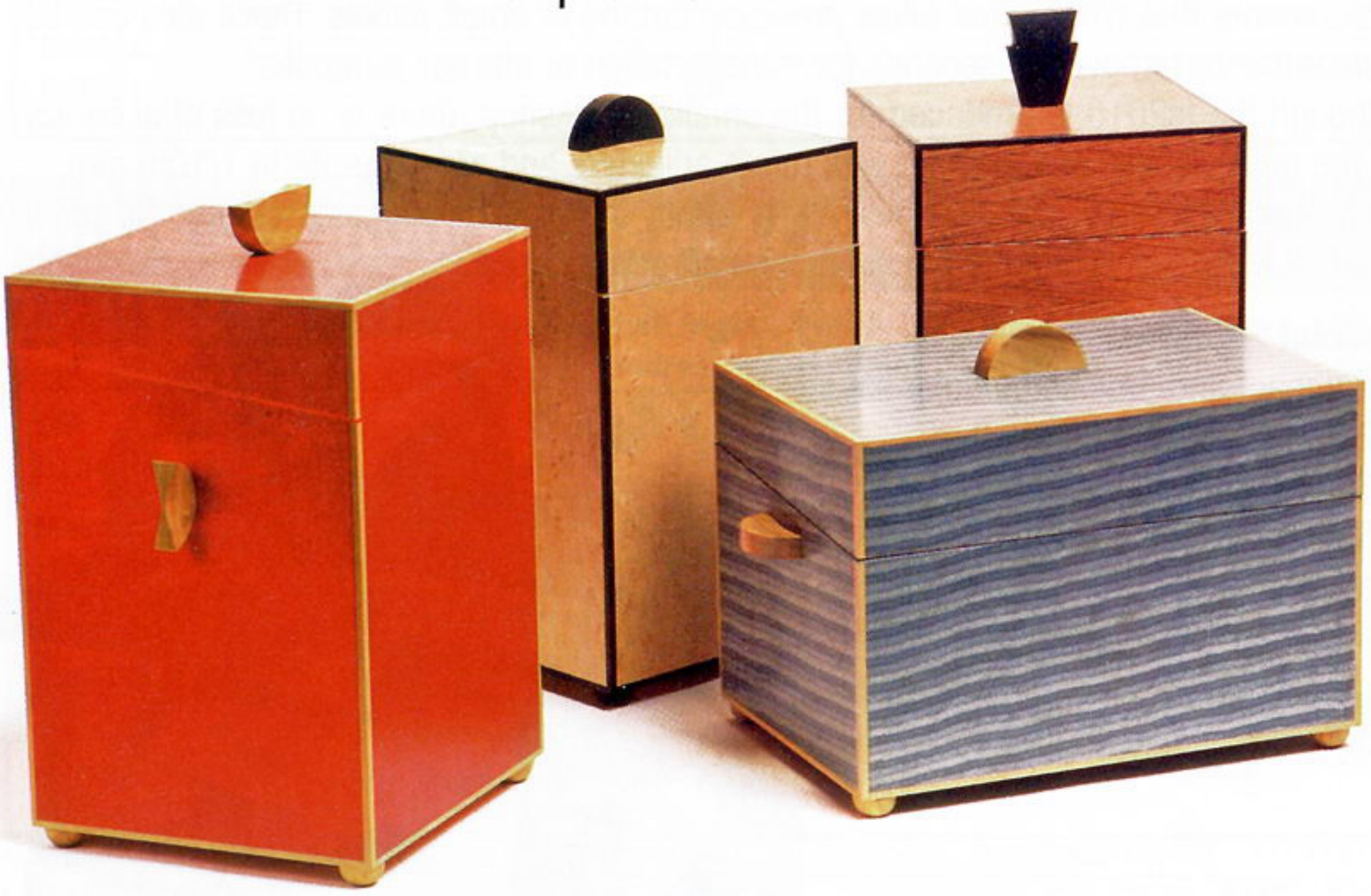
Box building

Survival projects can also be a commercial proposition, as **Nick Chandler** explains



Way back in the dim and distant, in the years immediately following World War II, many people were recruited to the teaching profession. My own subject specialisation was no exception: woodwork, metalwork and technical drawing. At the end of their course the newly qualified, battle hardened teachers at one particularly well-known training establishment were armed with some 'survival projects' to get them teaching the necessary primary skills to the boys.

