

## Workshop on Cutting Marquetry with a Knife (18.10.2009)

### Introduction

Knife cutting is more commonly used than sawing for marquetry in Australia and the United Kingdom, because it requires no special equipment and can be done on a kitchen table. Other advantages are that there is no noise or dust produced in the cutting out stage. Safety is still an important consideration, however, because of the sharpness of the knife blades.

The thin veneers (approximately 0.6mm) available in Australia are well-suited to this approach. As in sawn marquetry, an aim is to produce work with no gaps between the joints. It may require many hours of practice to achieve a desired level of skill. These notes cover some basic points only. The references listed at the end are some of the many sources of further information on all aspects of marquetry.

### Veneers

Black	Bog or fen oak, macassar ebony.
Brown	Walnut, teak, blackbean, oak, silky oak, elm, blackwood.
Tan	Weathered sycamore, light oak, teak, opepe.
Purple	Kevasingo, purpleheart, indian rosewood.
Red	Padauk, western red cedar, makore, mahogany, sapele, jarrah, Queensland maple.
Pink	Canadian birch, pear, lacewood, gaboon, bird's-eye maple, cherry, elm, aspen.
White	Horse chestnut, white sycamore, koto, ash, willow, poplar.
Yellow	Iroko, antiaris, avodire, satinwood, obeche.
Burrs	Gambola, elm, walnut, green cyprus, amboyna.
Special effects	Tamo ash, zebrano, figured oak, olive oak, rosewood, bird's eye maple.
Harewood	Veneers dyed with sulphate of iron, in shades of silver, slate, dark grey, etc.
Dyed veneers	Various uniform bright colours are available.

*Above list adapted from Turner (1990: 7).*

### Selecting Veneers

While a scroll saw can cut hard veneers with ease, they are difficult to cut with a knife. Even when cutting against a steel ruler the knife can tend to want to follow the grain rather than the ruler. Repeated shallow cuts are usually necessary for both hard and soft veneers.

Choosing soft veneers is one way to minimize the difficulties of cutting marquetry with a knife. Examples of soft to medium veneers are avodire, beech, benge, birch, butternut, cherry, harewood, holly, huon pine, koto, mahogany, pear, peroba, poplar, poplar burl, sapele, sassafras, sycamore, walnut (see Hobbs and Fitchett 1980: 31). A small selection of easy-to-cut veneers may be sufficient for many projects.

### Flattening Veneer

If the veneer is buckled and will not stay flat, spray a fine mist of methylated spirits on both sides, then press (carefully/gradually) between boards and paper towels. Repeat if the distortions in the veneer are very pronounced.

### Reinforcing Veneer

Attach paper tape to the top (finished side) of the veneer to prevent splitting and breakage, especially along the grain. This can be used for large pieces of background veneer as well as for smaller inserts. Lincoln (1980: 74) recommends using Sellotape on small pieces.

## Blades

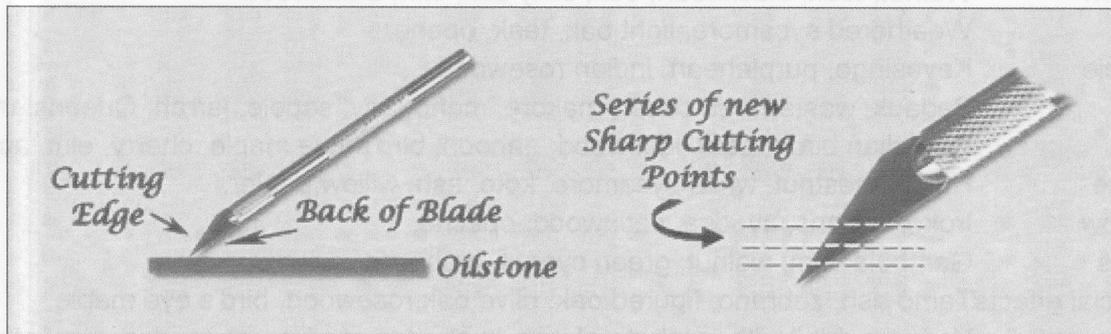
Choices of knives include a round-handled craft knife, a carver's knife or a Swan Morton knife. Most cutting is done with a fine pointed blade, such as a number 11 Swan Morton scalpel blade. A number 11 Xacto blade is similar. Another type of blade with a curved edge is also useful for scraping tape and glue from the work. Blades can be embedded in pieces of polystyrene or cork between uses.

