SCROLLSAWER.COM - SCROLL SAW WOODWORKING & CRAFTS MESSAGE BOARD

XMAS THEMED SEGMENTATION/INTARSIA SCROLLING CHALLENGE CLIMBING SANTA BY JIM MOSS (A.K.A.JIM_MEX)

INTRODUCTION

Cord climbers are traditional folk art toys normally in the form of simple cookie-cutter type cutout shapes, typically of clowns, sailors, bears or monkeys which have the ends of their outstretched arms drilled with angled holes through which a cord is strung. Two cords, one for each arm, hang down from a pivoting bar. By pulling alternatively on the ends of each cord the shape climbs up to the pivot bar. Releasing the tension from both the cords at the same time causes the shape to slide back down to the bottom

This scrolling challenge takes the idea of the cord climber to produce a segmentation or intarsia crafted project which can formed and finished either simply or more complex dependent on the wishes and skill levels of the scroller.

The following guidelines show how this project, a climbing Santa, can be made and is intended to serve as an aid for new or relatively new scrollers to segmentation and intarsia work as well as a stimulus to obtain ideas from experienced scrollers taking part in the challenge.

These guidelines are my personal interpretation of a pattern and don't pretend to be a definite method for producing this type of craftwork. Every scroller ultimately develops his or her own approach, techniques and interpretation of these craft forms to produce a finished result and there is no right or wrong way to obtaining this. Take these guidelines for what they are, namely an assistance and one man's approach, and if you have better ideas please talk about them in the challenge thread

These guidelines concentrate on producing a project using a segmentation style of cutting. If you have not produce an intarsia or segmentation project before and are unsure of the difference between the cutting styles of these two craft forms please check out http://www.scrollsawer.com/forum/intarsia-inlay-and-segmentation/25463.htm for a very simple graphical explanation

Having cut out the individual parts of the pattern the subsequent shaping and assembly techniques are common to both a segmentation and an intarsia project made to the pattern

The finishing technique, in particular the colour of the project, can be much more variable and how this is achieved is entirely at the discretion of the individual scroller.

The more 'purist' approach to intarsia will aim for a finished project which uses only the natural colour and/or grain of the selected woods to achieve the final look, usually enhanced with some form of transparent finish - wax, oil, shellac or varnishes. However, intarsia projects may also include the use stains or ebonizing techniques to enhance the colour of the woods used.

The use of colour in segmentation projects is generally much more variable and usually includes the addition of colour either through paints, inks, stains, or dyes as well as the natural colour of the wood used.. My project uses acrylic paints to cover a grainy pine wood base. More adventurous scrollers may also use non wooden materials in their projects, for example, a real brass buckle could be used for Santa's belt or a bell could be added to his hat. In this challenge there are no limits and participants are encouraged to think outside of the box with the idea being to see a large variation in finished products using a common pattern theme.

I hope as a participant you enjoy this challenge. Don't be shy in joining in by posting comments in the thread. If you need any help or advice, or want to respond to anyone asking for the same, or if you have any tips or ideas to make this challenge a little better, or crazier, we want to hear from you.

Good luck!

Jim

A Cord Climbing Santa - Segmentation Style

The pattern

As a challenge participant, you will have received with these guidelines a pattern which I have designed especially for this challenge. Please do not distribute this to others without my express permission otherwise you will be subject to infringement of copyright.

The pattern will just fit on a US letter size page but may give printing issues since it falls outside of normal page margin setups. For this reason I have split it into two parts. Please print these out and tape them together to form a master copy. You will probably need to print several more of these patterns as you begin to cut out the pieces, especially if you decide to make an intarsia style project.

Two patterns are provided, one as a black line drawing, the other as red. I find that using a red lined drawing makes it easier to see where the black scroll blade is in relationship to the pattern line and I suggest that newcomers also use this option

Materials and tools required

Scroll saw plus blades – I use a budget model scroll saw for my work and it gets the job done so any reasonable quality scroll saw will suit. The choice of blades should be such as to easily and precisely cut 3/4" thick softwood. My preference is for Flying Dutchman #3 and #5 Ultra Reverse blades. For hardwoods I use the FD #3 Polar blade

Wood - One piece of a light coloured wood board approx. 18" x 8" x ¾", not too hard, and not too heavily grained – clean pine or poplar are good choices. This should be smoothly sanded on both sides and completely flat on the underside of the board so it doesn't rock on the saw table during cutting

Backing board – 12" x 12" x 1/8" thick good quality plywood or thin MDF

2" wide clear packing tape

Spray on contact adhesive or glue sticks

Sanding material –cloth backed sanding sheets similar to sanding belt material in 80, 120 and 220 grades. Wet and dry paper in 320 grades

Homemade lollipop (popsicle) sanding stick - instructions to make this tool are provided in these guidelines

A rotary tool - Dremel, Foredom or similar (optional but highly advisable) - with large and small sanding drum accessories in smooth and coarse grit sizes. A small smooth cut cylindrical carbide burr will be useful

Note – if a rotary tool is not available all shaping and sanding can be done by hand or with alternative sanding tools either homemade or shop purchased

Artists acrylic paints – colors according to the individual scrollers choice

Fine white sponge or white cotton fabric and plus a small stiffish bristled artists brush - as used for oil painting, to apply the paints

Steel wool – fine grade (optional) - used to fine finish the shaped article

WORKING CONDITIONS

Always work in a comfortable environment and seating position and with a minimum of clutter around you

Use dust extraction equipment or a comfortable dust mask along with safety glasses or spectacle especially when sanding with rotary tools

Wear synthetic, polyester type work coats, smocks or aprons which do not hold dust. These can be worn over normal warmer cotton or woolen clothing

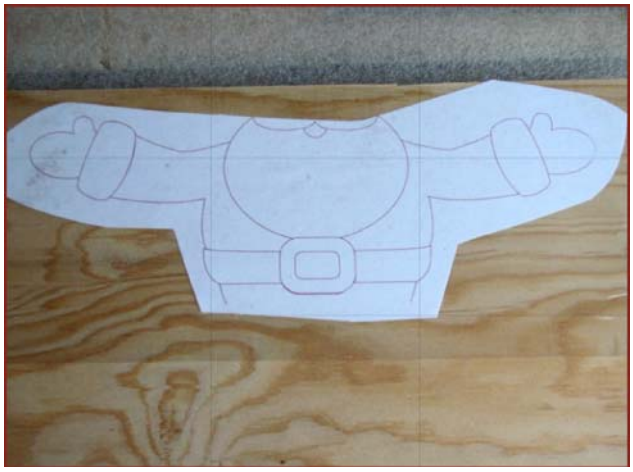
When using a rotary tool fitted with carbide burrs always wear some type of smooth stiff protective clothing in the area close to the rotary tool tip. An ideal choice is a smooth leather apron as worn by welders. Burrs can easily become accidently entwined in normal loose fitting clothing and open woven fabrics and at high speed can cause serious damage either by boring through clothing and flesh in a matter of seconds or whipping the rotary tool out of your hand sending it flying in any direction. Take extreme care when using burrs!

Hand sanding, particularly with lollipop sanding sticks is most effective when you can maintain a firm grip on a piece and apply pressure. Rest the hand holding the piece firmly in your lap on your work bench or on a stout wooden box about 6 - 8" above the height of your normal work bench – assuming you work in a sitting position. Glue a piece of 1/4" sheet rubber to the top of this box to give a really good grip

When shaping and sanding use a halogen powered flexible goose neck table lamp or similar to direct light onto your work and create shadows. This will enable you to easily see contour lines, bumps, hollows or scratches on your pieces.