Pot Boilers

The continued existence of these projects was remarked upon to us when I attended teacher training college in the 70s. How could they still be used after more than 25 years? Had the staff no imagination? How we laughed. So when I started teaching, I almost choked when I saw those self same projects were still being used. The staff in the department asked me and my colleague, Andy, both of us fresh from our colleges, for the 'new ideas' so that they might be saved from teaching the same thing for the next 30 years.

I mention this story because of the need for survival projects of your own in the early stages of a new business. It is as true today as it was for, say, the Barnsley Workshop, which designed and made its own 'pot boilers', as they were known, like hand mirrors and trays to keep potentially idle hands busy when the order book wasn't full and gloomy times looked set to descend on the business. It's at these times when you are under pressure to be at your most creative – and being creative and being under pressure don't usually mix very well.

You need to think of clever ways of generating income to pay for those employees that depend on you to provide their weekly wage – and this task certainly focuses the attention.

"I've now reached a slickness of operation that can be broken down into 45 minute sections"

Useful Offcuts

Most workshops I know have survival projects in one form or another, and if they can be made from leftover timber and veneer from larger jobs already paid for, then the profit margin is that much greater. All workshops have a pile of steadily accumulating useful offcuts that will be used one day, but it generally takes a looming black hole in the order book to put them to use.

The usual requirement is that the job is quick to make, costs next to nothing in materials, looks great, and sells like proverbial hot cakes to bring much needed funds into the business. If only life was that straightforward, but that's the theory, anyway. Hopefully, the necessity for pot boilers would cease once business picked up.

Recession

So around 1990, in the depths of the recession, I too was contemplating the wisdom of being in the luxury goods business, when the phone rang. It was a regular customer of mine, Megan, wanting me to make something.

I was saved! Er, well, almost. She wanted a box. I tried not to sound too disappointed, but started my questioning routine all the same.

"So, what do you want to put in it?"

"I don't really know, actually – I just like boxes," came the helpful reply.

"Well, can you tell me what you want it for so I can work out a size for it?"

"Oh, about 9" x 6" x 6" would be fine, but standing up on end, as I don't have much space on the table where I want to put it."

Form Follows Function

Despite the lack of purpose or need, the fact that she wanted a box of a 'useful' size was all. Now being a mere male of the species, I am used to everything I make having a purpose and function, so I was a little nonplussed at her request, but at least I had some measurements to work with. As designers, we are used to working from the inside out – whatever the size of the item to go in it gives us the dimensions to work from, which justifies the overall size and eventually, the shape of the thing. It's as true for chairs, wardrobes and jewellery boxes as it is to airports and skyscrapers. Hence that well-known adage used by designers of all types for its

succinct truism and easy alliteration, "form follows function" (coined by American architect Louis Henri Sullivan).

Art Deco

From our past collaborations, I knew that Megan had a love of Art Deco and wanted woods typical of the era; bird's eye maple, ebony, macassar ebony, that kind of thing. I only had to provide a sketch and samples and seemingly, in the twinkling of an eye, the deposit was collected and the job was done, dusted, delivered and paid for.

Pleased at the ease with which this was accomplished it got me thinking; my mind went to warp speed and drew the startling conclusion – brace yourselves – that if women want boxes for no purpose, I could supply them! Thanks to her, I could have my very own pot boiler that could be produced rapidly and in quantity, too. They became a regular item at shows over the years and folk who admired my work but could not afford the high ticket items, were highly desirous of a box.

Stand and Deliver

On countless occasions I have been confronted by a wife who has dragged her husband along to a show. Eyes glinting at the huge array of boxes spread out across the stand, her gaze falls upon the one she wants:

"That one, please!"

Bored husband takes a look at it.

"What do you want another box for? What are you going to put in this one?"

"Don't you worry, I'll think of something. Just pay the man, John," says she, winking at me slyly. So John 'the wallet' duly complies, mumbling into his beard all the while and giving me dark looks for being the root cause of his having to open his tightly shut wallet.

