


Extended Eating

A butterfly extension dining table with a pedestal base.

By Glen Walling


This table was born from an inability to find an extension table that was rectangular, and had a pedestal base. At the time the trend was for oval tables or square tables with corner legs so I decided to try and make one from scratch.
I was unable to find plans either on the internet or in the local library so I had to piece together the design features from other tables I had looked at. With some fiddling and on the run alterations I eventually managed to put together something that works and I think looks OK.
This was the project that got me interested in making things out of wood and I teamed up with an acquaintance who had more experience and equipment than me. Over time we developed a firm friendship and did a lot of work together. Unfortunately Glenn passed away in June 2004 before the table was completed so he never got to see it finished.
My first prototype table showed both my inexperience and some major design flaws. The table shown above is actually my second prototype but this worked well and is the design I will use for the next one to be made at a later date. I made this table out of a pine packing crate kindly donated by some friends after they had a new pump and solar panels delivered in it. The first one was made out of old pallets we got from the rubbish dump. The next one will be made out of hardwood, either Jarrah or Wandoo that was a shearing shed floor in a previous life.

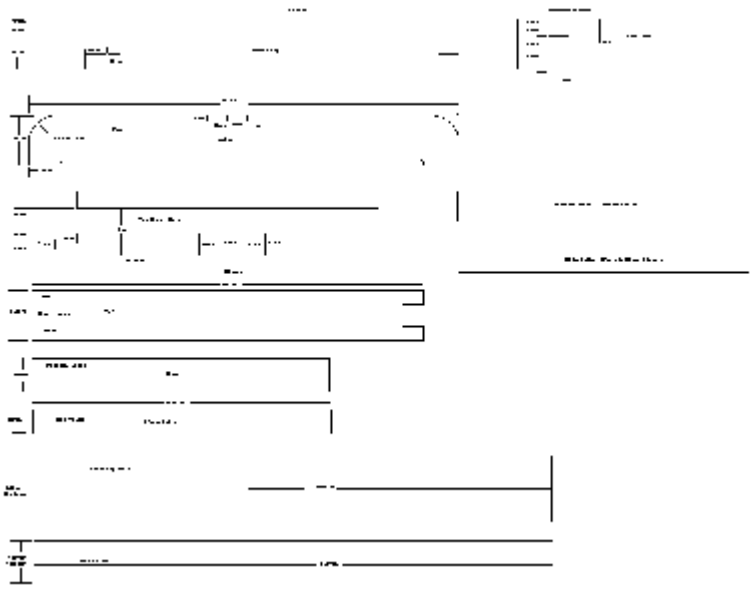
Materials and Preparation:-

This table was made from an old pine packing crate that was full of nail holes knot holes and cracks. This sort of timber is not the easiest to work with, but the flaws add character to the finished project in my opinion.
After taking the crate apart I was surprised by the amount of timber I recovered.
Mostly it was 6"X 1" boards 11 feet long and 3 1/2" X 2" X 5 1/2 feet.
All of the timber was cut slightly over length before Jointing and planing.
The boards to be used for the table top were wet and then clamped together for some time to try and remove the worst of the bow and warp.

The boards for the table top clamped after wetting to try and remove warp.

Reasonably flat boards after being removed from clamps.

The stock was then jointed and passed through the thicknesser until the dimensions were 80mm X 40mm and the planks were 20mm X 145mm, square and flat.



Cutting and Plan:-

As I mentioned earlier I roughly cut most of the material before preparation.

Frame:-

Frame Top, Feet and Cross Piece X 2

Legs X 4 All cut from 80mm X 40mm

Hinge Mount Pieces X 2

Slides X 4 of each

Hinge Mount Pieces and Slides from 20mm.

Pedestal brace X 1 (I made this by laminating 3 planks together and then planing to size)

Top:-

154mm slats X 12

100mm slats X 2

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Ironmongery:-

Recessed Hinges X 2

Cupboard Hinges X 2
Case Latches X 4
Screws
The recessed hinges were difficult to find. None of the hardware stores I tried carried them or could find them from suppliers. I eventually managed to order them through my local cabinet maker.
The cupboard hinges are standard but I had to remove the hinge rivet and turn them around.
The case latches are to stop the table sections from moving apart.

The Base:-

After preparing the timber to size cut to proper length and mark out joints, channels and such.
I used a router to prepare all of the joints because I couldn't cut a straight line by hand if my life depended on it.
I also cut all of the joints a little small and finished them to size with a file and sand paper for a more precise fit being sure to mark the joints.
The joint between the top cross pieces and the rails was a little tricky because it did not go all of the way through the timber. I did this purely for cosmetic reasons so the joint was less visible.

