

Art Nouveau coffee table base – part 2

In the final part of this article, Dennis Zongker applies the marquetry decoration to his Art Nouveau coffee table top

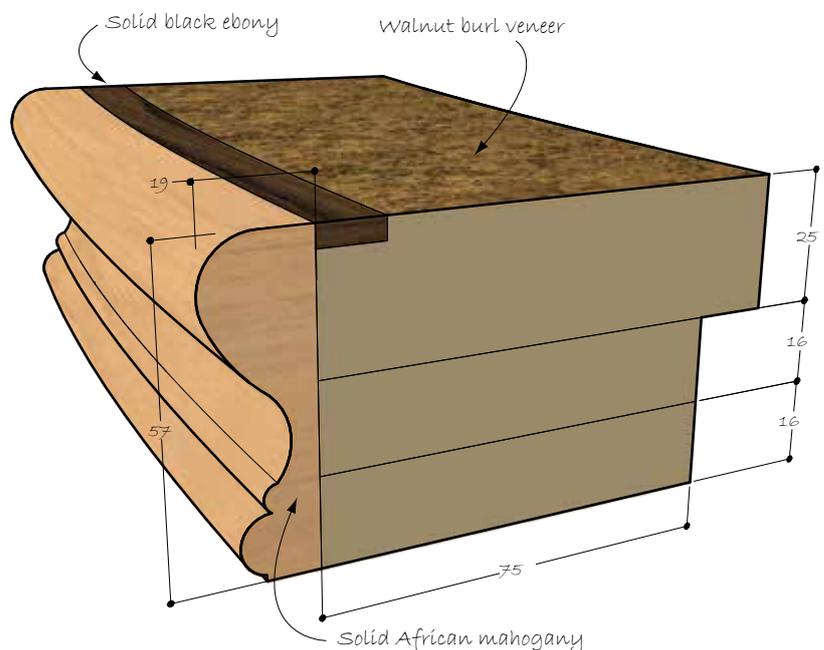


PHOTOGRAPHS BY DENNIS ZONGKER

In the first part of the article I showed how to carve the Art Nouveau table top. Here, I'll talk about making the coffee tabletop, which has an elliptical shape. The elliptical shape of the top really helps to add to the overall Art Nouveau style.

The marquetry on the top is of a scene of a lake and trees reflecting off the water. When creating the marquetry design, a lot of research went into finding the right veneers to achieve a natural lifelike picture. I used many different styles of veneers and combined them together. I will show you how I cut the packets using two different styles and combine them together.

After the marquetry is completed, the next steps are to bend the solid ebony (*Diospyros spp.*) inlays, then rout and inlay them into the top. I decided to use solid mahogany (*Khaya ivorensis*) for the top edges. To finish and stain the coffee table, the goal is for only the base and top edges to have a dark colour that still show the beauty of the wood grain. I found this was a very enjoyable piece of furniture to make and I hope you do too.



The veneer

For cutting out the top you need to use a piece of veneer core plywood measuring 25mm thick x 1,220mm wide x 2,438mm long and add a side piece for the width at 254 x 330 x 2,133mm. You can then rout and glue in a loose spline measuring 6 x 25mm wide x 2,133mm long to joint the two pieces together. Next, cut out the 1,525 x 2,032mm elliptical shape with a shop-made router jig. Once you have the top routed out, you can use it to layout the paper to draw in the marquetry design.

The veneer I used for the sky and water is called 'freak maple burl veneer'. To lighten up the water reflection side of the marquetry, I brushed on Klean Strip A&B wood bleach solution on both sides and hung the veneer off the ground, from a ladder so it will dry evenly overnight. After the veneer is dry from the bleach, seam the two veneer pieces together for the sky and the bleached water. Use blue painter's tape on the glue face, then flip it over to use gum tape to seam together on the face side of the veneer. This won't be seen until after the marquetry has been glued to the substrate.

Using a large piece of tracing paper, the same size as the top, draw in the sand, bank, grass and the horizon lines. All of the veneers will be cut using a scalpel. This method is called the 'window method' for cutting marquetry.

The first two pieces to be cut and fitted together are the sky and the water veneer. Using the tracing paper horizon lines, cut out

the bleached water veneer using a scalpel. Keep the blade as straight as possible and take two or three passes at approximately 25mm strokes until the water line is cut out, then place the bleached veneer over the top of the sky veneer and tape them together using blue painter's tape. Use your scalpel and follow the veneer edge to cut out the sky veneer using the same method of cutting two or three passes using light pressure, letting the blade do most of the work.