Smiling sweetly, I mentally thank Megan for introducing me to the strange ways in which women think.

Slick Operation

Since then I've made literally dozens of these boxes, no two the same, with variety afforded by veneers and detailing such as handles and feet. They've been much admired and inevitably copied, but that's competition for you. They do require some care in the designing and the making as small boxes, by their very nature, lend themselves to close scrutiny, so they have to be faultlessly made. The attractions for the novice are that they can be made using a minimum of machinery in a relatively a small space.

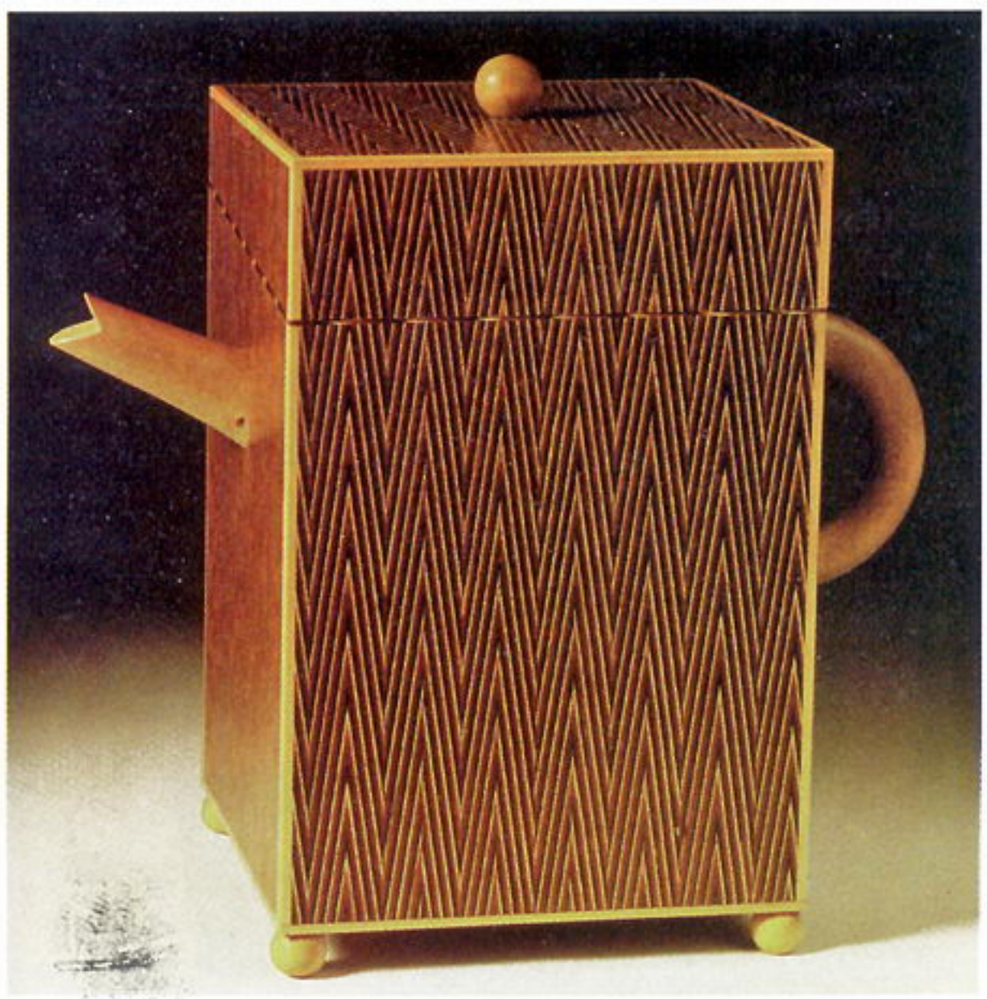
I've now reached a slickness of operation that can be broken down into 45 minute sections so I can begin and end the day with progress made on guaranteed income. They have long since stopped being made from scraps and leftovers, and have developed a level of sophistication that keeps me thinking up plenty of new ideas for them.

