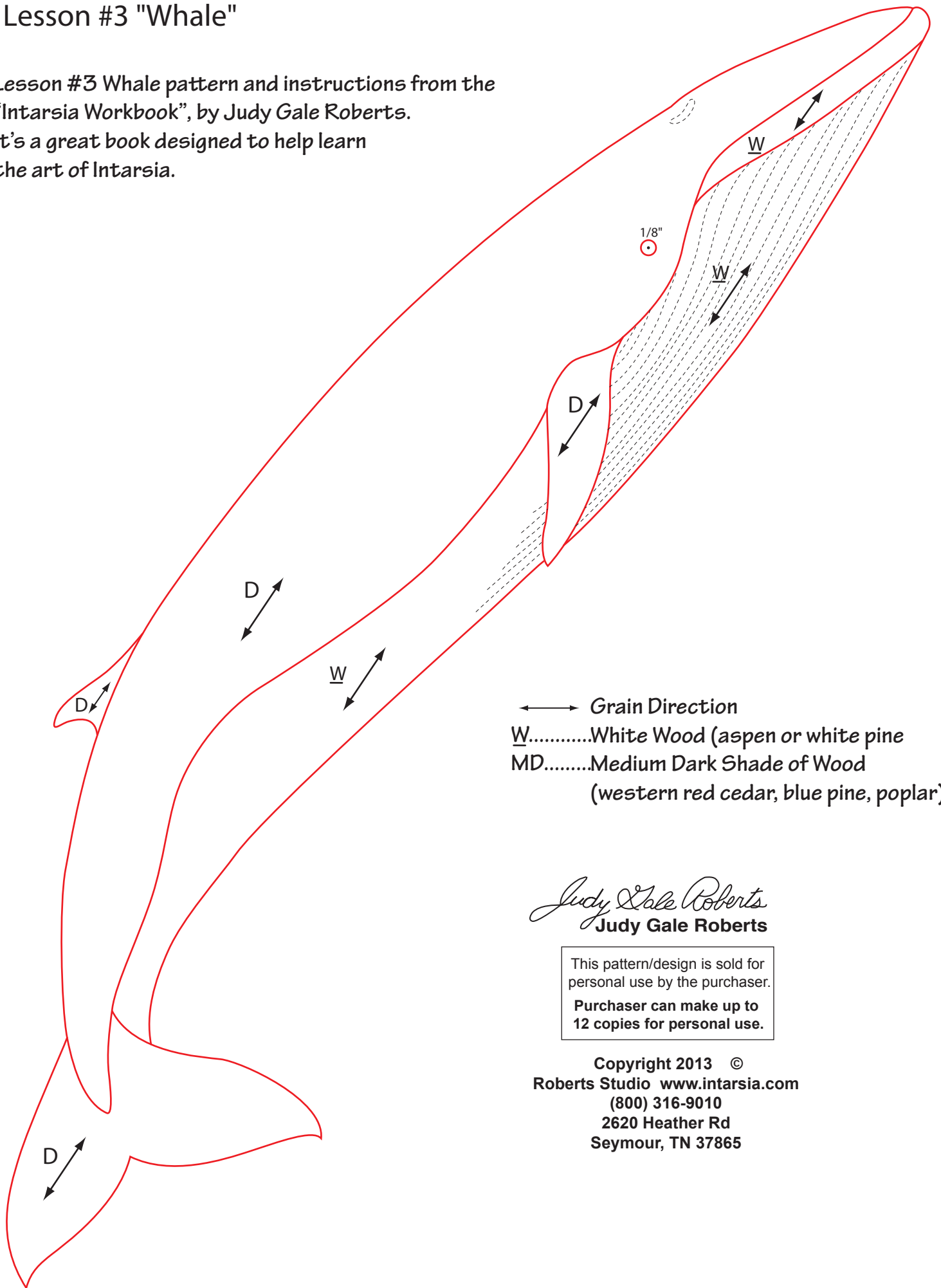


Lesson #3 "Whale"

Lesson #3 Whale pattern and instructions from the "Intarsia Workbook", by Judy Gale Roberts. It's a great book designed to help learn the art of Intarsia.



←→ Grain Direction
W.....White Wood (aspen or white pine)
MD.....Medium Dark Shade of Wood
(western red cedar, blue pine, poplar)

Judy Gale Roberts
Judy Gale Roberts

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Whale Pattern Instructions

Tools needed:

- Scroll Saw, or a Band-saw
- Some type of sander for contouring, softer is better. A “Flex-Drum”, or a pneumatic (air inflated) sander is best, however a belt sander or disc sander will work also.