Step 1 – Gluing the pattern to the board

Segmentation patterns are often cut out of one piece of wooden board but in this case the pattern is split so as to orientate the grain of the wood in two different directions to give the finished article more strength.



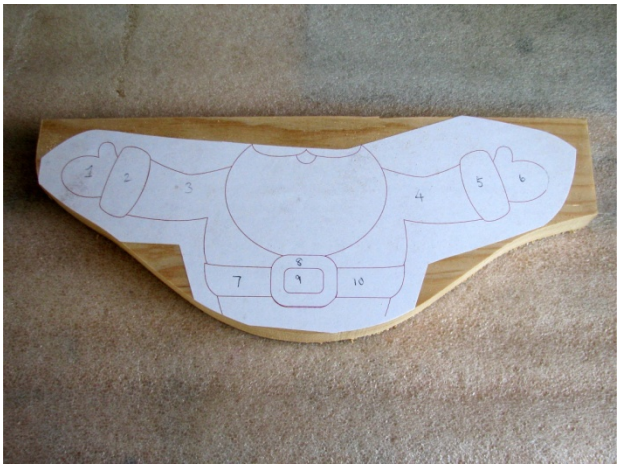
Begin by taking a copy of the Santa pattern and cut out the part including the hands, cuffs, jacket and belt plus buckle.

Take the board from which the pattern will be cut and lay this part pattern on top of it so that grain runs in a horizontal direction mitten to mitten. Move the pattern around on the wood surface until you find an area which is relatively clean of faults and has little hard grain or strong colour differences which may present problems during finishing.

Cover this area with a layer of 2" wide transparent packing tape taking care to avoid wrinkles when laying the tape down. The tape layers can overlap without presenting a problem.

Spray the backside of the part pattern with contact adhesive or apply adhesive using a glue stick and carefully and smoothly stick the pattern in place on top of the packing tape

The packing tape helps lubricate the blade during cutting minimizing the tendency to overheat and so burn the wood. At the same time the blade will stay sharp for much longer



The individual pieces of the part pattern can now be cut, however, I suggest you first rough cut approx. 1/2" around this part pattern to produce a smaller more easily maneuverable piece of wood.

Repeat this operation for the remainder of the pattern – the hat, head, moustache and beard, legs and boots –this time orientating the pattern with the grain running vertically down the body of the Santa figure.

STEP 2 – CUTTING OUT THE PATTERN PARTS

These guidelines assume the scroller has a basic knowledge of cutting out of patterns but if this is the first time you have cut out wood of this thickness make sure you have an appropriate blade installed in your saw, that the tension is set correctly, and that the saw table is set at exactly 90 degrees to the blade

Starting from the outside of the pattern begin by cutting out in order; the mittens, sleeve cuffs, belt buckle, the two belt parts and finally the two jacket parts. Note that beard is not cut from this piece of wood

When cutting, feed the wood into the blade slowly and evenly, holding the part down to the saw table with firm pressure from your fingers. Cut using a slow to medium speed and don't force the wood into the blade. This way you will obtain clean vertical cuts. Aim to follow the exact centre of the pattern line. If you drift a little away from the line gently adjust the feed of the wood to ease the blade back towards and then onto the line.

When cutting segmentation style it's not absolutely essential to keep to the pattern line and small errors can usually be tolerated provided that the cut line looks to be natural and intentional with no obvious errors

After cutting out this first pattern part repeat the procedure for the rest of the pattern by cutting out; the hat bobble, hat, hat fur trim, moustache, face, nose, mouth, beard, pants, the two pant leg bottoms and finally the two boots. It helps here to number the parts for reference and drawn a couple of indexing marks across the line division of adjacent parts. Numbering helps avoiding interchanging similar symmetrical parts such as the sleeve and pant cuffs by accident and the indexing lines help line up parts when rough assembling the project.

Note that if when you cut the pieces of the first part pattern your cutting around the inner edges of the jacket pieces, the upper and lower edges of the buckle, and the lower edges of the belt pieces wasn't too accurate you may have to lay these pieces on top of the second part pattern and redraw the cutting line where these pieces meet the beard and pants by drawing a fine line around the base of the cut edges onto the second pattern. Cutting to the adjusted pattern line should cure any bad fits.

After cutting out each piece of the pattern place it in a shallow tray or box on your workbench to prevent it from accidently being knocked onto the shop floor and possibly being lost forever!

When all the pieces of the pattern have been cut out, assemble them on a flat board to check they fit together reasonably well - see the following image. Don't worry about small errors and gaps between the parts. These are acceptable and won't be noticed after the piece is finished. If, however, certain pieces are badly cut, simply cut them again from a copy of the pattern part.

STEP 3 – SHAPING THE PARTS – THE FUN BEGINS!

Shaping can be little more than rounding over the edges of the individual parts or can be a sculptural approach to give a pronounced depth to a project. For my Santa I used a reasonable amount of shaping to create a bas-relief effect.

Before starting shaping I first made a judgment call to decide what would be the highest point of the Santa and, rather like in real life, I chose the buckle of Santa's belly. This choice was followed by the decision to make the beard the second highest point and, in view of this, I start shaping the Santa away from the beard by working first on the jackets, followed by the sleeve cuffs, mittens, belt, belt buckle, pants, pant bottoms and boots. I then shaped the beard taking care not to lower the edges too much and followed with the face, hat fur, hat and bobble

I could have lifted the beard a little higher by placing underneath it a shim (thin wooden spacer) which, due to the increased height, would have allowed me to create more roundness to Santa by shaping the beard a little from the centre to the outside edges, but I decided for this segmentation project not to do this. I did, however, lift the buckle a little as you will see later.

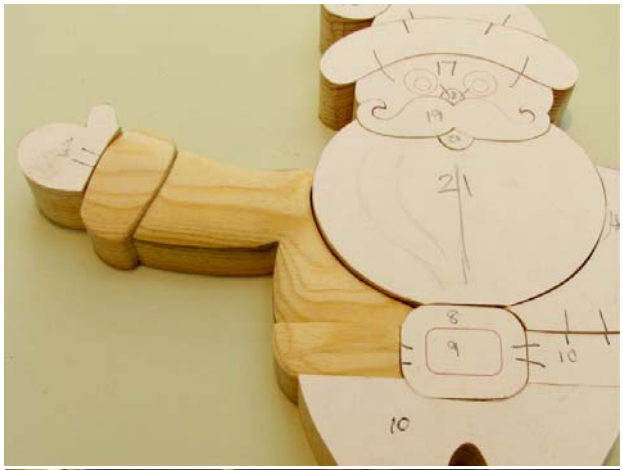
Explaining shaping is not easy so I'm including plenty of images to show my technique. If anything isn't clear please ask in the challenge thread.