The inside curve and rebate of the feet was cut with a 12mm straight router bit. The outside curve was cut with a cut off saw and rounded using a belt sander.

After cutting all of the base pieces I routed the outside edges of the legs and the top of the feet with a round over bit.

Once the shape of all of the pieces for the base I needed to fill the holes and cracks in the timber.
Because I was using recycled timber there was a fair number of these and I wanted to make them a feature instead of covering them up. I have used a number of different things to fill them with, with varying effects. Putty is very difficult to match exactly and unless matched perfectly I think looks a bit scruffy. I have tried filling the holes with PVA glue but it tends to remain milky. Varnish just keeps soaking into the timber and cores are also not the look I was trying for.

Instead I used hot glue. If applied carefully it cures completely clear, it is cheap and sands well. When I made this table I used a different brand hot glue which did not cure completely clear after having varnish applied as some I have used previously did.

It is OK for nail holes and small cracks but was a little milky when filling larger holes.
I then sanded the pieces down to 180 grit paper before assembly.

The Table Top:-

The table top was assemble as 3 separate pieces using biscuits.

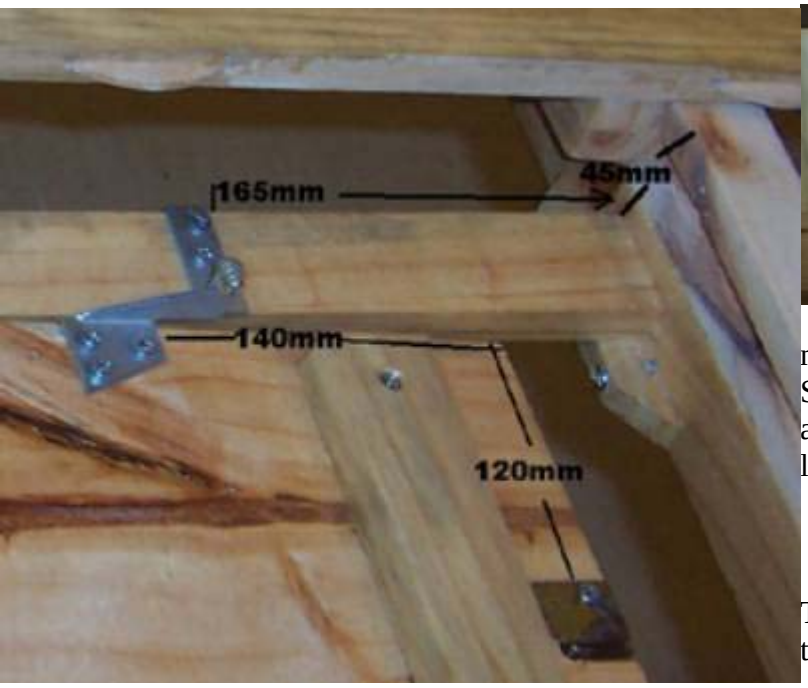
Because the table was made from packing timber the wood was back sawn which lends to wood cupping, for this reason I tried to join the wood with the grain rings in alternate directions. The end panels were made from 5 planks each and the centre panel from two 145mm and two 100mm planks giving two pieces 730mm wide and one 490mm (this is the centre piece). One end of each of the panels is then cut square.

The centre is cut in half and 6mm slots are cut using the router in both halves 120mm from either edge for the hinges, but only to the depth of the hinges not right through the wood. Once the hinges are fixed the other ends of all three panels are cut to length. This way the centre doesn't end up shorter than the ends. At this stage cut matching biscuit slots in the joining edge of the two ends and the centre inserts. Cut two slots to each flap of the centre for a total of four and glue biscuits into one end and the opposite edge of the centre. These are the locating slots for mating the table sections. Dowel or brass pins could be used instead.

Assembly:-

The first part to be assembled is the top section of the base. The rails are glued to the cross pieces so that the channels are facing inwards and positioned towards the top and the slots for the legs on the cross pieces are facing downwards. The rebates on the end of the cross pieces are to allow the slides on the top to move in and out as the table is extended. It is important to make sure the this is square and that the rails are true and parallel. When assembled clamp firmly until the glue is dry.