Naturally, I have other pot boiler projects too, but I can't be giving away all my ideas, can I?

A classic macassar ebony box with much darker ebony legs and inlays

A bevy of boxes using some spectacular veneers. Nick obtained these from Capital Crispin Veneers in London

"The box is glued up all in one go – all six sides at the same time – ensuring it is square"



A tea caddy with a difference... This veneer is produced in Italy. Spout, handles and feet are made from boxwood

Noble Art

This is also a fine project to attempt the noble and ancient art of veneering if you've never done it before. Firstly, here's a few helpful hints: the veneer is usually the costliest part of the box, but you can practise by buying some cheap 'balancing' veneer. This is stuff sold by veneer merchants that is normally stuck to the back of a board and isn't seen, the other side having the expensive show veneer. You see, when you veneer on one side of a board, you have to do the same to the other to stop the board from 'cupping' as it dries out. The glue applied adds a layer of moisture, so if one side of the board is wet and the other dry, well, you can see you're going to have problems.

Box Construction

I suggest you use a man-made board like ply or even MDF, but be careful of the latter because you'll have big problems when you want to screw hinges into the edge. The stuff will delaminate as you try and put a screw in. So why not solid wood? Simply because it will split and crack in time underneath the veneer.

You only have to go into any antique shop and look at veneered furniture to see what I mean. I reckon if Chippendale had had man-made boards commercially available 250 years ago for veneering onto instead of pine as a substrate, he would have used them...

Getting it Together

I make a dozen boxes at a time, which is the most I can get out of one sheet of ply for this sized box. More importantly, to make any more than this would drive me nuts because I have a low boredom threshold.

Selection of the joint also needed some scratching of the head and stirring of the tea, because care needs to be exercised, here. If you have a corner where the side overlaps the end, the ply substrate will shrink back a little underneath the carefully applied veneer and 'telegraph' through it so that you get a raised edge at best, or at

worst, cracked veneer all the way along it.

Rebate Joint

You can buy those rinky dinky mitre lock jointing cutters for a router these days, which means you won't have that problem, but it does make it a bit fiddly to glue up. I use a rebate joint on the corners and the size of the lap is determined by the thickness of a square section rod you run up the corner. It's easy to cut the joint if you make a batch, as the board is cut into long lengths and the joints worked along the edges with a router, before being cut to length.

As veneer is so thin, it is vulnerable on corners of the box and likely to chip out if knocked, so to protect those corners a small rebate is cut (with a router, or planing it off with a shoulder plane) and a 3mm square-section strip of wood is glued into it. This adds a decorative element, contrasting or complementing the veneer. As it is solid wood, it can be shaped as well if desired.

Strip Linings

At this stage, you can veneer the inside faces, sand, lacquer and wax it, but I don't on these small boxes, preferring instead to insert slip linings – thin pieces of wood, 3 to 4mm thick, that stand proud of the open edge. As a result, there is sometimes no need to hinge the box, as the lining holds the lid in place – fine if you are trying to keep costs down.

The box is glued up all in one go – all six sides at the same time – to ensure that it remains square. It does mean, however, that you have to have three different sizes of clamping boards and each box is pretty damned greedy with the number of clamps it requires to hold it together.

NOTE: The clamping boards have to be thick – 25mm at least; you have to spread the pressure around the cramphead by having a thick board. If the board is thin, the pressure is too localised around the cramp head and the joint won't fit quite as well.