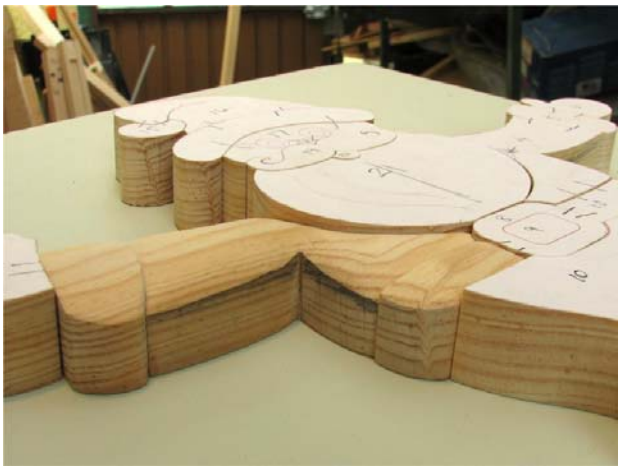
SHAPING THE LEFT SIDE JACKET, SLEEVE CUFFS. MITTEN AND BELT

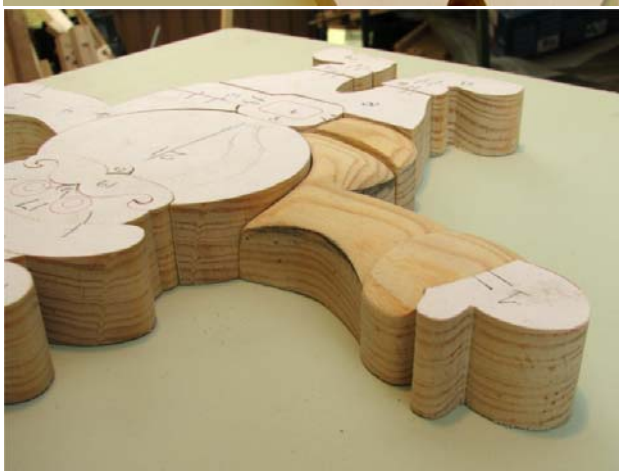
The following images show the degree the left jacket and the belthave been reduced in height in relation to the beard. The main decision here was to lower the overall height of the jacket sweeping the jacket/beard line down to a lower shoulder position. To arrive at this situation, it helps to imagine how a real life jacket would fit.

If you are really stuck on how to begin shaping try lookng at a 3D Santa ornament or plastic toy to obtain an idea how the body parts blend together

In these images I've highlighted the shaping profiles with a pencil and I show various views of the jacket and cuff and how these relate to the rest of the assembly.



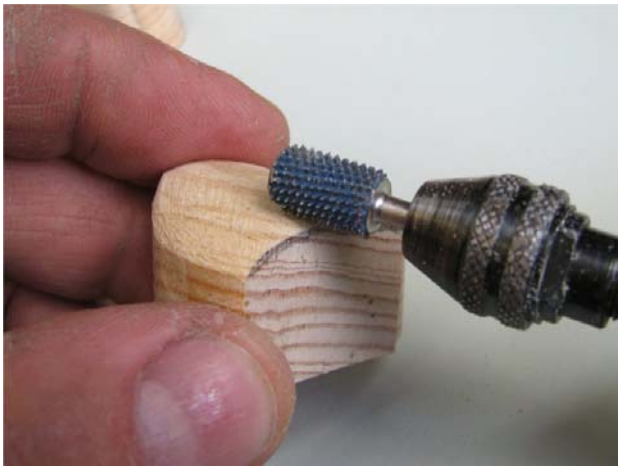




To shape the jacket first draw pencil line profiles on each side of the jacket piece similar to those in the following images and rough shape to these lines. The images show 1) the jacket to sleeve cuff, 2) the lower jacket outside edge plus the jacket to belt profile, 3) the jacket to belt buckle and 4) the jacket to beard profile plus the top outside jacket sleeve profile.

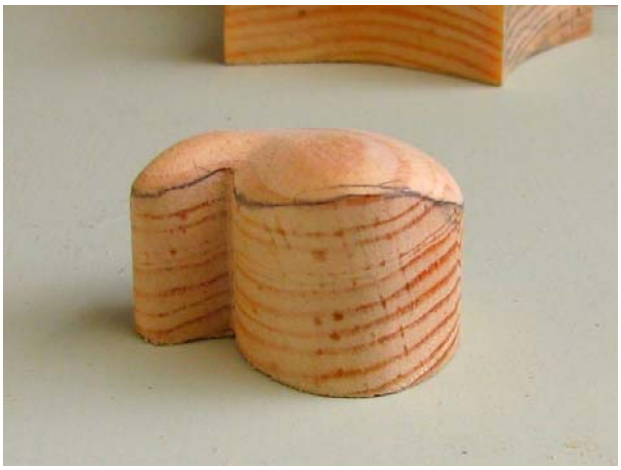
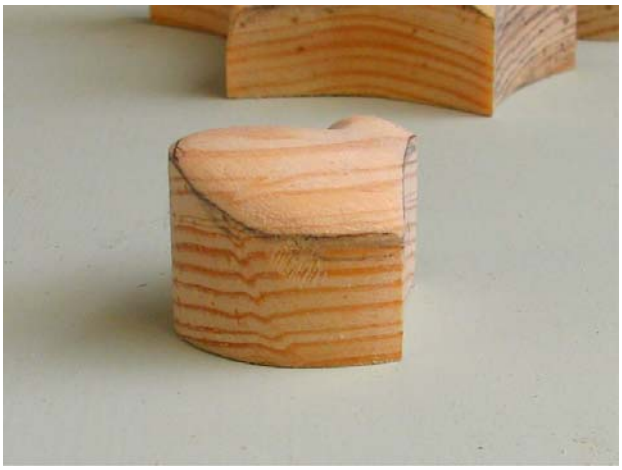
The process for shaping is generally to first using a rotary tool (in my case a Dremel) fitted with either a small cylindrical carbide burr or a coarse grit sanding drum to rough shape a piece to close to its edge profiles and then follow this by rough sanding using a lollipop sanding stick with #80 or #100 grade grit. The final sanding is by hand using strips of various finer grades of sandpaper.

The first image shows a sanding burr being used to rough shape the mitten. The same sanding burr was used for the jacket and followed by hand sanding using a lollipop sanding stick, as shown in the second image.



The next three images show the mitten, cuff and jacket assembly rough shaped and sanded. Two images follow of the cuff profiles and then three images of the mitten profiles. Note – the colour differences in these images is due to photographic lighting errors



Having completed the left side assembly, carry out the same operation to the right side jacket, cuff, and mitten parts and then shape the left and right belt parts to fit the jacket profiles as shown in this next image. Unfortunately I seem to have lost the image with unshaped pants – sorry!

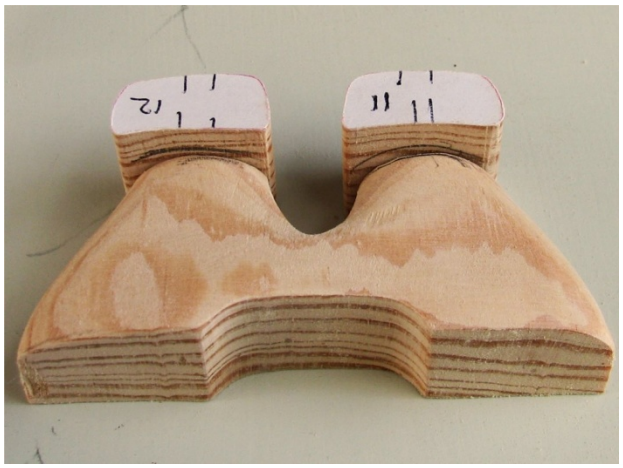
Notice on this image that the outside lower parts of the belt pieces are much higher than the pants. This will be corrected in a moment.