Handy tools to have:

- Carving tool (“exacto” knives, carving knife)
- Wood-burner

You will need the following to make this project:

- A dark shade of wood at least 4” wide by 13” long and 3/4” thick
- A white shade of wood at least 2” wide by 13” long and 3/4” thick..
- “Re-stickable” glue stick or “Repositionable” spray adhesive.
- At least three copies of the Whale pattern
- 1/4” Luan plywood for the backing and sanding shim
- 1/8” dowel for the eye
- 1/8” drill bit
- Woodworkers glue

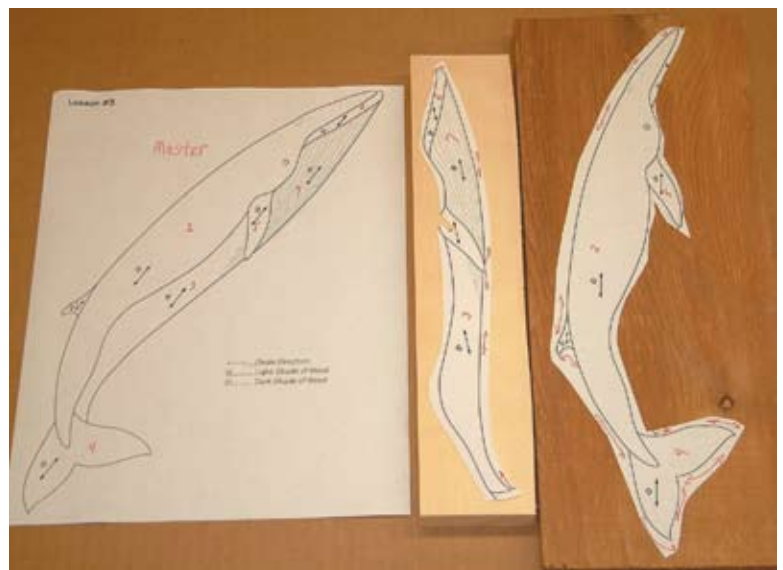
Pattern Prep/Layout

Glance over the pattern. The Whale pattern has two colors of wood, the grain direction is the same for all the white parts and for all the dark parts. These areas can be laid out as one section. This tells me I will need at least two copies of the pattern, and I like to make a couple of extra copies, one for my “master” and an extra one just in case. Four copies should be enough to complete the project. I like to use at least 3/4” thick wood and find wood grains/colors that will enhance the project.

Label one of the pattern copies as your “master”. I like to number the master, numbering each part. Take one of the copies and cut the “W” sections giving them about 1/4” border around the line work. With another copy cut the dark parts, also leaving about 1/4” border around the line work. Transfer the numbers from the master onto the cut pattern pieces. Now we will glue the pattern to the wood. I use a “re-stickable”

glue stick. It is a water base product that works great for me. A “Repositionable” spray adhesive will work too.

Another thing that I like to do is mark, using arrows on all the outside edges. This way when you start sawing you can saw the outside edges first, nothing fits next to the outside parts so you can relax a bit and get into the swing of sawing before you have to make any parts fit, see the layout.



Before you start sawing out your parts, the whale has a 1/8" hole for the eye that needs to be drilled. It's a good idea to do any drilling before you start cutting the parts out.

Scroll Sawing

Let's start with the dark parts. Notice that the upper body, the tail and the dorsal fin as well as the flipper are all dark. We can cut them all from the same piece of wood. You can pretty much start anywhere you would like but I would start from the back area between the dorsal fin and the tail. Enter the cut and proceed toward the tail where the point is. Once you reach the point in the tail, back out of the cut and reverse the direction and cut toward the head, do not follow around the dorsal fin but just continue cutting along the back (we will get to the dorsal fin later) and around the head and then finally off the part. Next, enter the part at the mouth area and continue cutting until you reach the fin, and go past the front part of the fin and then follow the fin on its back side and then off the part. Set this section aside then enter where the fin was on the belly of the whale and continue cutting until you get all the way in the tail and join the tip of the body. The tail section will then fall away. Now you can cut the rest of the tail section and then the dorsal fin and flipper.

This will be all of the dark parts.

