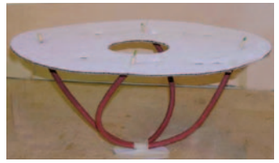
Sculpted Pedestal Table

Furniture maker **Charlie Batho** outlines the challenges of meeting a special commission

When a long-term client of mine asked me to visit his friend to get ideas for a table he wanted to commission, I didn't know what to expect. The table proved to be as impressive and exotic as its surroundings. Amid wall-sized canvases of reclining nudes the Art Deco oval-topped console table had a starburst-like veneered top in highly figured wood. The alloy base was curved like the stand of a model aeroplane, all streamlined and sculpted in the best tradition of Deco.

Close inspection showed that it was made by Chalon in Paris in 1925. According to the owner it was intended to be the first table of many but that the cost of making the top was so prohibitive that the project was abandoned. I priced for a smaller version using zebrano and burr elm for the top. The base was to reflect the one I'd viewed, but would have a steel skeleton clad in hardwood and spray painted silver. However, my client wasn't convinced that would be sufficiently rigid to be used as a dining table.



Pic.1 **An early model for the table Charlie Batho built (below)**

So began a six-month voyage in search of a suitable design for the base. The client had clear ideas what he did and didn't want – only there were so many versions that it was difficult to focus on any one of them. The process included making models using electrical flex and cardboard (Pic.1) to illustrate tilting and interlocking hoops and all shades of cat's cradle in between.

When we were given approval for one such of these I had it drafted on the 3D modelling package Solid Works. Sadly the detailed images met with something less than approval from the client who now wanted to head in a completely different direction. Not wishing to incur more expense on 3D modelling, we did some 2D drawings of an eccentric pedestal, which I submitted to my client. I was most surprised to be given the go-ahead. At this stage I could/should have had the new design modelled in 3D but decided against it. After all, how hard could it be?

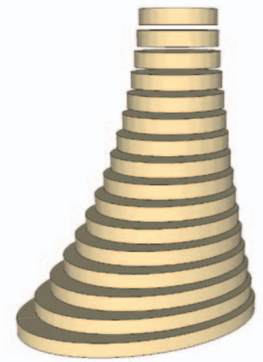
Veneered top

The marine plywood top was shaped and lipped with mahogany without too much incident before being despatched to our veneerers for the really hard bit. Most of the time they produce contract furniture for hotels and offices, but I've been working with them for years, during which they've helped me out.

I can do a bit of basic veneering but there was nothing basic here. For this project to work financially there could be no rigid timeframe. It would have to be fitted in around our bread and butter jobs. The veneerers took the same approach, and then some. As the burr elm oval is off centre, every zebrano radiation is different and they each need a template made before being cut.

Three months later the top had hardly got going, but by now we had started on the base. I had decided to make it out of solid boards rather than using jointed hoops. The grain would be more consistent and I reckoned there would be less work involved. Nesting the ovals inside one another (and cutting them out with a jigsaw) would help to minimise waste, and in the end we only needed three 8ft boards, each made of two boards edge jointed together (Pic.3). I chose American white ash for this job as the cost of solid zebrano was prohibitive. The heavy figuring of ash could, with a bit of staining and a little bit of luck, hold its own with the zebrano (see boxout on following pages).

Fig.3 The stack of hoops for the base



Pic.2 **Drilling the steel plate that fixes the base to the top (above left), and planing the part-assembled base (above) for the next layers to be glue in place (below)**

Shooting edges

Usually when we make worktops we shoot the edges on our 8ft Dankhaert planer. We set the outfeed table so that we get a nice little hollow between the boards. You just raise the outfeed table by a tiny fraction (trial and error) and you get a slight hollow. We were looking for about 1.5mm hollow over the 8ft boards.

We normally biscuit joint

Blocking

How to join boards

I had hoped to buy some cutters that could fit into one of our spindle blocks but could not find any. There were one or two purpose-made blocks with disposable cutters available that could joint 48mm stock but none of them were cheap.

After much consideration I plumped for the most expensive option, the Trend Glue Joint Cutter 23 at £215+VAT (above).

The other option was the CMT version at £155. With an edge joint like this there needs to be a perfect match otherwise the mating surfaces won't bond or the face side won't be flat.

My experience with Trend products (trend-uk.com) led me to believe that a perfect joint could be achieved using the DC1 - that's not to say the CMT wouldn't do the same, but I wasn't prepared to take the risk.

Pic.3 With careful nesting the hoops were cut from three large ash boards (above). Once they had been CNC'ed to shape they were stacked up in threes. Charlie used abrasive stuck down on a saw table to level the stack

Pic.4 Routing the hoops roughly to shape with a template (left) and using a power planer (above) to smooth the base. In the end a disc sander proved to be best option. Charlie used the narrowest part of each hoop as a guide for depth and never went below that point

What wood?