SHAPING THE PANTS, PANT CUFFS AND BOOTS

Shape the pants using a similar technique to that used for the jacket pieces. First imagine what the pants would look like in real life and sketch appropriate profiles on the edges.

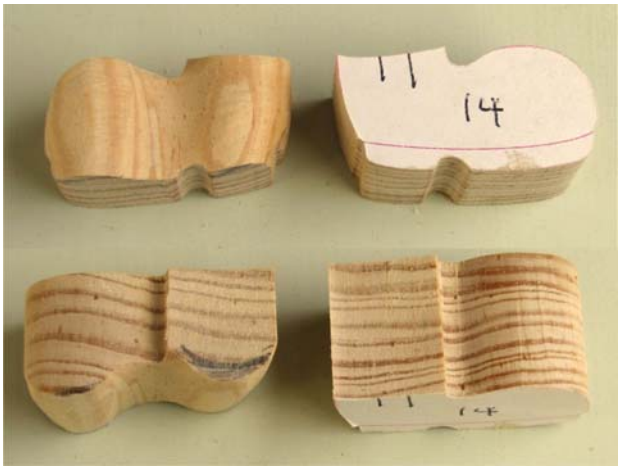
The next two images show how I used a large coarse sanding drum to help shape the pants. Here I find it convenient to grasp the piece firmly in my left hand and use the Dremel like a wand to remove material in smooth strokes in the direction of the profile curves.

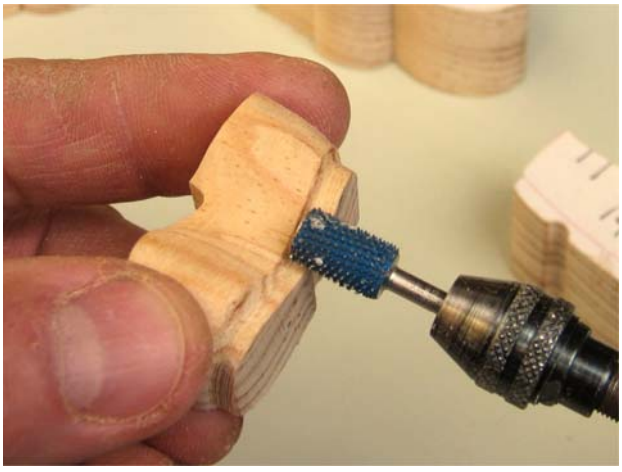
Now move on to the pant bottoms. Using the pants as a guide transfer a profile line from each pant leg onto its pant bottom part and shape these to a line slightly outside of these profiles to make the bottoms a little higher than the end of the pant legs. The result should look similar to the second image.



Now fit the pants up to the belt and buckle parts and shape the outside lower edges of the two belt parts to the profile of the top of the pants.

Next it's the turn of the boots. Rough shape the outer side of the boots with the large sanding drum by holding the piece vertically and shaping as shown in the lower view of the first image. Next, carefully detail the line of the boot sole using the carbide burr. This can also be done with the small drum sander accessory.



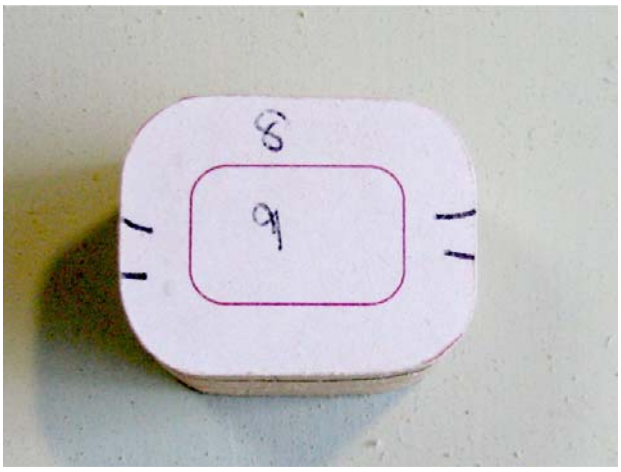


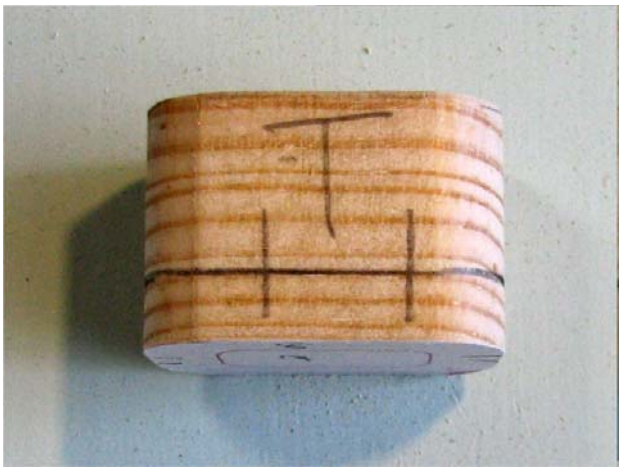
Finish the boot by rounding the toe and neck using the lollipop sanding stick to give the results shown.

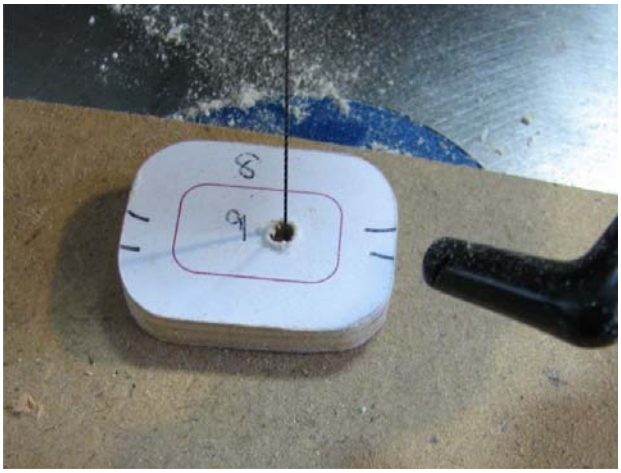
Shaping the Belt Buckle

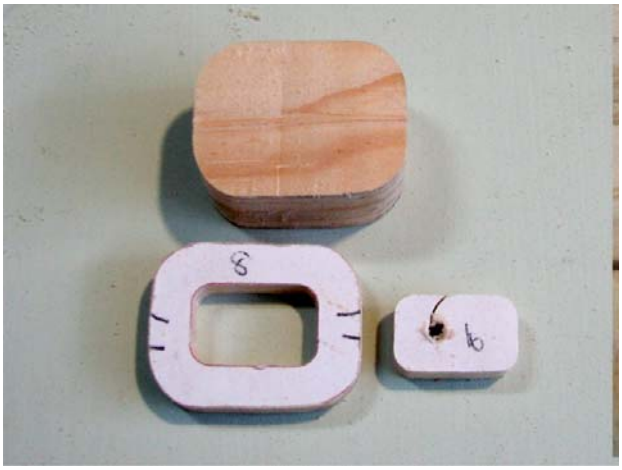
The belt buckle can be shaped in different ways. Experienced scrollers may choose to cut out the centre of the buckle by drilling a hole on the inner circle line and, using a fine tooth blade, carefully cut out the inner piece. This is not so easy when dealing with thick wood so I decided on a simpler approach

First draw a line on the top side of the buckle to produce a slice sufficiently thick to be easily cut off on the scroll saw. Draw a couple of reference lines on this surface across the full width of the piece. Cut off this slice on the scroll saw very carefully feeding with the minimum of pressure whilst holding the piece down very firmly to the scroll saw table. Since this slice will probably be thicker than required carefully reduce its height by sanding it down on a flat piece of #120's sanding belt, using smooth circular movements to keep the top and bottom faces parallel to one another. Stick this slice onto a piece of thin MDF or soft plywood using double sided tape and drill an entry hole in the centre of it to pass the scroll saw blade through. After threading the blade carefully cut out the centre of the buckle.