## Sharpening Blades

This section is from the website of The Marquetry Society (UK):

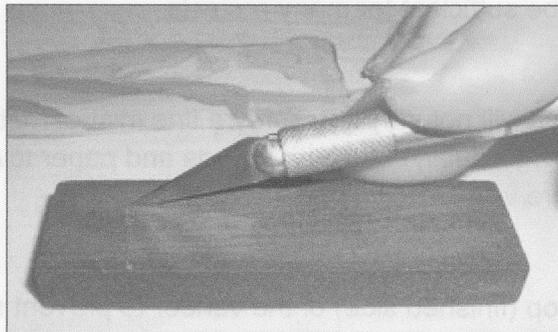
[http://www.marquetry.org/the\\_marquetry\\_knife.htm](http://www.marquetry.org/the_marquetry_knife.htm)

Of all the skills required in marquetry without doubt, the main one is the ability to cut accurately. This skill depends on maintaining a sharp point on the knife. The point of the blade is the part of the knife which is used to cut, not the long edge of the blade. To maintain this point the blade is sharpened on a fine carborundum stone or oilstone, as shown below:



The back of the blade is applied to the stone and rubbed in a straight line to remove any burrs or hooks on the tip. This will progressively move the cutting tip down the blade. NEVER try to sharpen the beveled cutting edge, you will not be able to compete with the manufacturer! Work evenly over the surface of your carborundum stone and try not to wear a groove in it. A cheaper alternative is to use medium cloth backed carborundum sheet glued to a piece of wood. [Ives (1995: 6-7) recommends using 80 grit followed by 180 or 200grit emery paper.]

In order to make a finer cut and allow the blade to be removed easily from the wood, the shoulder between the cutting edge and the back of the blade is also ground down giving a more streamlined effect.



## Applying the Design

Many people draw a design on tracing paper and transfer the design (with a 4H or similar pencil, or a metal stylus) to the back of the veneer using black carbon paper or grey graphite paper (from art shops). Alternatively, a design on white paper can be glued (glue stick) to the the veneer. If the design is on the back it will need to be drawn in reverse. Paper patterns attached with a glue stick (glue on the paper only, not the veneer) may peel off fairly easily.

## Cutting Two Pieces at Once

1. For simple designs where only two veneers are needed, such as for a backgammon board, a knife can cut the two veneers at the same time. This will produce two finished pieces, one a 'negative' of the other. The sunburst and cat designs for this workshop are suitable for this method.
2. The two veneers should be taped together first, with Sellotape or masking tape around the edges. The cutting proceeds by making repeated, overlapping shallow cuts. Avoid making heavy cuts as this makes it harder to follow the pattern line.
3. For large pieces, it may be preferable to cut only part way through the second veneer before separating the two layers – to avoid cutting slivers from the second piece if the angle of the cut changes. The second piece is then completed following the partially cut line. The window method (see below) also uses a shallow knife cut to mark out a piece to be inserted in a 'window'.
4. When the cutting is completed, assemble the pieces, secure with tape on the front, and rub PVA glue into the joints from the back. Turn over, make sure all pieces are pushed down so that the back is level and, if necessary, press between weighted boards with wax paper on each side of the marquetry.
5. When the glue dries, the marquetry will be ready for gluing to a backing board, such as 9mm or 12mm mdf or plywood. Remove all Sellotape or masking tape before gluing on to a board – it can be very difficult to remove after pressing.

## The Marquetry Society's (UK) Advice on Knife Cutting

Source: [http://www.marquetry.org/the\\_marquetry\\_knife.htm](http://www.marquetry.org/the_marquetry_knife.htm)

We always suggest that you start by cutting [simple] shapes. Carefully check your test pieces for any major faults in order to correct your technique for your project work.

