he wanted a pedestal leg table and six chairs in a blonde coloured wood in a surreal or Egyptian style.

I had great fun on the surreal theme, using the Belgian surrealist painter Magritte for inspiration, with bowler hats, sausages and pipes. But I could not really see my sketches coming off the page into real life. If I cannot visualise the finished article, I know it hasn't got a future. I also thought the novelty would soon wear off.

The Egyptian theme really caught my imagination as it is a subject that has always fascinated me – pyramids, tombs, gold, the beautifully stylised depiction of events in hieroglyphics. And, of course, those rich, lovely colours.

I started by drawing a steep pyramid form, but with a broad flat top, like the pylons of the temple of Isis at Philae. This was the basis for the chair back shape. By making the shape a frame rather than a solid board I could span it horizontally with 'rungs' coloured a rich turquoise, as on Tutankhamen's gold funeral mask.

The wood therefore needed to be as gold coloured as possible and I settled on Canadian rock maple, which would be finished with Danish oil or lacquer.

The shape made a powerful image when viewed from the front or back and next I had to design the side view shape. I wanted to make the chairs as comfortable as possible – dining chairs are so often extremely uncomfortable, particularly when sitting on them for hours at a time.

When designing a chair you have to begin by setting yourself four basic dimensions – the height of the seat from the floor, the width and depth of the seat, and the angle of the back. After this you have great freedom in terms of form.