Prepare the slide by gluing the 50mm slat to the 30mm slat so you have an "L" shaped piece 40mm thick with a 20mm tail. Place the two end pieces of table top on a flat surface with the best side down making sure the join is aligned properly. Place the top part of the base centrally on the table top with the slides in situ making sure the ends of the slides meet at the join between the top panels. When everything is positioned as square and central as possible carefully mark the positions of the slides where they rest on the table top.
After removing the base fix the slides to the table top with glue and screws.
When the glue has dried try to slide the top onto the base from either end. You may find that it will not slide in easily and will require some sanding or planing to get the slides to fit and slide smoothly.
Mark the centre of the top rail and then measure 245mm either side of centre, this is when the centre extension will sit when table is open.



Slide the two end pieces together so they meet at the centre mark and fit the case latches to both ends. Separate the ends and insert the extension at the place marked and fit the matching latch parts onto the extension.

This is where things start getting a bit tricky!

The hinge mount pieces need to be set at such a height that when open the extension must rest flat and level with the ends and at the same time will allow the folded extension to turn over without hitting the rails.
On my table the hinge mount pieces sat 45mm from the top of the rail and on those the hinge was placed 165mm from the top rail. The other part of the hinge was 140mm from the hinged edge of the extension.
The hinge mount struts were set 160mm from one cross piece and 165mm from the other, the difference is to allow clearance for the biscuits.

The position of the pivot hinge folded down (above) half way up (left) and fully opened (right). Note the biscuit slots in the extension to align it with the ends.

A piece of scrap 100mm long and 110mm from the rail attached to the underside of the hinge strut for the folded extension to rest on. The small piece screwed to the rail is to help support the hinge strut. I did this because I was making this part of the plan up as I went along and wasn't able to mortice or dowel them in place.

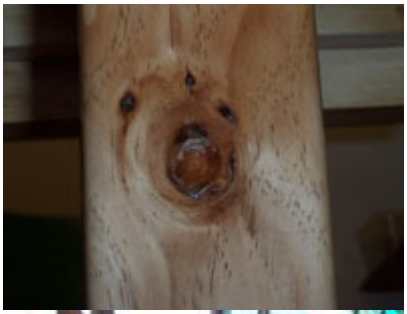
When the top assembly of the base and the table top are set up properly the top should be fairly level and flat. If they are not they need to be sanded flat and level. I would suggest sanding the with the ends mated and when they are flay sanding the extension to level with them. Why? Because the table is more likely to be left without the extension in place it would look better if they are well mated whereas the extension is only used occasionally so any difference is less noticeable (there was very heavy rain between when I assembled the top panels and fitted them to the base. The change in weather cause the panels to warp badly and though I was able to flatten them with clamping the centre piece remained quite warped need more sanding to get flat than the ends. There is a cross piece screwed to the underside of the extension, this was to try and remove some of the warping).

Once I had the table top all set and locked in place I then rounded the corners of the top (I used a dinner plate as the radius) and routed the edge with a roman ogive bit.

Now it is time to put it all together!

Firstly I assembled the base dry to make sure it would all go together well. Then I picked a section of veranda that I knew to be flat and level. Using PVA glue I joined the legs to the feet then placed the cross piece in place and attached the top assembly to the legs. Because the joints are made so close fitting the table could stand free as it was but due to my lack of skill the base was not automatically level and square. With the assistance of a spirit level and square this was rectified and the whole thing was clamped until the glue had dried. It is more important to get the top of the base level than that everything is absolutely square.

When the base was finished I looked at the gap between the legs and thought that it looked a bit bodgy so I decided to fill the gap between the legs and to cover the end of the cross support above the feet. I measured the gap between the legs and cut pieces to fill each end. I cut them slightly over size and sanded them down to fit so as to get as an exact fit as I was able.



Finishing:-

After assembling all of parts of the table I took them apart and removed all of the hinges and such. I filled all of the holes and cracks with hot glue as I stated before. (If I ever find out which brand it is that is truly clear I will alter this article to name it.)With

the base and the underside of the table top I sanded them down to 200 grit sand paper and applied 2 coats of Bondall's Monocel Gloss polyurethane varnish.

Above is the same knot as shown earlier when being filled
and sanded, this is after 2 coats of varnish.

It is important not to apply varnish to the channels and slides
other wise the tops will not slide smoothly.

With the table top I put a lot more care into it as this is the thing that most people see and it also suffers the most punishment. I sanded them back to 150 grit then applied a sealer of 75% Monocel and 25% turps. When the sealer had dried I sanded down to 320 grit and applied 5 coats of Monocel Gloss sanding with 320 grit between each coat. After it was all sealed I replaced all of the hardware and the table was then put into service.