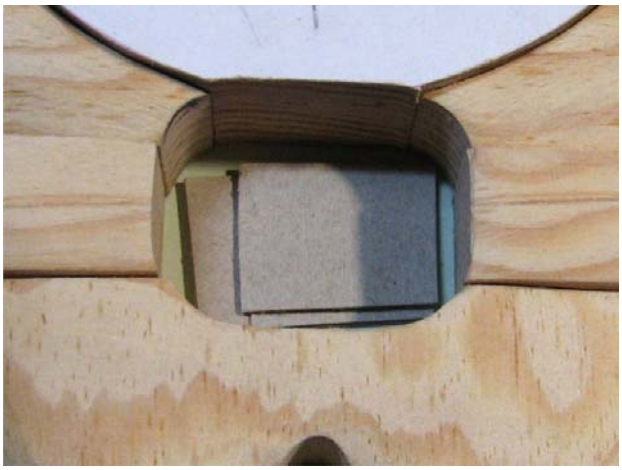








Loosely assemble the buckle slice onto its bottom part along with the rest of the pieces to see how it looks. Remember here that the buckle is supposed to be the highest point of the Santa and by sanding down the top part you will have reduced the overall height of the assembly - see the first image. To get around this problem later you will use a shim or spacer under the assembly to lift it up a little. As a provisional solution to see what it looks like slip some pieces of thin card into the hole where the buckle assembly fits and then placed the assembly back in place. After sanding the buckle part smooth test the height again to check it's to your liking.

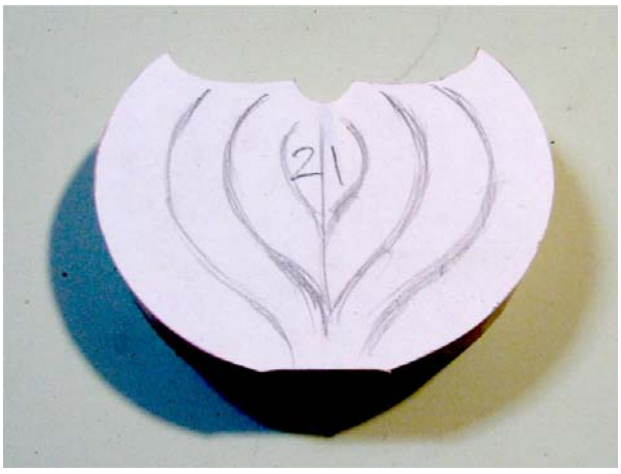


SHAPING THE BEARD, MOUSTACHE AND MOUTH

When shaping the beard it's important not to lower its sides very much otherwise they will end up being lower than the jacket parts. To avoid this risk yet still make the beard look interesting I used a carving technique on the surface of the beard to suggest flowing hair.

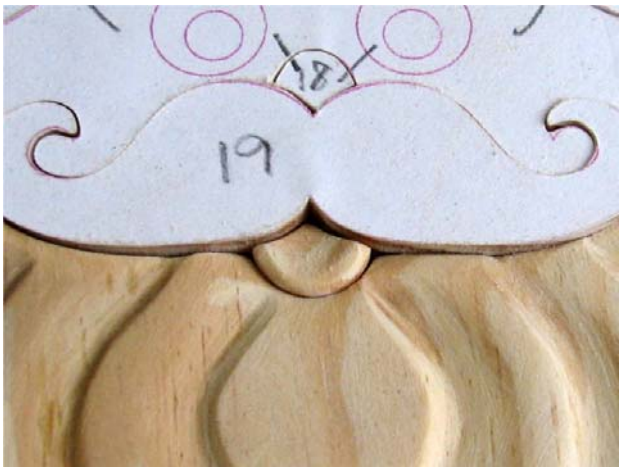
Draw some symmetrical lines on the pattern surface and using the large drum sander in your rotary tool 'carve' out these lines.

Here it's important to use a constant angle between the sander drum and the wood surface and sand in soft flowing movements. The aim is to produce a groove which is at its deepest on an inside line and finishes at its highest on the next outer line as shown in the following images.



Having sanded out these grooves, all that remains is to make the overall shape smoother. To help get into the grooves to smooth them apply finger pressure to the end of a piece of tightly rolled #120's sanding belt.

To shape the mouth sand a small depression at the top edge of the piece and round the bottom edges over a little so that Santa seems to be cheekily sticking his tongue out. To accentuate this effect sand the top edge of the beard down a little. This will also help to accentuate the moustache



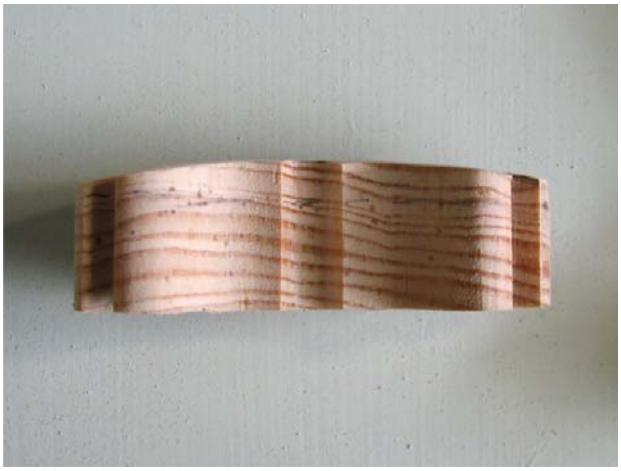
To shape the moustache use the rotary tool with the small sanding drum accessory to roll over the edges and also give a little shape to the centre part of the moustache. I could have obtained a more pronounced look by lifting the moustache a little in height with a thin shim (spacer) underneath it but I decided to leave it as it is.

The close up shows the moustache shaping and how I lowered the top edge of the beard a little. Also the top edge of the moustache is lowered a little to make the piece less flat overall.

Take care and go gently when shaping the points of the moustache as it's very easy to accidently knock the tips off!