Next, cut out the grass section of the tracing paper and place it on top of some myrtle burl veneer, cutting out each section using a scalpel. Using the tracing paper allows you to see through to the veneer, which means you can select the best veneer pattern and colour for the marquetry scene.

Once you have cut out the background grass veneer, move on to cutting out a darker shade of green veneer that sits directly underneath the trees. By placing the darker patches of green on top of the lighter background grass veneer, use your scalpel and follow the edge of the veneer to cut out the waste veneer and insert the darker shade. Next, place the grass veneer over the bank veneer, which is a quartersawn timore, to where the grain direction will be in many different angles coming out of the grass to re-assemble the look of a realistic nature scenery. Continue to use the window method until the bank is completed along the whole edge of the lake.

For the sand of the island I used an arodire crotch veneer. This flitch of veneer

had a perfect brownish hue with light and dark shades, which gives it the realistic resemblance of sand on a beach. Again, use the window method to cut out the sand.

After you've finished cutting the island veneers, use painter's tape to keep all of the pieces together, then flip the island over and use water gum tape to connect all the pieces of the island. Then, flip it back over and remove the painter's tape.

Now to insert the grass, bank and sand onto the sky and water background veneer and tape it into the correct location. Using a scalpel, use the window method to insert the entire island into the background. The next step is to flip the entire piece of veneer over and apply the water gum tape.

The 'window method'

The window method is a technique that uses only a scalpel to cut the veneers. First, a template is used to draw a design onto the background veneer, then the template design is cut out from background veneer, creating a window. The window in the background veneer is then filled with another veneer, called the insert. Using the window method to cut marquetry takes a bit longer than other techniques, as there's a lot less preparation time involved. It's also a good marquetry method for cutting straight lines with a high degree of accuracy



1 Cutting out the top of veneer core plywood



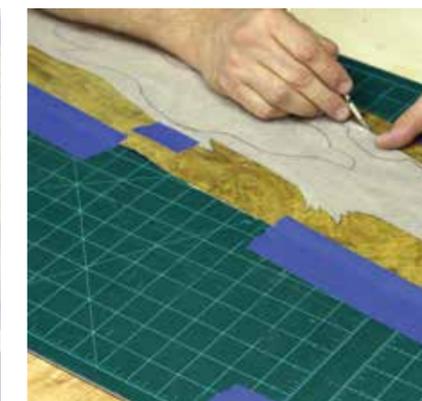
2 Hanging the veneer off the ground, from a ladder so it would dry evenly overnight



3 Using the 'window method' is a great way of drawing in the marquetry designs



4 Here I'm cutting and fitting together the sky and the water veneer



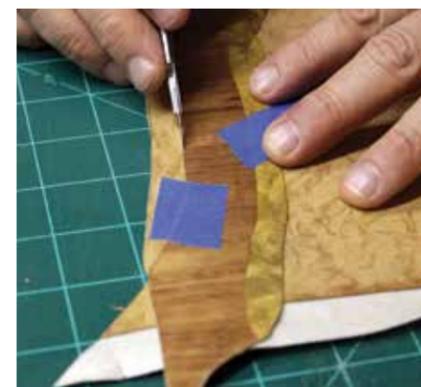
5 Cutting out the grass section of the tracing paper



6 Cutting out a darker shade of green veneer that sits directly underneath the trees



7 Placing the grass veneer over the bank veneer, still using the window method



8 For the sand of the island, I decided to use an arodire crotch veneer



9 Using painter's tape is an ideal method for keeping all of the pieces together



10 Flipping the entire piece of veneer over and applying the water gum tape

The packet method

The method I will be explaining for cutting the trees and oak leaves is very similar to the Boule technique. This style of preparing and cutting is easy to learn and is also an excellent way to produce several different copies with just one packet. For this large top there is a total of nine packets to produce and insert into the background veneer. I will be explaining this packet method for just one tree – the smallest single tree that is by itself.

To prepare the packet, cut two pieces of 20mm-thick plywood measuring 324mm wide x 405mm long. The plywood will be used as a cutting template and also as a clamping caul. There will be a total of five

different pieces of veneer measuring 324mm wide x 405mm long to equal one packet.

- Three pieces of laurel burl for the tree leaves
- One piece of ziricote for the tree branches and trunk
- One piece of scrap veneer for gluing the cutting template to that goes on top of the packet

Note – by purchasing three different flitches of laurel burl, each one has a different figure and colour to give the trees a natural appearance with light, medium and dark shades. Next, use a

cutting mat and a scalpel, then place the cutting caul on top of the veneer. Use the caul as a guide for the scalpel and cut out three different pieces of the laurel burl, then do the same with the ziricote and one with a scrap veneer for the template cutting sheet.