Now we can cut the white parts much in the same way as we did the dark parts. You could start cutting at either end but let's just start at the upper section of the mouth and continue cutting (photo 3.10) past where the fin is (was) and onto the belly on the back side of the fin and continue along the belly and then off the end of the part. Remember that this belly section and the dark section have to match up so saw slowly and put the middle of the line on at the middle of the blade and remove the entire line. Now you can start sawing at either end along the belly of the whale (this area does not have to fit another part so you can relax a little and if you happen to drift off the line, either direction) it is not such a big problem. After the





belly section has been cut you will be left with a long slender part that still has the mouth attached and the fin area which has to be removed. You can cut either of these parts first. Once all the parts have been cut be sure to remove the “Burr” on the back side of the project so it will sit flat.

Checking for Fit

Before taking the paper off, it’s a good idea to check the overall project to see if everything is fitting all right. The whale having the dark upper section and the

white belly section may have some fit problems between the two. Any line work on the pattern may reveal where the fit problem is. If there is not any line work evident and there is still a fit problem, you can make a mark on the part and trim it with the saw. We use a new sharp blade in the scroll saw to trim any parts if needed.

Shaping Basics

Before removing the paper, transfer the number from the pattern onto the backside of the part. When you are satisfied with the fit, remove the paper. At this stage, it is a good idea to take a minute and study the project again. I like to get a general idea what I plan on doing. I start with the parts that would be the background, or the parts that would be the farthest from the viewer. If I am not familiar with the subject matter, I will find as many pictures as possible to aid in shaping.

Here’s the plan- A whale is somewhat shaped like a torpedo, they are very streamline to enable them to move quickly in water. I want to sand the dark and white wood together to have a consistent contour on the whale. To do this I cut from a scrap piece of 1/4” plywood the shape of the parts I want to sand together. I either use the pattern or place the parts on the 1/4” plywood and draw around them. Then using double sided tape I stick the parts together on the 1/4” plywood sanding shim. Now I can sand the parts as if they where one piece of wood. In many cases this save time, there is less handling of each part. In other cases I spend more time taping up the project only to sand for a bout 3 minutes then take it all apart and sand the rest

of it individually. At this time I will make any sanding shims I may need. Make your sanding shim at this time (see photo 3.15). Include the tail section along with the body sections.

On the whale, my plan is to start with the fin on the whales back. This is an outside part and can be sanded down very thin if wanted. I'll probably take it down to a 1/4" evenly. Then I will need to sand the whales body down to about a 1/2" thick so the side flipper will be the thickest part. With this plan in mind I start the shaping process. Remember to rough in the entire project and slowly bring it to a completion. Now to actually start the shaping follow the steps.

Step 1. Sand the dorsal fin down to about a 1/4" (see photo 3.16). With a mechanical pencil mark where the fin joins the back. This pencil line will be a guide for you when you start sanding the back of the whale.

Step 2. Prepare to sand the body of the whale by turning the parts upside down. Start with the larger dark part, then place the white sections, exclude the side flipper and the white lip part (you can use it for placement, just do not put any tape on it). I prefer to place the parts upside down so I can see exactly where I need to put my tape, rather than put the tape on the sanding shim, then put the project parts on top of the shim. I like to have at least two



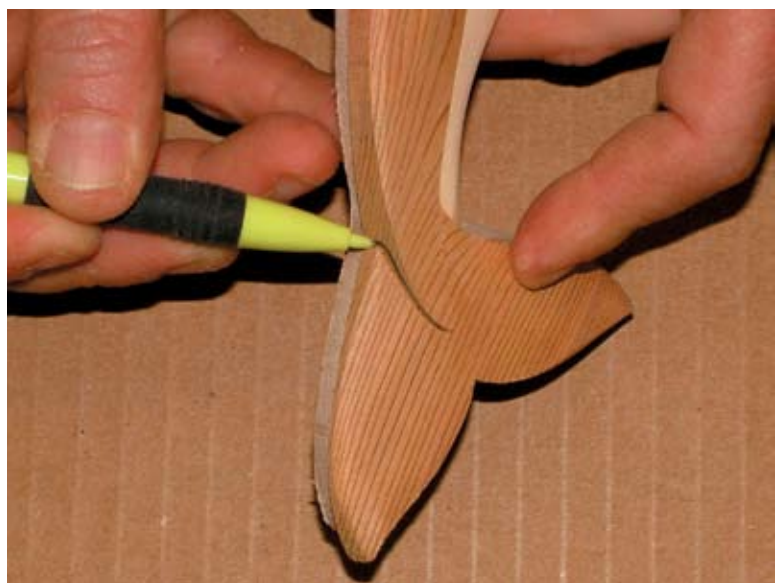
pieces of tape on each part to hold it down to the shim. I buy the cheapest carpet tape available. You don't want a permanent bond, believe me! Another note about the tape, it is best not to leave sections taped up over night. It seems the longer it sits the harder it is to take it apart. Dust off the parts and the backing before putting any tape on. Check to make sure your sanding shim is flat, any warped pieces will make it almost impossible to keep your parts taped to the shim. If some parts start to come off, stop and take the time to re tape it. If you try to hold it on, you will end up causing more problems in the long run (another one of those "believe me, I've tried it").