Veneering

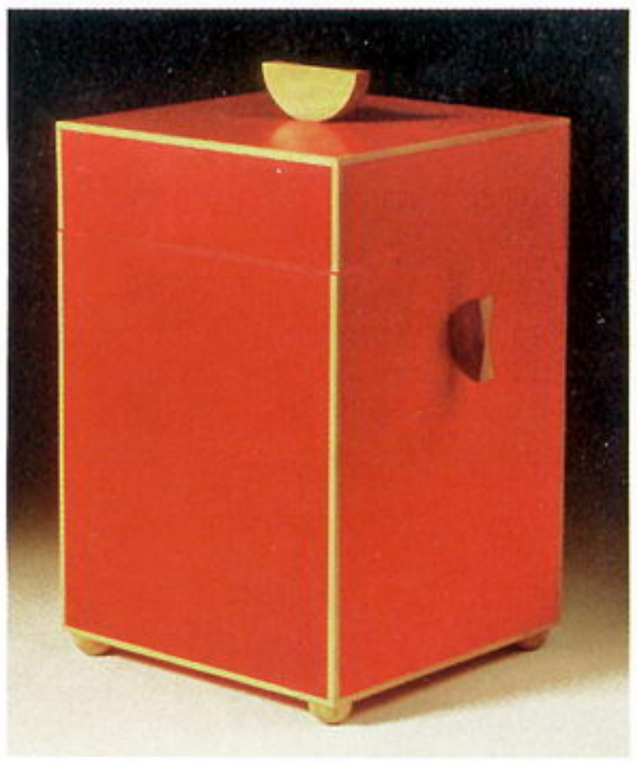
Veneering has had a bit of a bad press in the last 30 or 40 years or so, because it's usually associated with cheap, mass-produced furniture that falls apart after a few years use. But it is also true to say that the finest and most expensive furniture ever made was veneered. Nowadays, we are still able to legitimately use veneers to actually enhance the perceived value of an item if it is well designed and careful attention has been paid to the details. It's an uphill struggle to discuss this with some customers, but where appropriate, I, like many other furniture-makers, prefer to use veneers as the grain is so much more attractive than solid timber, and there is a positive constructional advantage where the use of solid timber is not appropriate. Other advantages are that it's relatively inexpensive, less wasteful, and many effects can be produced by making patterns with different woods and grain direction.

The obvious patterns are book-matched and butt-matched, but you can run the grain vertically, horizontally, diagonally, etc. There are some Italian, man-made veneers that also look very interesting, but they are fragile and sometimes the bright colours fade quickly in daylight.

This box is from steamed Swiss pear with rippled sycamore legs

Veneer is often much more interesting than solid timber. Corners are more vulnerable, though, so add decorative inlay

"I like to make all the handles and feet myself – it's another way of making it MY product"



Italian man-made dyed veneer was used for this stunning box. It has boxwood corner inlays, handles and feet. Brightly-coloured veneer has a tendency to fade quickly in daylight

Choice of Glue

You really want to use a glue that goes off very hard, which rules out PVA for me. I use Extramite glue for veneering as it penetrates the surface of the veneer and sets rock hard. You can use Scotch glue too, if you wish. The box is a very manageable size for practising hammer veneering, but as I make these in a small production run and glue on two sides at a time, a dozen boxes in one go, personally, my method is much quicker than hammer veneering.

Toothing Plane

I always 'key' the surface of the box with a toothing plane, which may raise a few eyebrows. There are two schools of thought on the use of these: one school says you don't need to use them because modern glues are so much better; the other lot – of which I'm one – says yes. But the other purpose of a toothing plane is to get a surface flat, not just to provide a key for the glue – you'll be surprised at how unflat the box sides are after gluing it up.

Mary Poppins Method

When I worked for David Savage we joked that I was obviously from the 'Bart Simpson' school of gluing, slopping the glue liberally on the work, myself, and anyone else in the way, but I say you don't want to be too mean with the stuff or you'll have 'bubbles' where the veneer hasn't stuck to the box through lack of glue. I used his 'Mary Poppins' method of glue application like he showed me and it does work, but I like to add a lot more because working in summer in Seville makes glue go off so fast.

With burr veneers such as oak, brush a little glue on it as well because it's very absorbent. Flop