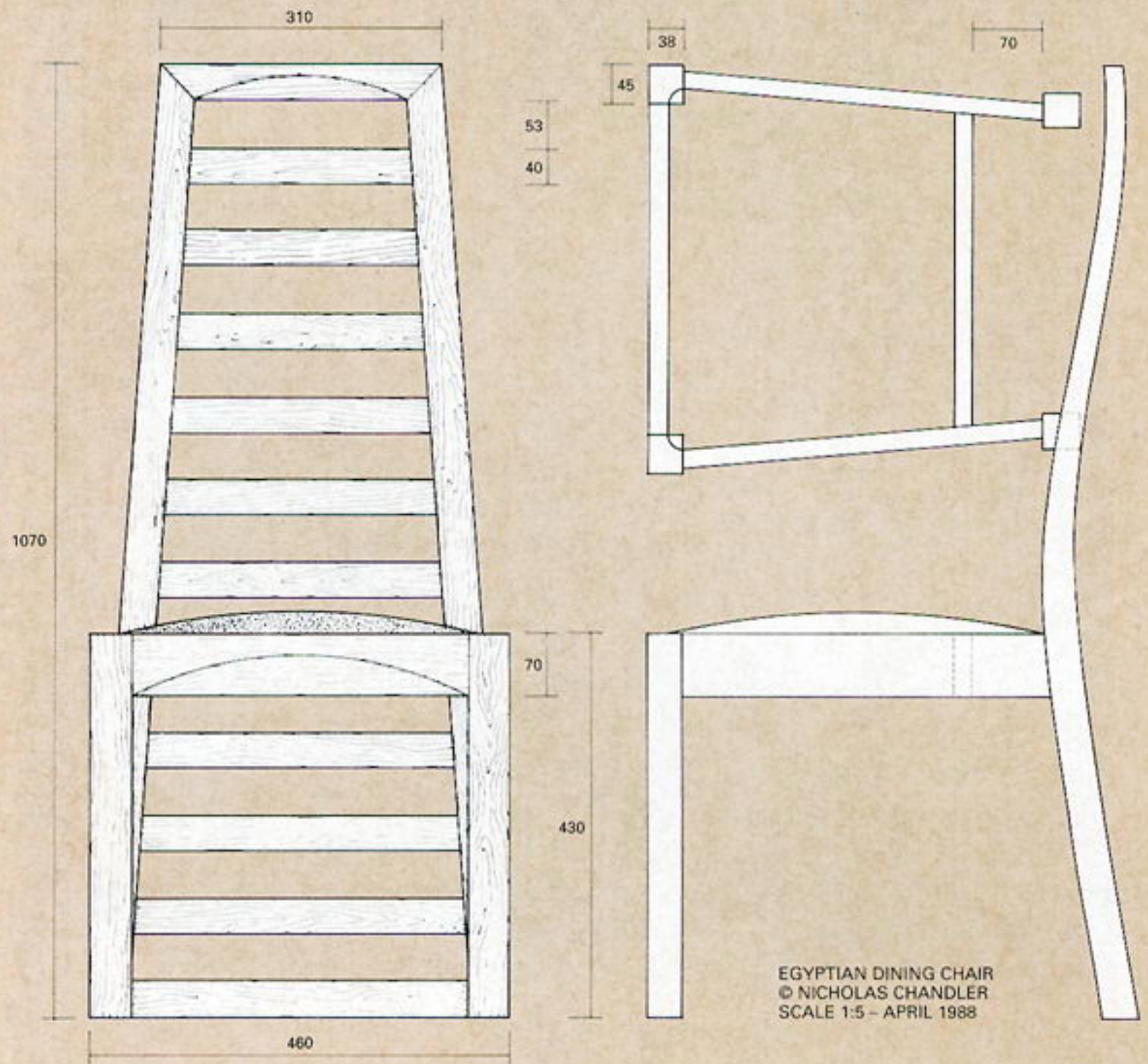
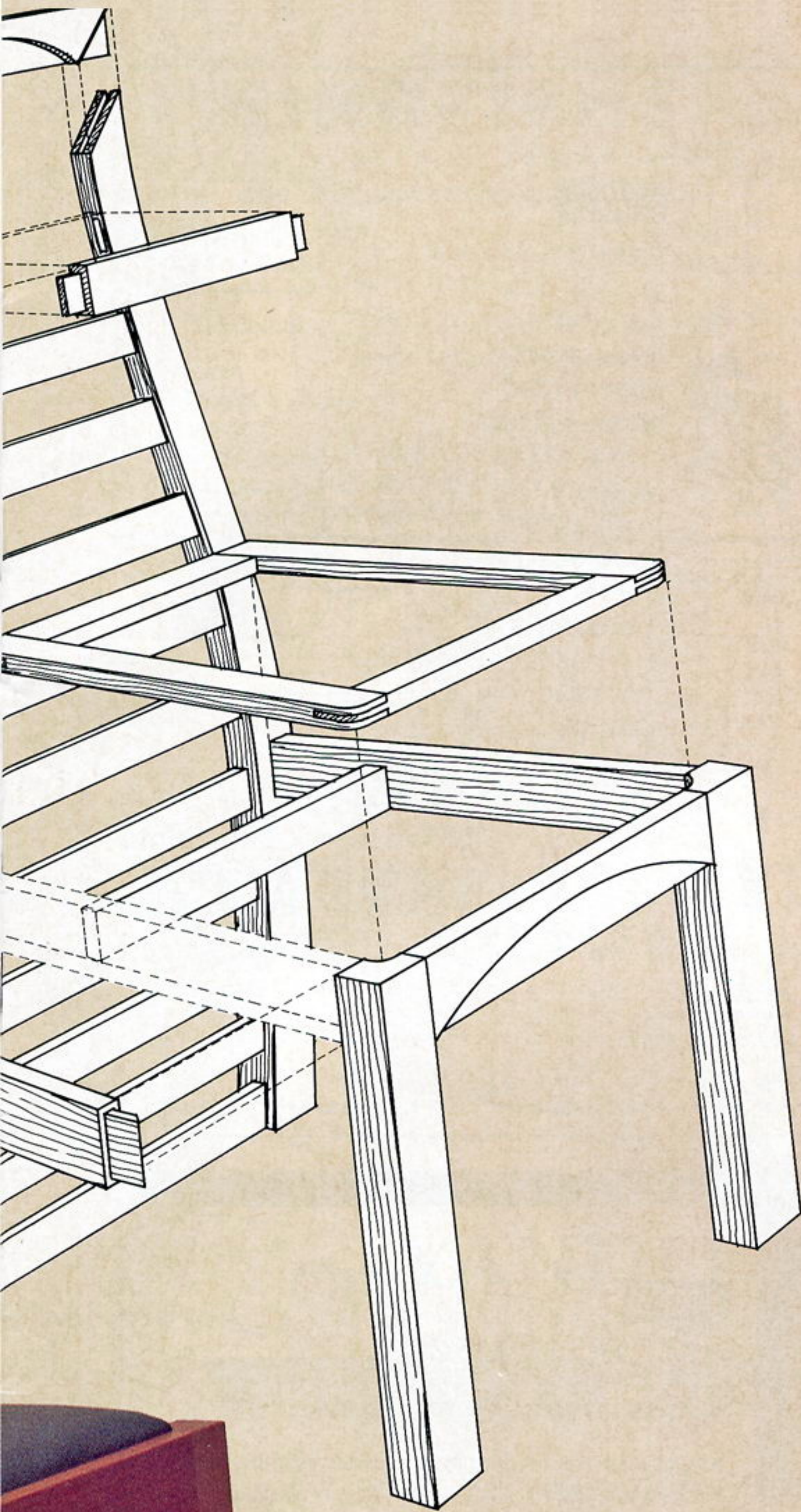
I began by drawing round a 1/8th scale model man with moveable limbs in a sitting position. I accepted that the height of the seat would be around 405-430mm (16-17IN) and the back to lean at 5DEG. I made the back shape to follow the contours of the model's back.