Next, brush hot animal hide glue onto the face of the veneer, then place a piece of craft paper to the veneer using a rag and pressing the paper to the veneer. Then, place the veneer in between the two plywood cauls and set a 35lb weight on top of the caul; this will have the effect of flattening the veneer while the glue dries. Repeat these steps for the remaining veneer and also the cutting template to the scrap veneer.

The reason for gluing the paper to the veneer is to flatten the veneer and prevent any chips or cracks while cutting on the scrollsaw. Hide glue is the best glue for this step because it doesn't soak very deep into the pores, is less brittle and doesn't dull your blade as quickly.

Nail the packet together by placing the four pieces with the paper face down and the template drawing face up. Place all five sheets on top of one plywood caul with a centre weight placed in the centre; this will keep the packet from moving. Start in the centre then nail outwards to the edges. Use a pair of needle nose pliers to hold the



11 Brushing hot animal hide glue onto the face of the veneer

small 12mm long 20-gauge nails in place and then nail through the packet and into the plywood caul until the head is flush with the template. Use a narrow slotted screwdriver to pry the veneer packet off the plywood caul, then place the packet upside down on a hard, flat surface.

Take side-cutting pliers and snip off the pointed tips of each nail leaving just a tiny bit of the nail protruding. Use a hammer to tap the snipped nails flush with the bottom sheet of veneer; this will create a rivet that holds the veneer packet together.



12 Flattening the veneer will prevent any chips or cracks while cutting on the scrollsaw



13 Use a pair of needle nose pliers to hold the small 12mm long 20-gauge nails in place



14 Take side cutting pliers and snip off the pointed tips of each nail, leaving just a tiny bit of nail protruding

Cutting the packet

To cut the veneer packet I use a 510mm variable speed scrollsaw at its slowest setting, which is 400 strokes per minute. I use an Olsen 125mm 2/0 jeweller's metal-piercing 56tpi scrollsaw blade and start by drilling a 1.5mm diameter hole in a few places where needed into the packet, then feed the blade through one hole in the packet. It's best to cut

out the centre pieces first and work your way towards the outer pieces.

After all the pieces have been cut out of the packets, place the pieces onto a piece of double-tack mounting film paper. Then with a scalpel, cut around the tree to remove the excess film paper.

To keep the tree flat, sandwich it between

the two plywood cauls with a weight on top and set aside while you complete the rest of the eight packets. Once you have all the packets complete, place them on the background veneer and hold in place with tape. This way you can take a step back and look at the overall top to make sure all trees and leaves are in their proper place before starting the next step.



15 It's best to cut out the centre pieces first and work your way towards the outer pieces



16 Using a scalpel to cut around the tree to remove the excess film paper



17 Once you have all the packets complete, place them on the background veneer and hold them in place with tape

Inserting the packets

The next step is to insert each completed packet into the background veneer. Use the window method for this, as explained earlier. After the waste veneer is removed, tape on each insert until the completed marquetry section of the top is complete.

Next, flip over the large piece of marquetry and use water gum tape to hold the entire piece together. You can then flip it back over again to remove all the blue painter's tape, and now the large centre piece of the marquetry is ready for gluing to the top substrate.

To glue the marquetry to the top, cut out an elliptical shape clamping caul at 20 x 1,270 wide x 1,778mm long. Then, using a paint roller, glue both the marquetry and the top with Titebond II dark wood glue. Next, place the marquetry veneer centred on the

top, but before you place it into the vacuum press bag, shoot in two pin nails through the caul into the substrate; this will keep the marquetry from moving around while the air pressure slowly tightens the bag to the clamping caul.

After the glue has dried overnight, take the top out of the vacuum press bag and remove the caul. The two pin nails pull out with the caul and the small holes can be filled with putty before finishing.

To remove all the paper and water gum tape, I use my Festool ETS 125 EQ random orbital finish sander with 150 grit abrasive. Once the paper is removed, lightly hand sand the entire top with 150 grit abrasive.

To even out the veneer around the outside edge of the marquetry I use the same clamping caul and clamp it centred to the

top, then use a router and a template guide with a 12mm diameter straight cutting router bit. I set the router bit to cut flush to the top then flush trim the marquetry veneer edge even around the clamping caul.