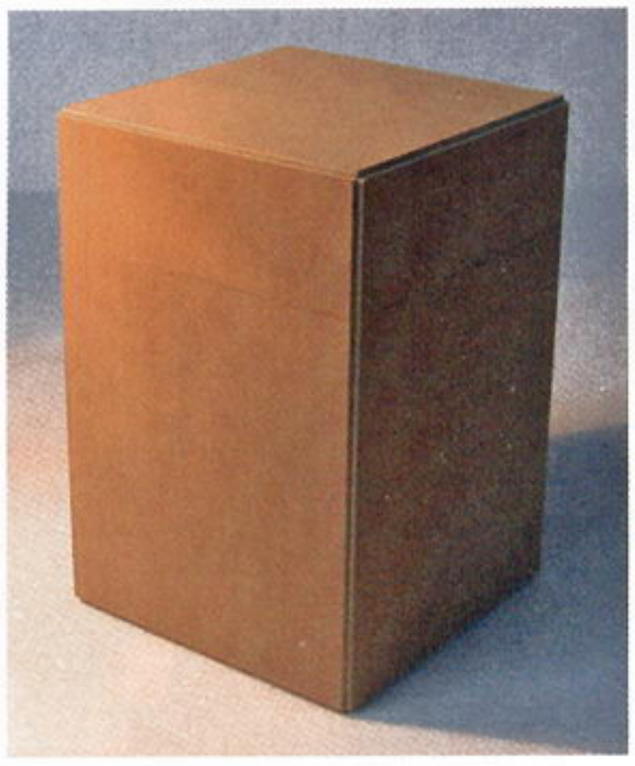
on the veneer, hold it in place with veneer tape, and cover it with a sheet of newspaper to stop it sticking to the clamping board. However, be sure that you don't tighten the clamps too much or you will cup the surface of the box and the glue will helpfully keep the new shape for you once it's dry. (Here speaks the bitter voice of experience…)

You may have noticed that I mentioned clamping boards for pressing the veneer in place. They are used with G Cramps. You can use a bookbinders' press, several concrete blocks, sandbags, in fact just about anything that can provide enough weight.

Once veneered all round, sand all surfaces and apply a protective coat of sanding sealer or lacquer to keep it clean of grubby finger prints while you work on the next part of the job. Sanding at this stage is important, because if you try and sand the box once you've cut it open, you'll have a great deal of difficulty keeping the surfaces level.

Using Veneer Tape

This is the white paper tape with the holes punched in it that everyone tends to lick before applying. A note of caution here: if you are licking the tape after you've had a cup of tea, or having eaten a hot curry, the lick off your tongue will have more acid in it and it can stain the veneer, especially if you're using oak or mahogany. So damp it with warm tap water instead.



With 3mm rebates cut ready to receive square inlay, this is the steamed pear box veneer (left)

Simply using a contrasting wood such as ebony for the details can be dramatic (right)

Cut Open the Box

Cutting open the box has to be done with a great deal of care. Marking with a cutting gauge to cut the surface of the veneer saves the distress of seeing the veneer chip out either side of the saw/ router cut.

Cleaning up the Edges

I glue large sheets of abrasive paper onto a board and sand the edges flat by rubbing the box on it. It's at this point that the corners of the box are rebated to receive the strip of wood, but don't stick them in until you've lipped the opening edges of the box. The reason for this is that the lipping will visually break the continuous line of the corner edging.

The next stage is to produce the slip linings and then slide them into place, before screwing on the hinges. As I said before, each box can be made to look completely different by the addition of knobs and handles, feet and a lock. I like to make all the handles and feet myself as it's another way of making the box *my* product. I finish these boxes by french polishing; it gives a depth of colour that isn't arrived at by applying plastic finishes, and it's really not that difficult to do either.

I could go on and on about various other details, but it's simply my way of doing things. I don't want to spoil the fun for you… try it yourself.

Top boxmakers

Making boxes is a great way to use up those offcuts that are too small for much else. If you're keen to try veneering as a new technique, you can use fairly exotic veneers on an MDF substrate without spending a lot of money on materials.

Good Woodworking has featured several well known boxmakers in its *Workshop Angles* series, including those whose work is shown here.

For a comprehensive book on boxmaking, Andrew Crawford's *Fine Decorative Boxes* will give you plenty of information on using veneers and inlays.

Martin Lane's Celebration Humidor (left) was made for the 150th anniversary of Harrods of Knightsbridge. From bubinga, drawer sides are rippled sycamore drawers.
Andrew Crawford is renowned for his veneer and inlay work (above). He makes his own decorative stringings and inlays

Peter Lloyd tends to use solid native timbers and burrs for his boxes. They often feature wooden hinges (below)