The side rails and front legs were to have a 'four square' appearance. I could see from the front view drawing of the chair back that the back of the seat would be narrow, so I splayed the side rails to the front legs. The feet of the front legs would then line up with those of the back frame.

I hate using stretchers on chair legs unless they are aesthetically necessary, so I didn't.

With the design drawings approved by the client I next made a full





EGYPTIAN DINING CHAIR
© NICHOLAS CHANDLER
SCALE 1:5 - APRIL 1988

FIG 1
Front view of the chair giving overall dimensions.

FIG 2
Side and top view of the chair.

sized chair in pine. This not only produces templates and jigs and shows the best way of going about the job, but also shows up any design faults that may not have been apparent on the drawing board.

I was surprised by the model. The chair had looked so majestic on paper but the model resembled a souped-up deckchair. There were line errors – the back legs needed to be tapered towards the top and reduced in width; the rungs in the back needed to be narrower and curved to improve comfort.

When sitting at a dining table many people tuck their legs under the chair or even curl their ankles round the legs. When I tried this sitting in my chair I found the lower edge of the front rail cut into my calves. This was corrected by cutting out a hyperbolic arch in the rail with a compass plane. Having created the feature, I repeated it on the top back frame member and the back of the bottom frame member to make it look less chunky.

It is better to do all your thinking at the drawing board and make your mistakes on a mock-up rather than trying to think through problems and rectify mistakes while you are making the finished article.