Pic.5 There are similarities in texture and grain between ash and zebrano, so with some stain Charlie was able to make a zebrano-style base to meet a budget that called for American ash.

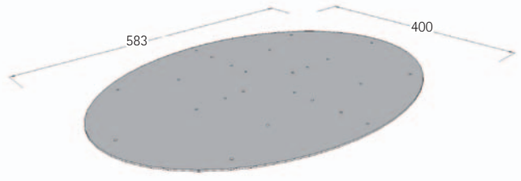
them to keep them flat when cramping. Not knowing exactly where the ovals would fall on the jointed boards and not wishing for the pedestal to be peppered with beech ply biscuits, I decided to invest in a reversible glue block for the spindle moulder.

Edge jointing

Having surfaced and thicknessed the planks it was time to put Trend's Glue Joint cutter to the test (see boxout previous page). Aside from having no instructions relating to this product and it taking a long time to get just right, the joints were really impressive - nicely interlocked and flat as a billiard table. For the record the block needs to line up exactly in the middle of the board. You lose about 4mm as you pass the board through. The mating board is, as the name suggests, passed through upside down. We used PVA glue to join the boards as its low viscosity allows the excess glue to work its way out of the joint and hence allow a close-fitting joint with a negligible glue line.

From my drawings I was able to work out that we needed 16 oval sections of diminishing size. Each ascending oval has an X and Y axis corresponding with the widest part of the oval beneath it once it has been angled. Not having a 3D model this last assumption was a bit of a leap of faith.

Fig.2 The steel connecting plate



The steel plate is screwed to the base and to the underside of the top. It is 2mm thick

Rather than make up 16 oval shaped hoop templates I sent my drawings to a CNC router-equipped workshop. This method precludes the need for templates and allows for an economical use of the wood as the hoops can be closely nested within one another, with axis reference marks on one face.

CNC machining

It was hoped that the CNC machining could create the variable tapers on the sides of the hoops but this is beyond the scope of the machinery at the moment. There are still some jobs that only the human hand and eye can perform. We actually ended up routing some of the hoops ourselves from a template (Pic.4).

To create the two different radii on the long dimension of the base each ascending oval needs to be displaced by an exact amount. Referring to the original 2D drawings and using the axis marks we were able to create a stepped version of the pedestal. The hoops were then glued up in groups of three, with PVA. Once glued up these groups were found to have slight distortions and we had to flatten them with a jack plane and our 'patented sandpaper flattener' before the final assembly. This involved gluing strips of sandpaper to the bed of the dimension saw and then doing some serious rubbing.

The next part of the process had received much long and hard thought in the preceding months. How to eliminate the steps and produce a beautiful smooth curve?

Having abandoned the idea of trying to machine a taper using the bandsaw or spindle moulder as too complicated (given the change in taper as you move around the oval) I had fixed on the idea of paring off the steps using an adze.

Using an adze

We had a stand at the Bentley Wildfowl Woodfair in late September, where we sell items made from offcuts. I like to ogle the old tools and wonder what they might have been used for. This time I bought a lovely old Braid No.4 adze. Not familiar with these tools I took advice from a neighbouring stallholder and tool seller. "Wear stout boots," he said, rolling up his trouser leg to reveal a six-stitch scar on his shin.

Wearing my best rigger boots I set about the base – gingerly. One slip and I would destroy the geometric line not to mention my much-needed lower limbs. A more skilled user would have made a better fist of it but given the weight of the adze and the way the curve dips away sharply, I had to admit defeat and resort to the trusty electric plane.

Removing excess

We took off as much excess as we dared using this method and then it was over to abrasion. I had it in mind to use a belt sander but as I only own a crappy Power Devil model that whimpers and wines, kicks up a lot of dust and as many sparks – the joys of cheap tools – I asked around to borrow a decent one. The metal polisher on the estate took a look at the task in hand and suggested using one of their heavy industrial air-powered disc sanders. Using 80 grit paper and a firm hand it was possible to remove a lot of stock quickly. The machine does rather take over, pulling you this way and that so that complete concentration is needed.

Six or so hours later and a sleek pedestal emerged. It was amazing the way the curve suggested itself. By angling the polisher first one way and then another and always working to eliminate but not pass the glue line, a geometric shape was achieved. The stepped hoops were used as a 'depth gauge', as we never sanded deeper than the 'narrowest' part.

I can't say I slept well that night what with the dust inhaled and the aching limbs, but there was a feeling that the sacrifice had been worthwhile and the goal reached. By this time the top had finally been veneered. Keeping the top rigid had been very much in the original design brief. I decided to use a metal rather than a wooden plate to firmly attach the base and top. Aside from the strength, the 2mm plate becomes almost invisible. Finally after much blood, sweat and tears we had hopefully created a piece of furniture that will be a talking point for years to come.

Charlie Batho's Kiwanda Woodworking is based in Sussex (kiwanda.co.uk).

Fig.3 The table