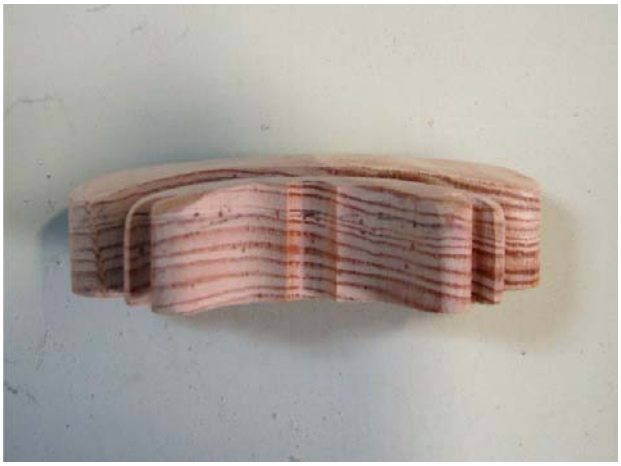
Shaping the Face and nose

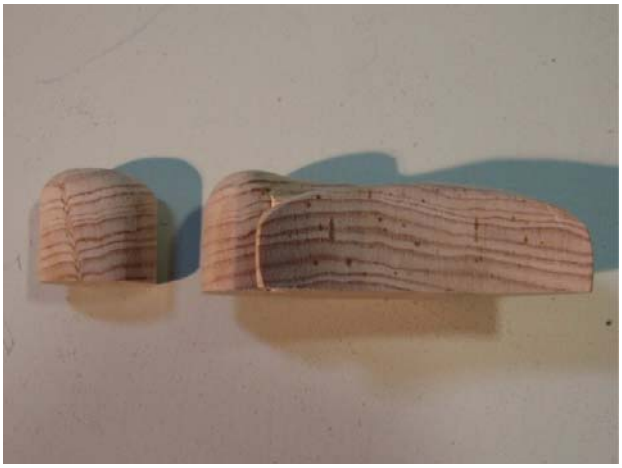
First reduce the overall height of the face which will throw the nose and moustache to the front along with the hat fur trim. Next curve the face outwards from its centre to its edges to give a rounded effect as shown in the first image where the face piece is sitting on its top edge. After fitting the face in place, lower the nose slightly and round its end so that it sits just a little below the height of the moustache – this not only looks better but will protect it from being accidently knocked off in use. The plastic eyes are there to show what the face will finally look like.



Shaping Santa's hat

Using the top edge profile of the face, sketch this onto the hat fur trim part as a guide and then sand the trim to shape as shown in the first image and smooth over its edges. Transfer the top edge profile of the fur trim onto the hat piece and shape the hat with the help of the cylindrical carbide burr, lowering the left side of the hat - as you look at it - underneath where its peak doubles over to the bobble. After smoothing the hat, shape the bobble, lowering and rounding the top of it over to fit in with the hat peak. The second image shows the lower side view of these two pieces





All the pieces of the Santa figure are now shaped and rough sanded and can be assembled to check for any minor changes which may be required

Shaping the eye sockets

To give the Santa a little more appeal to young children I decided to use a pair of glued on plastic 'wobbly' eyes. These eyes can be stuck directly on to the face but its better if they are slightly sunk into purpose made sockets since they are less likely to become unstuck or pried off by small finger nails. The sockets can be drilled using a centre point drill very slightly larger than the diameter of the eye. Alternatively they can be carefully shaped using a fine cylindrical flat ended grinding stone or burr in a rotary tool. In the latter case it's necessary to transfer the outline of the eyes to the surface of the face as a shaping guide. For the drill technique it's only necessary to mark the centre point of each eye.

I used the grinding stone technique. The image shows a little burning of the wood during shaping of the sockets, however, as this area will be covered by the eyes it's of no concern.

The socket should be no more than 1/32" deep with the edges very gently smoothed with fine sandpaper or steel wool.

This completes the shaping of Santa. The end result should look something like this:-

Once you are satisfied with the shaping go over all the pieces very carefully with #220's grade sandpaper or finer to smooth out any rough parts. This is best done whilst working under a bright white gooseneck lamp in order to see any faults.

4. Drilling the cord holes in the mittens

Before applying the finish you must drill the holes in the mittens through which the climbing cords will be strung. I use a power drill for this operation but you can also use a tradition hand operated drill or a drill press.

Begin by marking a pencil line at on the left mitten (looking at the Santa) at 45 degrees to the horizontal of the assembled Santa running from the outside lower edge of the left mitten part to the inside upper edge, exiting about half way down the thumb. Clamp the mitten to near the end of a board, securely clamped to your work surface at around waist height, making sure that you orientate the drawn line parallel to the short edge of the board. At a point about half way down the height of the mitten slowly and carefully drill a 1/16" diam. pilot hole straight through the mitten taking care to keep your drill bit parallel to both the board surface and its short end. Once completed change the drill bit to 1/8" and repeat the drilling operation to open up the hole. Repeat this exercise again with a 3/16" drill bit to obtain the final hole size as shown in the last image. Whilst it's possible to drill the 3/16" hole in one pass I don't recommend this as it's all too easy to split the wood.

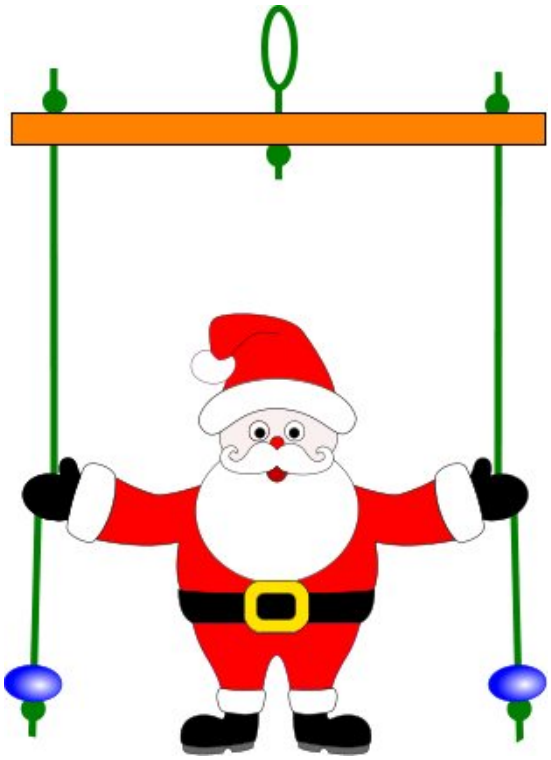
Repeat this operation for the right mitten as a mirror image of the left mitten part and after drilling both mittens widen the entrance and exit holes a little using sand paper or a small conical stone accessory in your rotary tool and then sand them smooth.

If you don't have access to a drill it is possible to sand or carve out an equivalent positioned groove on the base surface of the mittens since these parts will be backed by a piece of thin ply which effectively will cover the groove creating a bore hole. The only difference will be that the cords will hang further back through the mittens.

5. The pivot bar

Traditionally the pivot bar from which the cords are strung is a length of 3/4" x 3/4" wood or similar which is a little longer than the arm span of the Santa. Drill a hole through the centre of this piece through which a cord loop can be passed to hang the bar from a hook or peg. Either side of this centre hole drill another hole through which the two cords which support the Santa can be tied. The distance between these two outer holes is equal to the distance between the two upper mitten holes of the Santa as shown in drawing.

Note the beads strung on the end of each cord prevent the Santa shape from falling off of them.



6. Finishing Santa

For the finish of this project I applied artists acrylic paints to the individual pieces and lused a technique which involves wiping back a little of the paint to allow some of the grain of the wood to show through.

Begin by painting the hat, jacket and pants parts bright red. Using a fine pore white sponge or a small pad of white cotton fabric soak up a reasonable amount of slightly diluted paint and quickly rub it over all of what will be the visible surface of the individual parts. To get into tight corners apply the paint with a small stiff bristled artists paint brush. Before the paint has time to dry rub it firmly in the direction of the wood grain. This action removes any excess paint and reveals some of the harder grain in the wood. Before painting the actual pieces you should apply paint to some sanded scrap pieces to see the effect you will achieve on the actual project parts. This will allow you to gauge the dilution needed for the paint

When applying the paint to the parts it's important that you don't apply it to the majority of the base of the part – you only need to roll over the edges so that no bare wood is seen on any visible surface. Neither should you add paint to where parts will be glued to one another. It helps here to first pencil mark the areas of the pieces which are not to be painted.