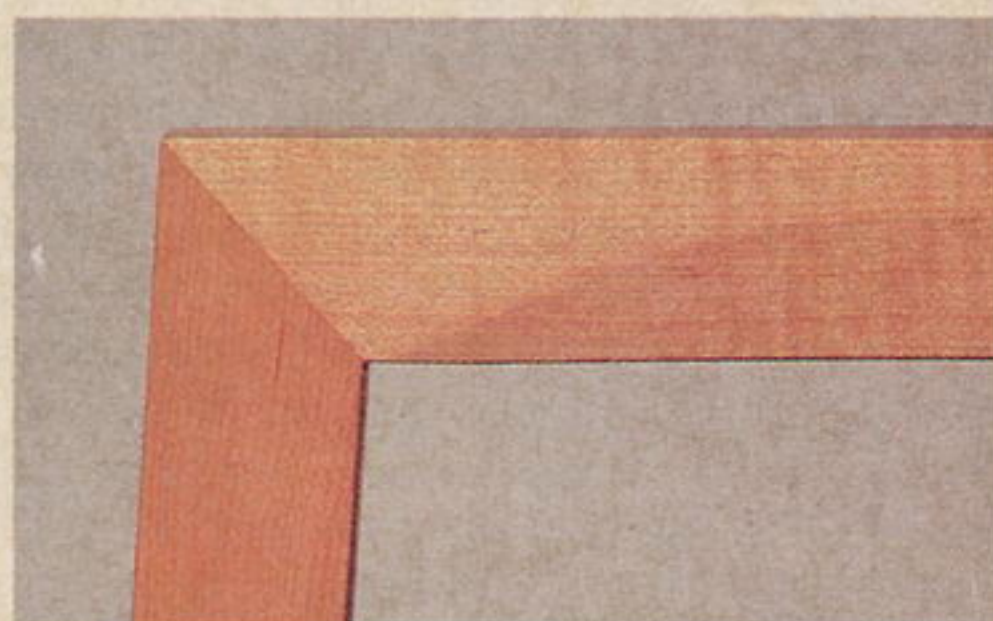
MAKING THE CHAIR

Start by cutting out all the pieces, preparing them to size using the cutting list and FIGS 1 and 2, and cleaning up. When cutting out the back legs (FIG 3) keep the waste pieces as they will be useful for packing when sawing and mortising later.

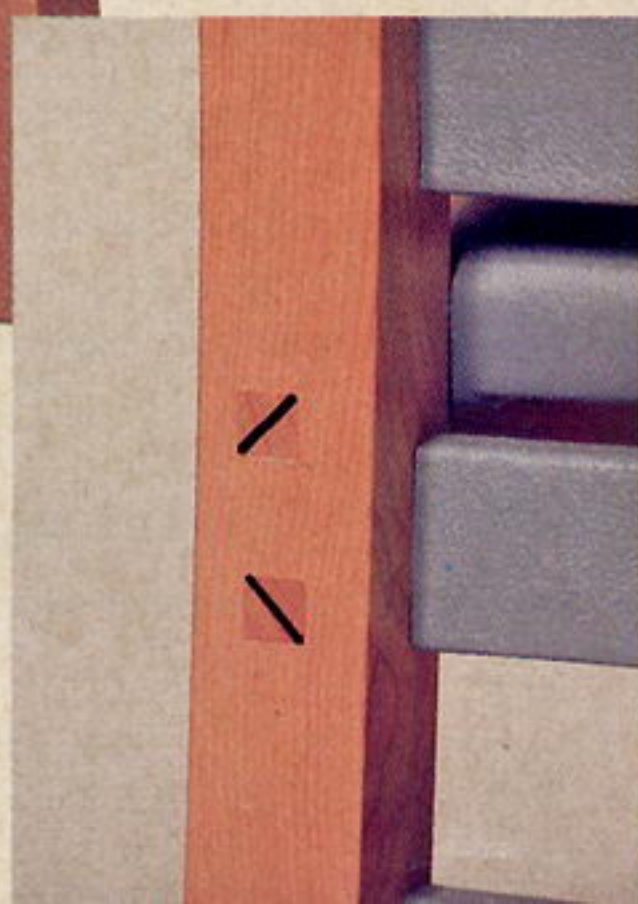
There are 204 mortises to be cut in six chairs (34 per chair) so I recommend the use of a mortiser or router for this. Using a power tool also means you need only mark the start and stop points of the mortises as the side fence controls the position from the edge of the wood.

Cut the mortises in the front of the back legs to receive the side rails first. The leg will have to be held with tapered battens for machining as it is tapered.

Tenons can be marked out and cut by hand but, again, a spindle moulder makes the job a lot easier. ▶



Above. Top rail to back.
Left. Seat to back.



Because of the shape of the back frame, each rung is a different length. Accurate marking out and cutting is essential or a glue line will show on this light coloured wood. I used a full-sized frame fixed to a back board as a jig so each rung could be accurately marked out and tested for a perfect fit.