Step 3. When all the parts are secure you are ready to start sanding the body. In order for the side flipper to be the thickest part you will need to sand the body down to about 5/8" thick. Take this amount off the entire surface of the whale. If you just dip, or sand it down where the flipper goes it will look like it the body has a deformed shape. I take the surface wood off first. If you know ahead of time the different thicknesses you will be using you can save some sanding time and use wood already different thicknesses. I usually do not take the time to preplan to that extent on smaller projects. Once the parts are close to 5/8" thick start rounding the outside edges. Watch your pencil line for the fin on the whale's back, do not sand below that line.



To sand the tail, lower both outside edges. The center where it joins the body will be the thickest. After you get the basic shape

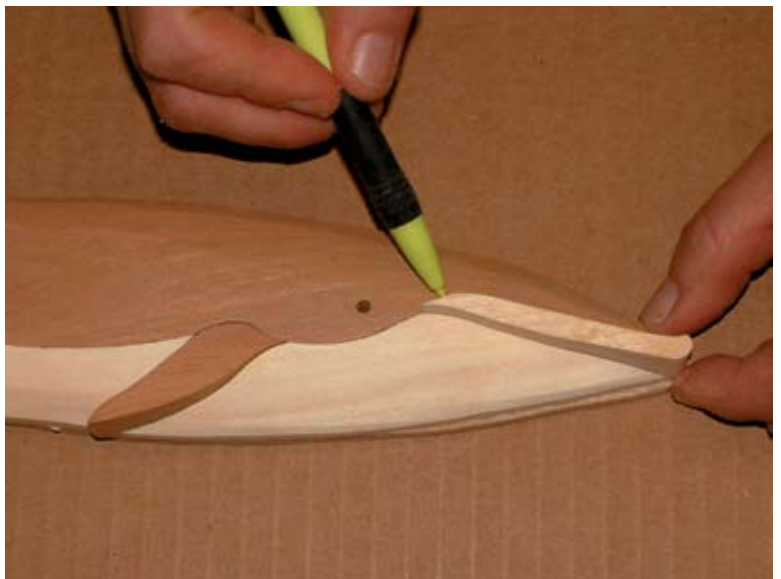


with the tail, remove the tail flipper. Smooth the tail along the top edges.

Put it back in place and remark the white section and the dark section. Round the white belly part down below the tail line. The white section will round toward the outside edge. Next round the dark end where it joins the tail, as shown in the. Remember just rough in these parts, many times you will need to go back and reshape parts. Then round the tail entry part to match the flatter fin area.



Step 4. Put the side flipper in place and mark with pencil where the dark and white parts join. Taper the flipper toward the dark body. The flipper will be thickest at the lower edge. This will give the appearance that it is attached to the body on the side and flairs out toward the bottom.



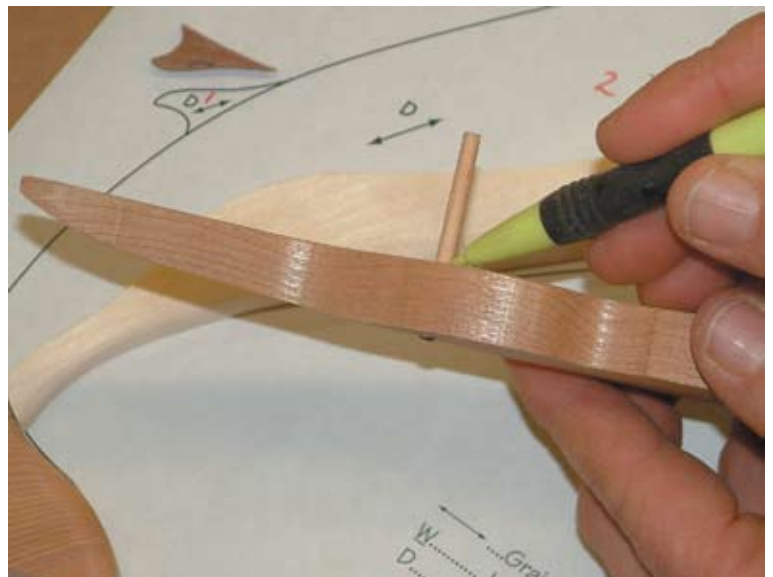
Step 5. Next put the white lip section back in place and mark around it with your pencil. Make this section just slightly thicker than the parts around it (about 1/16" thicker). Watch your pencil lines. If you do happen to sand below the lines, just lower the parts around it and start over again.