1. If the pieces are a very loose fit with significant gaps all round, check that you kept the knife in close contact with the template during marking and then follow that same knife mark during the subsequent cutting out.
2. If the edges of the cut are chamfered (sloping) check how you hold the knife. Many people hold the knife as they would a pen, in a sloping position. You must learn to roll the wrist over to keep the knife blade square to the work to produce a square cut.
3. If you are cutting small pieces, or tapered ends, reinforcing the veneer first with paper tape will help. Although the wood may still break up, the tape will hold the veneer together - careful handling will keep it together until it can be fitted and glued into final

position. Do not remove the reinforcing tape until the glue has dried (15 minutes) or it will all fall apart!

4. If you are finding it hard to see where you have traced the line through the window, a coat of paper tape makes the cutting line much more visible.
5. If the wood appears to split easily, make sure that you do not use too much pressure on the knife to try to cut too quickly. This severs the wood along the fibres instead of cutting through them. It is better to use several controlled strokes with lower pressure on the blade.

### **The Window Method**

The most common technique for making marquetry is the window method. It is suited for both simple and complex designs. As Ives (1995: 9) describes it, "... this means starting with a waste sheet of veneer or cardboard and cutting the shape of one piece from this. A piece of the selected wood is placed under the opening or "window" and cut round using the edge of the window as a guide. Each and every piece is cut and fitted in this way."

The window method, done well, can produce joints without gaps. It also enables the maker to choose the most suitable orientation and positioning of the grain or figure in the veneer, by viewing it through the window.

Robin Cromer will be discussing the window method.

A website on the window method is: [http://www.woodezine.com/03\\_2005/0305\\_marquetry.html](http://www.woodezine.com/03_2005/0305_marquetry.html)

### **Examples of Marquetry**

There are many examples of marquetry on the web. A good starting point is:

<http://www.marquetry.org/> The Marquetry Society's (UK) home page: click on 'all galleries' at the left of the page for pictures of marquetry work.

### **Sources of Marquetry Designs**

Simple clip art designs may provide ideas for initial test pieces and projects.

### **References**

Hobbs, Harry J and Fitchett, Allan E. (editors) 1980. *Modern Marquetry Handbook*. Thames and Hudson.

Ives, Ernie 1995. *Marquetry for Beginners*, Ipswich: The Marquetry Society (4<sup>th</sup> edition).

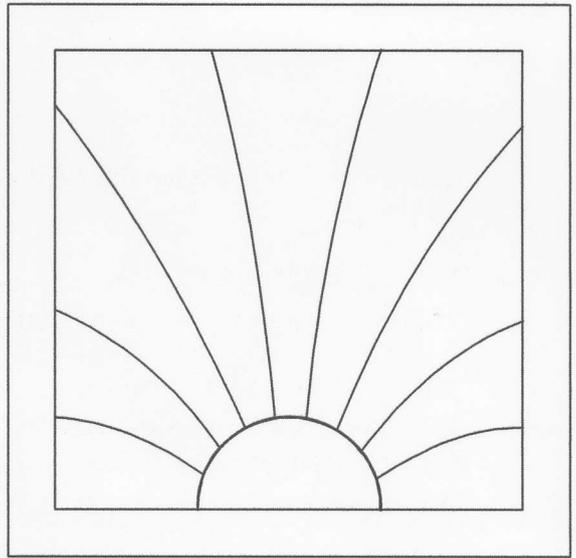
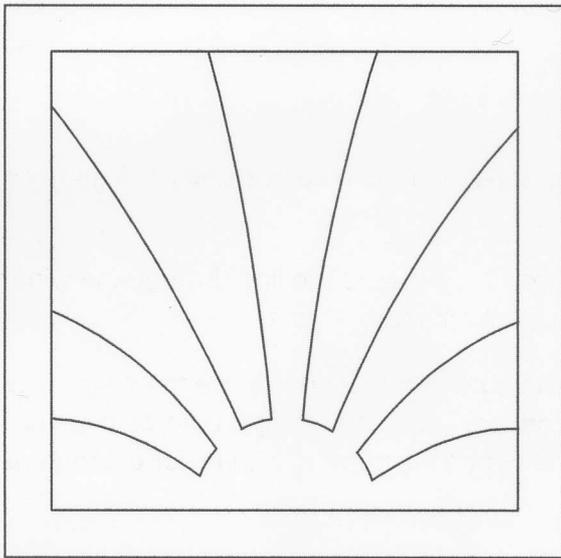
Lincoln, William A. 1992. *The Marquetry Manual*, Hereford: Stobbart Davies Ltd.