With all the rungs cut out they are covered with leather, which is carefully trimmed back to the tenon shoulder line and glued on. There is a special adhesive for leather called Tenaxatex. It is recommended for use watered down 10 to 1, but I found five parts water to one part glue better. Or else PVA watered down 50/50 is fine.

The top rail of the back frame is a mitred bridle joint to the legs. The angles of the mitres are not 45DEG, but 46DEG and 48DEG to allow for the splay of the legs. The bottom rail is a straightforward stopped and shouldered tenon.

I marked out the arched depressions on the front rail and the two back rails by bending a steel rule. It was held at each end and at a third point in the centre of the arch. The depression can be cut out with a compass plane or spokeshave.

CRAMPING UP

Fit the whole back frame together dry and cramp it up so you can see where the cramp blocks will go and that the cramps are set in the right positions. When you are ready, glue it up and cramp.

Now make the front leg frame. The front rail is fitted flush with the front legs. I hate shoulders there as they catch the backs of the legs. Fit the legs and rail together dry as before, then glue and cramp up.

The side rails have angled tenons at each end (FIG 4). Where they meet the back frame I used twin through stub tenons wedged diagonally with ebony (FIG 5). This is a feature which is not only mechanically strong at a critical point on the chair, but also provides a visual 'pull' of the side rails into the back frame. The ebony gives an impression of leather thongs that would have been used by the Egyptians for binding furniture together at joints.

Apply the finish now, before making and fitting the leather seat. The



CUTTING LIST

finished sizes in mm, (inches in brackets)

Back legs x 2		
cut from	1200 x 200 x 45	(47 3/4 x 8 x 1 3/4)
Top rail	310 x 40 x 20	(12 1/4 x 1 5/8 x 3/4)
Bottom rail	410 x 50 x 38	(16 1/4 x 2 x 1 1/2)
Rungs x 10		
various lengths		
up to	460 x 40 x 20	(18 x 1 5/8 x 3/4)
Front legs x 2	420 x 45 x 38	(16 5/8 x 1 3/4 x 1 1/2)
Side rails x 2	425 x 70 x 20	(16 3/4 x 2 3/4 x 3/4)
Front rail	460 x 70 x 20	(18 x 2 3/4 x 3/4)
Seat frame		
cut from beech	50 x 25	(2 x 1)

Leather supplier: Connelly Bros (Furriers) Ltd, Wandle Bank, Wimbledon, London SW19 1DW. Tel: 081 542 5251.

Adhesive supplier: Williams Adhesives, 274 Argyle Avenue, Slough, Berkshire SL1 4HA. Tel: 0753 24343.