Step 6. At this point the whale is roughed in. Now start to clean up each part.

Step 7. Starting with the dorsal fin on the back, sand it with the grain and to help make it look more streamline roll the front edge of the fin.

Step 8. With the body still taped together on the sanding shim, sand it with the grain and even go over it by hand with 180 then 220 grit paper. It's easier to do this while the parts are still together. Take it apart after



the hand sanding.

Clean up the tail part, sanding any exposed areas.

Sand the side flipper and round the edge facing the front.

Clean up the upper lip.

Step 9. Use a 1/8" dowel for the eye. Round the end of the dowel, if you are using a light color dowel it looks better to darken it by burning it. I cut the dowel about 1 1/2" long. It's easier to hold on to the dowel that way. I burn the exposed end and slide the dowel in from the back side and mark it for length then cut it.

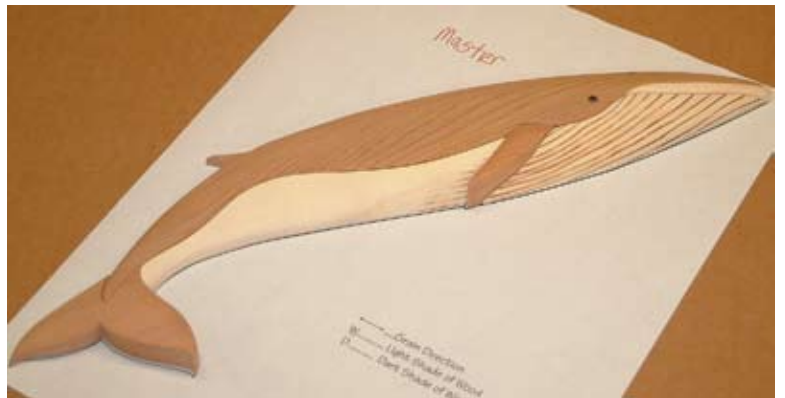
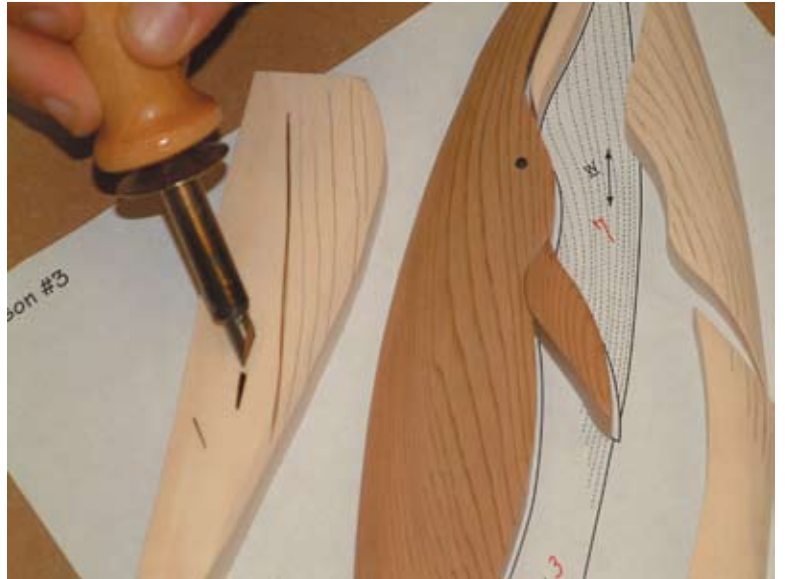
Step 10. Now for the extra detail Use a pencil to mark the lines on the whale's chin/belly area, use the dashed lines on the pattern as a guide (if needed use some graphite or carbon paper and trace the lines from the pattern). Also transfer the air hole line work at this time. We will be adding more texture to the whale. I like

to use a wood-burner for adding detail. A hand rotary tool may do the trick also. The "burning" helps accentuate the lines. Clean up any exposed edges and place the white parts back in. An inexpensive wood-burner is very helpful for adding detail to Intarsia projects. Before actually burning the lines and the spot for the breathe hole, practice on some scrap wood. When you first put the burner on the wood it has an excessive amount of heat built up. I like to put the tip of the burner on a scrap piece of wood, then start burning the good part.