For the outside border, use a walnut burl. To cut out the veneer I make a cutting clamping caul out of 25mm thick plywood. The caul is the same radius as the marquetry edge and hangs over the outside edge of the top by 6mm. I use this border caul to cut out the walnut burl using the caul as a guide on top of a cutting mat and using a scalpel. After you're finished cutting out the veneer, use the caul to glue and clamp down the veneer to the border around the top, gluing on one piece at a time. Let the glue dry for about three hours before moving on to the next corner.



18 After the waste veneer is removed, tape on each insert until the completed marquetry section of the top is complete



19 To remove all the paper and water gum tape, I use a Festool ETS 125 EQ random orbital finish sander with 150 grit abrasive



20 Using a router and a template guide with a 12mm diameter straight cutting router bit



21 Using the caul to glue and clamp down the veneer to the border around the top, one piece at a time

Ebony inlays

The next step is to rout in the 10mm wide x 3mm deep plough for the solid ebony inlays, which go on the outside of the top and one that splits the walnut and marquetry veneer seam. By using the same clamping caul and a larger template guide with a 10mm straight cutting router bit, rout in the walnut and marquetry veneer seam. Next, using a rabbit router bit, rout in the plough around the outside edge of the top at 3mm deep x 10mm wide. To make the radius ebony banding, bend three layers of 3mm around the clamping caul and outside edge of the top, then glue the bent ebony banding into the ploughed, which are routed into the top.

With a hand-held cabinet scraper, shave

off the excess ebony to where it is flush to the veneer. Next, to make the top thicker, cut out two elliptical rings at 16mm thick x 75mm wide – these go on the bottom face of the top using the same router jig that was used to cut out the top. Then glue and clamp the two 16mm elliptical rings to the bottom outside edge; this will give the total top thickness at 55mm. To glue the solid mahogany top edges, cut 3mm thick x 70mm wide strips. You will need six pieces for each of the four wraps needed to make the 29mm-thick x 1,828mm long top edges. In all, a total of 24 pieces are needed to complete the top mahogany edge.

Start by gluing only the six pieces together but not to the top. This way, after the glue

dries you can remove the wrap and glue up the other three wraps. Next, mitre each completed wrap together to fit around the top edge, using large strap clamps and fitting each mitre together as a dry fit. Then remove the four edges and roll glue onto one top wrap and strap clamp one at a time until all four wraps are glued to the top edge. You can then use a flush trim router bit to rout the top edge flush to the top on both sides of the top and bottom. Next it is time to clean up the top edges using a cabinet scraper. Use a profile router bit and rout in the top edge profile. The last step is to hand-sand the top edge clean and smooth using 150 grit abrasive. The 150 grit paper helps the stain go on evenly.

PROJECTS & TECHNIQUES

Coffee table base – part 2



22 Bending three layers of 3mm around the clamping caul and outside edge of the top



23 Using a hand-held cabinet scraper to shave off the excess ebony to where it is flush to the veneer



24 Strap clamping one at a time until all four wraps are glued to the top edge



25 Cleaning up the top edges using a cabinet scraper

Finishing

The goal for staining this table base and the top edge is to have a dark colour that still shows the beauty of the wood grain. I start off by using a compressed air nozzle and a rag to clean out all of the dust. Next, I brush on a conditioner that will fill the open pores like a sealer; this gives it a more uniform colour. I then use a walnut colour aniline dye, which penetrates deep into the pores.

The next step is to stain over the dye with a dark walnut lacquer-based stain. I do not wipe off the stain, but instead use a large artist's brush and brush the stain off. While doing this, clean the extra stain out of the brush using a clean dry rag. I then repeat these steps until the base is even in colour.

The very last finishing step is to spray three coats of satin pre-catalysed lacquer over the entire base, including the bottom of the legs and runners. This will help seal all the pores, which will allow less expansion and contraction as the weather and seasons change.

For the finishing of the top I use the same finishing steps as the legs, only I spray five coats, then wet sand with 320 grit to flatten the top. This step will remove approximately four dry coats of finish. I then add three more coats of finish sanding in between each coat with 320 grit abrasive. After I spray on the last coat, I don't sand and let it sit overnight before moving. The Art Nouveau coffee table is then complete. *F&C*



26 Brushing on the stain over the aniline dye



27 Using a walnut colour aniline dye, which penetrates deep into the pores



28 Spray three coats of satin pre-catalyzed lacquer over the entire base



29 Spraying on the last coat before letting it sit overnight



30 The completed Art Nouveau coffee table base