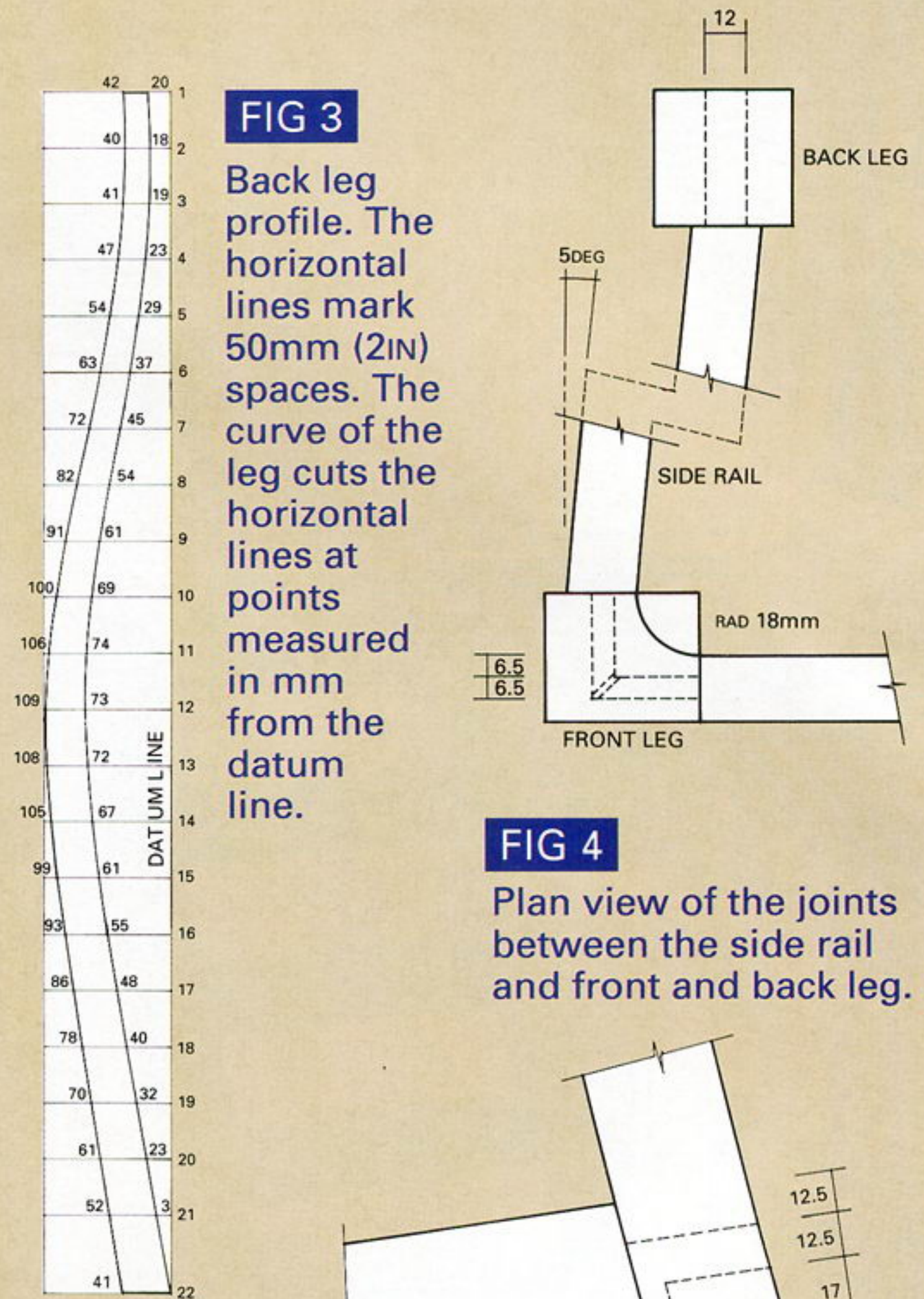


FIG 3

Back leg profile. The horizontal lines mark 50mm (2IN) spaces. The curve of the leg cuts the horizontal lines at points measured in mm from the datum line.

FIG 4

Plan view of the joints between the side rail and front and back leg.

FIG 5

Side view of the through stub tenon where the side rail joins the back leg.

leather cladding on the rungs must be carefully masked off when applying finish to the back frame, so make sure it is. I have experimented with various finishes from Danish oil to pre-catalysed lacquers and water-based cellulose. Your choice will depend on personal taste and the use or abuse your chairs are likely to get. A waterproof coating is advisable if sticky fingers are likely to come into contact with them.

The seat frame is made from beech, using bridle joints at the corners. It should be made 5mm (3/16IN) smaller than the space it fits into. The frame is upholstered using hessian webbing which is tensioned tightly over the frame and tacked underneath. On top of the webbing use 38mm (1 1/2IN) upholstery foam, or 25mm (1IN) of upholstery foam topped with 12mm (1/2IN) of soft foam if you prefer a softer seat. Cut the foam to size and chamfer the top edges. The seat is covered in the same blue leather as used on the frame rungs. It is tensioned evenly over the foam and tacked to the underneath of the frame.

It rests on a rail fitted between the side rails, 70mm (2 3/4IN) forward of the back frame. The rail is fitted flush with the undersides of the side rails and 20mm (3/4IN) down from the tops of the rails. The seat is supported at the front by recesses cut in the inside corners of the front legs (FIG 2) □

Nicholas Chandler, Woodpeckers, Rackenford, Tiverton, Devon EX16 8ER. Tel: 0884 88380.