Step 11. Erase any pencil lines that may be showing, check again for any deep scratches. At this point it is ready to be hand sanded with a 220 grit sandpaper.

Applying the Finish

There are many finishes on the market today as well as many techniques for applying them. We use a Polyurethane wiping gel, which is



applied to each part before the project is glued to the backing. We begin by removing any dust by using our air compressor. Each part is blown off, including the edges and back. We need a few aids for applying and removing the gel. For applying the gel we use a 1” disposable foam brush, we will also need some paper towels, a terry cloth towel, and a piece of scrap 1/4” plywood to use as a paddle to remove the gel from the can.



After opening the can I turn the lid over and use the paddle to remove some gel and place it on the underside of the lid and then place the lid (upside down) back on the can. This cuts any air flow from drying the gel. If you work out of an open can there will more than likely be a “skin” form over the gel. If a skin does develop it can be removed providing it is not too thick. When applying the gel be sure to use a liberal amount especially on the first coat. I apply the gel to the sanded side of the part and to all edges. We do not coat the back of the part.



Notice in the picture that my thumb is in contact with the coated side as I coat the edges. The gel is very forgiving in this manner and where my thumb made contact I just apply a little more gel to the spot. After the gel has been applied to a few parts it is ready to wipe off in about one minute.

We use paper towels (a full sheet, folded into fourths) to wipe the gel off the parts. Use one towel to wipe off the excess and go around the edges and then use a fresh towel to “buff” the part off, buffing with the grain. The first towel and the buffing towel can be used for four or five



parts before they need to be changed. When it’s time to change the towels, the “buffing” towel can be used to wipe off the excess and then a new towel would be used for the “buffing” towel. I will coat two or three pieces before I start to wipe the parts off, I wipe all of the parts and then start the process all over again until all the parts have been coated. We allow the first coat to dry over night to make sure it has dried thoroughly. The second coat can be applied the same way

as the first coat except we do not coat all of the edges, only the edges that are exposed around the outside of the project. After 4 to 6 hours we will apply the third and final coat. The gel works very well with the cedar and does not raise the grain so there is no need to sand or steel wool between coats. The gel will raise the grain slightly on white woods like aspen and white pine so we steel wool lightly with 0000 before applying the third coat. We used the steel wool on all the white eagle parts. After the third coat has dried (in about 4 hours) the project can be assembled.

liquefies the gel. When blowing these areas be sure to check the tops of the parts for any gel that may have run onto it and wipe these areas immediately.

Make the Backing

After the gel has dried you can make your backing. I like to trace around the actual parts, rather than use the pattern. Many times I sand the edges or alter the shape in one way or another. I trace around the project on a white piece of paper with a light coat of spray adhesive to keep the parts from sliding around while I draw around it. Then I use more adhesive spray and stick the paper to 1/4" Luan plywood. When cutting the backing stay to the inside of the pencil line. After it is cut out I stain the edges with a dark brown leather dye. The dye is alcohol based and dries very quickly. We sand what would be the back side of the backing to remove most of the dye that may have run. Do not sand the front (gluing surface). To help seal the entire project we spray clear acrylic on the back and the edges of the backing.

Glue Project

On the Whale I used the hot glue on the large upper dark part of the whale. Then used the woodworkers glue on all the rest of the parts. Using just dots of glue will be ample to hold the parts. Make sure some glue is placed on the back of the eye/dowel.

Put on the Hanger

There are many different ways to hang the projects, we use a method which has proven to be strong and reliable and is also adjustable. You could use a "Saw Tooth" hanger but more times than not the project seems to hang crooked and then when you try to make an adjustment to another location on the hanger the project will hang crooked in the opposite direction so we have pretty much abandoned the method. We have found for us the best thing is to use a "Mirror Hanger" which can be found at Walmart and Kmart as well as many home centers and hardware stores. Mirror hangers come in many different sizes. For the projects in this book we used a "small" hanger.