Whilst applying the paint you can usually support most of the pieces by holding the areas that will not receive paint between your fingers-. For more intricate pieces not easily held you can use a small dab of hot melt glue to fix the part to the end of a length of dowel such that it can be easily removed after painting

The following images show this finishing technique applied to the right side jacket part.

All the parts are finished in a similar manner and left for 24 hrs to dry.

7. GLUING THE ASSEMBLY TOGETHER

When all the painted parts are perfectly dry they are glued together as an assembly. The assembly will then be stuck down onto a purpose made backing board. This backer not only makes the reverse side of the assembly much neater looking but also gives it significant added strength by bonding the individual pieces together.

When using a backer the parts of the assembly do not need to be excessively glued together, they just need enough glue to hold them together until the assembly is firmly stuck to the backer.

I glue the assembly using a quick curing transparent drying tacky wood glue. I generally start by gluing the centre pieces of an assembly together and work outwards but as this Santa assembly is small and not too complicated I was able to glue up some sub assemblies first as shown in the following image.

The two pieces on the left – the left mitten and cuff – show where I place a dab of glue on each part. It's important to only place the glue on non visible areas and keep it away from the visible edges because when the two pieces are pressed together the glue will spread sideways a little and if in excess may flow out over the painted visible surfaces. For this reason you should only use a minimum amount of glue.

When gluing pieces together its important to make sure the assembly is perfectly flat. Choose a flat board or work area space for the gluing operation. Larger pieces may need some weight placing on top of them to prevent them from buckling or bowing. To stop the pieces from sticking to the board or work area place a piece of clear plastic sheet or acetate film underneath them which can be easily peeled off once the glue has set. If you need a reference in positioning the pieces stick a copy of the pattern to the board to view through the plastic.

Some pieces may require clamping to hold them firmly together. Alternative glue the assembly together on top of soft board and place pins around the periphery of the pieces to prevent them from moving.. Do not try to glue all of the assembly together at the same time, rather glue it in stages allowing the glue

for each stage to set before processing to the next one. It is very important here to not move the glued assembly until the glue has fully cured

Note – when cutting pieces using this segmentation technique the assembly can never be glued together tightly to the original pattern. This is because the individual pieces will be separated naturally by the kerf thickness of the scroll saw blade which was used to cut them. For small assemblies such as this one this should not create a problem and the pieces can be fitted tightly to one another without grossly distorting the pattern. For larger more complex assemblies it is often better to use a thick gap filling glue and deliberately attempt to maintain this kerf thickness. When the piece is finished the top varnish will usually fill up this gap and it will go unnoticed.

Having glued all the parts of the Santa assembly together the result looks like this:

OOPS – I MADE A MISTAKE HERE!!!

In my haste to glue up the assembly I completely forgot to place a spacing shim under the belt buckle to lift up the piece as I mentioned earlier. Sorry but nobody is perfect, but if you don't tell anyone then neither will I !!

8. Making a backer

To give the assembled Santa more strength and to tidy up the reverse side of the piece I made a backer. This is a piece of thin plywood which is cut to a size slightly less than the outside profile of the Santa assembly.

To create this backer take a piece of 1/8" plywood and orientate the grain of the ply such that it runs vertically inline with the length of Santa's body. Place the Santa assembly on top of the plywood and using a sharp pointed pencil trace the profile of Santa onto the ply taking care not to draw on the base of the painted parts.

The trace line will give the shape of the backer except that in order that it is not visible when Santa is viewed from the front it needs to be shrunk a little in size to the correct cutting line. To do this take a thick felt tipped marker pen which will give a line stroke of just under 1/8" width and carefully and precisely draw around the inside of the traced pencil line so that the outside edge of the marker stroke is exactly on the traced pencil line. The inside edge of the drawn marker line will give the cutting line for the backer.

The second image shows this marker profile and the final image the cutout. Note here that the colour difference in the plywood is again due to the quality of the light when shooting the images.

Before gluing this cutout to the back of the Santa assembly, smooth the edges and sand them back at approximately 45 degrees so that when the piece is stuck to the Santa the backer is not so conspicuous.

Color the inside edge of the reverse side of the assembly black using a broad tipped permanent marker to approximately 1/4" line thickness and also color the sanded edge and what will be the outside face of the backer black using stains or paint. This will give a neat finish to the reverse of the Santa after the backer has been stuck down.

Stick the backer in place using a uniform coat of tacky wood glue and place a cushioning pad and then weights on top of the Santa assembly to hold it firmly in place whilst the glue sets overnight.

The glued backer should look similar to the part detailed in this image

9. Applying the top coat

The paint application on the Santa assembly is protected using a finishing top coat. I chose a solvent based transparent acrylic top coat used for automobiles which I applied by spraying using 4 thin top coats to build up the quality of the final appearance. When using acrylic paints to give color to a project its advisable not to fine sand the top coat between the first two applications as there is a big a risk of damaging the paint surface. Any minor surface blemishes will usually fill with top coat and can be very carefully smoothed out with #400's or #600 sandpaper after the third top coat has been applied and is thoroughly cured,

Once the final top coat has been applied and cured, the surface can be buffed up using a soft cotton rag to give Santa a really nice gloss.

10 Stringing Santa up

All that remains to complete this project is to string Santa up on his cords and tie him the to the pivot bar, as shown in Part 5. When selecting the cord I used a braided variety which has a little give in it when pulled. It's important to select a cord size which passes freely through the mitten holes but at the same time is not too slack a fit. Be generous with the cord lengths, at least 4 ft of climbing space will give Santa a good workout and keep the kids amused

Don't forget to attach a drilled bead or a colourful button to the lower end of each cord. Not only will this give a grip for small fingers to pull on, it will also stop Santa sliding off onto the floor!!

Pivot bar variations

In my original project posted on the forum at the beginning of the year I made a decorative pivot bar in the form of a rooftop. This can be seen by following the link

http://www.scrollsawer.com/forum/intarsia-inlay-and-segmentation/27319.htm

If you want to include this pivot bar in your project please contact me in the Challenge thread and I'll send you a pattern. Alternatively you could try designing your own pivot bar using a different theme, for example a sleigh loaded with presents, a horizontal Christmas cracker, a colourful Christmas cane.

If you make a decorative pivot bar be sure to check in the previously mentioned link how the reverse of the pivot bar needs to be adjusted in order that it hangs correctly.

If you need help just shout!

To conclude these guidelines I'm briefly going to touch on some points to take into consideration should you decide to make an Intarsia based project rather than a Segmentation one.

The difference between an Intarsia and Segmentation Santa project

As I mentioned previously, the only real difference between an Intarsia based Climbing Santa project and the Segmentation one I've just described is that the former uses a variety of woods from which the individual pieces of the pattern are cut and does not use paints to provide the final colour. The shaping process used, however, is identical for these two craft styles.

If you have access to exotic woods then its possible to produce an Intarsia based Santa which uses no artificial colour and simply finish your shaped project with a transparent top coat. Since I have limited access to such woods I enhanced some of my wood choices by staining with alcohol based stains. These have the advantage that whilst providing the colour I want they still allow the natural grain of the wood to show through.

Some will argue the merits and skill requirements between Intarsia and Segmentation work and often refer to Segmentation as being an inferior craft form to Intarsia. My personal view is that from the crafting aspect this is not the case as each form demands a similar level of skill, albeit in different areas.