\*Middleton, David and Townsend, Alan 1993. *Marquetry Techniques*, London: Batsford

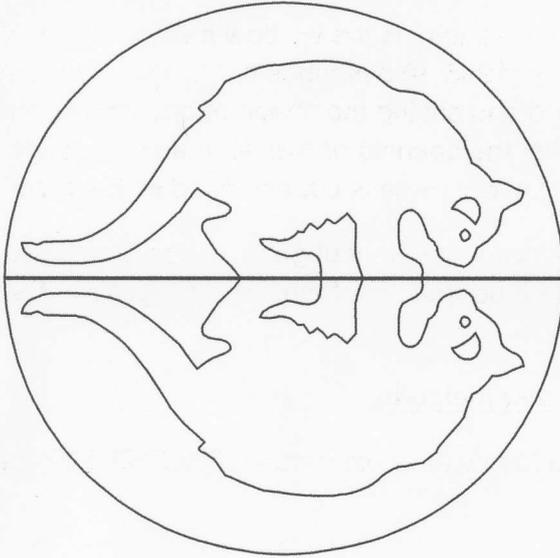
Turner, Roy 1997. *The Magic World of Marquetry*, Melbourne: The Marquetry Society of Victoria.

\*In the Guild's library.

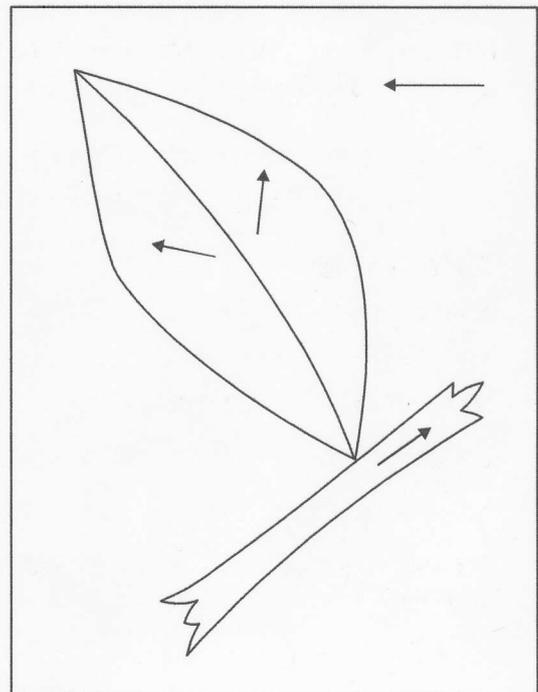
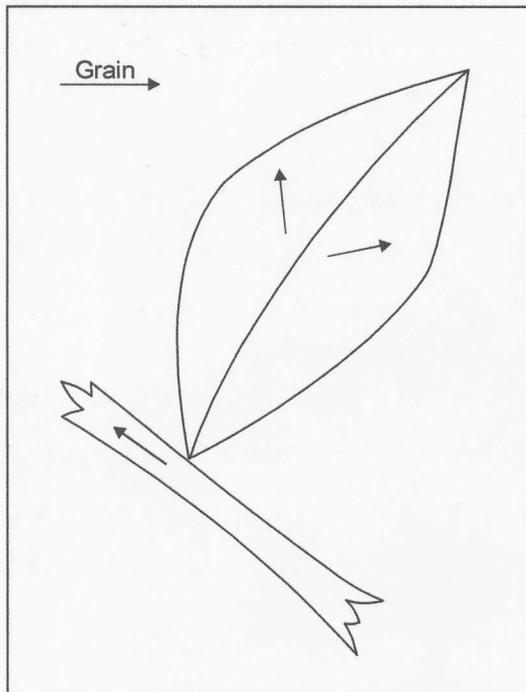
Don Rowland, October 2009



Source: Bridgewater, Alan and Gill 1991.  
*Marquetry and Inlay: 18 Decorative Projects*. TAB Books, page 28.



Source: Lincoln, William A. 1989. *The Marquetry Manual*, Stobart Davies Ltd, page 69.



Don Rowland, October 2009