For Intarsia work it's important to be able to accurately cut and then fit together the individual pieces of the pattern such that they form an assembly with the minimum of gaps between the component pieces. When pieces are inaccurately cut they either have to be rectified such that they fit tightly up to adjacent parts, or, in a worse case scenario, may have to be cut again. For Segmentation work, fitting is generally less problematic because usually only the saw kerf separates pieces cut from the same length of wood and therefore they will naturally fit together well. Segmentation projects, however, often demand a high degree of skill and attention to detail during the application of colour, particularly when painting, to achieve a professional looking piece.

Just to repeat an earlier comment. For both craft forms I use practically the same shaping technique.

A less tangible skill aspect of Intarsia work and one which distinguishes very attractive projects from 'average' looking ones lies in the ability of the scroller to choose interesting combinations of wood colour and grain for his or her project compositions. Guidance can be given to newcomers to Intarsia in selecting and combining woods for a particular project but it's of particular importance that a newcomer learns to study his or her subject in 'real life' along with the work of accomplished intarsia artists to see how they interpret their subjects. Experimentation and experience, in many cases through trial and error, will develop an individual's composition skills and newcomers shouldn't be disappointed if their first results do not produce 'masterpiece' combinations of natural woods, rather they should strive to improve with each new project.

Wood choices for an Intarsia Climbing Santa

As a general guidance try to select woods which give good colour combinations appropriate to the subject and where possible introduce grain effect to enhance the composition

For my Santa I used the woods which I can find locally, as follows:

Santa's suit – mahogany stained red

Suit 'fur' trims and hat bobble – poplar (clean whitish)

Beard & moustache – pine stained white

Belt, mittens, and boots – walnut

Face and nose – beech

Eyes – beech stained white with the centre painted – note I made these from bought in 'axle pegs' for toymaking

Mouth – beech, stained reddish purple

Belt buckle –maple, stained yellow/gold

To finish the assembled Santa I use several coats of Miniwax water based satin PolyAcrylic protective finish. This was chosen since it will not yellow with age and therefore the fur trims and beard should stay whitish in appearance for a good while.

Cutting of the pattern pieces

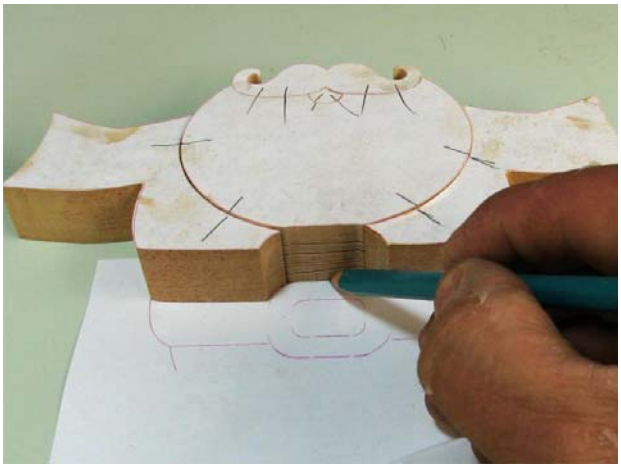
Intarsia work demands skill in cutting out the individual pattern pieces from different woods such that they tightly fit against one another during assembly. Cutting skill is something that comes with practice and more often than not newcomers to intarsia will have some problems achieving good tight fits between adjacent pieces in an assembly.

When cutting pieces for Intarsia projects, unlike in Segmentation work where I advise to cut exactly on the centre of a pattern line, I guide the blade so that it just touches the right hand or 'waste' side of the pattern line. I also almost always rotate the piece I am cutting in an anti clockwise direction into the blade. This means that if I stray from the line I will usually drift into the waste part of the pattern piece because of the natural inclination of a scroll blade to err in this direction. As with Segmentation cutting if I see I am drifting away from the line I will gently and smoothly come back to it.

After cutting each piece I lay it on top of a copy of the pattern to check its fit. If I see that it is not true to the pattern I have various options to rectify the situation.

If the piece is larger than the pattern drawing, in other words it overstretches its pattern line boundaries; I can chose to rectify it by carefully sanding away the excess material using a rotary tool with sanding drum attachment, or a spindle sander or hand sanding with a lollipop sanding stick.

If the excess size of the piece can be accommodated in the finished assembly without dramatically affecting the pattern design I can choose to use it as it is. In this case I will have to make a correction to the pattern line of the adjacent pieces in order that they will also not be too large. To do this I lay the piece on a pattern copy where it should fit and I carefully draw around its base with a sharp 4H or similar pencil onto the pattern. This action will provide me with a new pattern line to cut where the piece either overlaps or doesn't quite reach the pattern line for cutting adjacent pieces.



This cut, check, rectify and if necessary redraw the pattern technique is applied to all the pieces of the project assembly

Here you can see the pieces cut and loosely assembled. The silvery lines linking pieces are pencilled positioning marks.

CUTTING THE BELT AND BUCKLE ASSEMBLY.

For this intarsia project I used a different approach to cutting the belt and buckle pieces to show that there is more than one way to produce a similar end result.

I cut the left and right belt parts plus the buckle as one piece from piece of walnut. Afterwards I cut a separate buckle piece from hard maple and after shaping, sanding and staining it I glued it on top of the walnut piece. To give a good glue bond I roughed up the contact faces of the two woods using a small pointed burr in my Dremel. This time I also remembered to place the buckle higher than the rest of the Santa!

FORMING THE EYES

Rather than use plastic eyes I used a bought in axle peg normally used to secure wooden wheels to toys and drilled the head to take the peg shaft and partially countersink the head. Before gluing the pegs in place I stained them white, painted the iris and pupils with acrylic paints and gave them a coat of finish. I guess Santa would look less surprised if had eye lids and brows! This is something that is open to interpretation by the Challenge participants.

As an alternative to axle pegs ordinary dowels can be used after rounding over the ends.

Pre-assembly finishing, gluing up, top coat finishing and making of a backer.

This is similar to the Segmentation process in that all pieces given at least one coat of finish on all visible surfaces prior to gluing up the assembly. When applying a finish to stained pieces take care to clean your brush before moving from one stain colour to another, or to an unstained piece, since stain pickup by the brush can occur and can lead to contamination of pieces.

Once all pieces have received a finish coat they are assembled in a similar manner as was the Segmentation Santa. Likewise, application of several top coats and the making of a backer follows an identical process.

This completes the process for crafting an Intarsia based project

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APPENDIX

LOLLIPOP SANDING STICKS

These are simple handmade sanding sticks formed by wrapping and gluing a piece of 1/4" thick soft sponge rubber around a length of wooden dowel – usually of 1/4" or 3/8" diameter – which acts as a cushion around which a piece of cloth backed sanding belt is wrapped. The belt is secured by staples into the dowel.

The overall length of the sanding stick is around 8" long of which 4" is handle. The overall diameter of a 1/4" dowel stick is approximately 7/8" and of a 3/8" dowel is 1 1/2"

Lollipop (or popsicle) sanding sticks are very effective shaping tools and are easy to use and control. They can be made in a number of grit grades - I usually have an #80's and a #120's grade in the two diameters. It's also possible to use a lollipop sanding stick with a second piece of belt hand held around the permanently fixed one making it easy to quickly change grit sizes whilst moving from rough sanding to fine finish sanding.