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[Gordons hazelnut D-bow build along TUTORIAL](#)

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« on: January 07, 2008, 08:28:56 AM »

Here is a tutorial version of **Gordon Fertlitsch's** hazelnut D-bow buildalong.



Online

Posts: 4745

Since beginning my journey into building wooden bows I have received invaluable assistance from the good folks on this board. I dare say I would not be where I am without it. It's time then I return something back to the community. I am constructing a bow for a gentleman in Washington and will post the steps as I go. For the more experienced bowyers on this site this thread will probably not reveal anything new or particularly interesting. But if it helps demystify the process for some of the folks among us who are new to bow-building, then it will have served its purpose.

The bow will be short (60" or less), bend through the handle, hunting weight (hopefully), and made of hazel-nut. A caveat – I have built a few longer bows with this wood but do not know how it will hold up with this design. In other words, I may not succeed. But I'll give it a go anyway.

The log was given to my by Bryan Briand and was about 3" in diameter. While the log was green, I sawed it in half and peeled the bark off. The stave has been drying in my garage for about 6 months. Following is a picture of the stave.



I start by reducing the stave to a width that is just a little wider than the finished bow – about 1 5/8” in this case.



Next I mark where the handle will be. I like to build my bows using an asymmetrical design because they balance better in my hand. To do this I first mark the center of the stave and then make the top of the handle 1" inch above center. I then mark the bottom of the handle 4" inches from the top.



I am now ready to begin roughing out the thickness taper for each limb. I begin by dividing each limb into 8 equal sections.



Then I will mark the taper from the back of the bow using a tool that I made for this purpose. For this bow the initial taper will go from 1" at the handle to 5/8" at the tips.





Next I carefully cut outside the taper lines using my bandsaw. I don't try to do this using one cut, but instead cut one side at a slight angle then turn the bow over and cut the other side. This helps ensure that I do not accidentally remove too much wood.



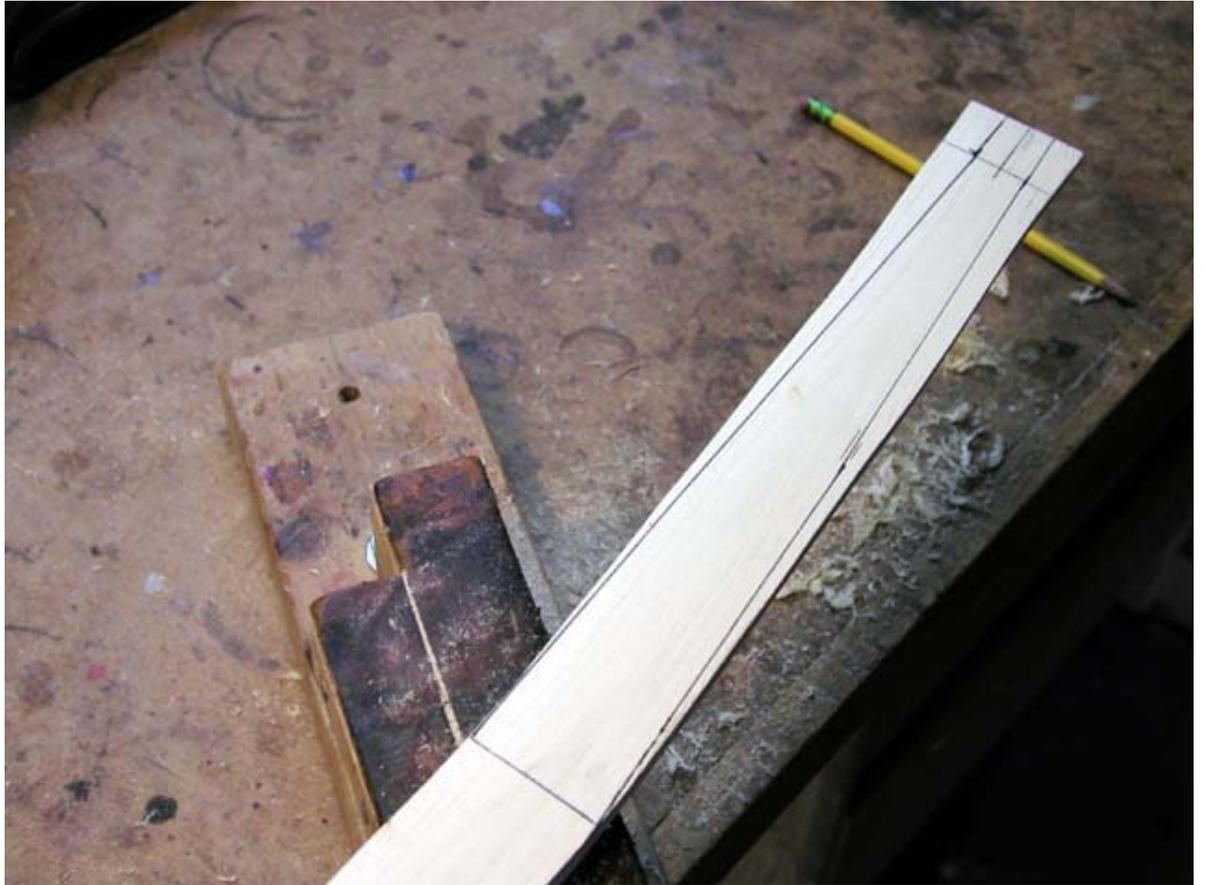
I use a rasp to remove the crown on the belly where the two cuts meet.



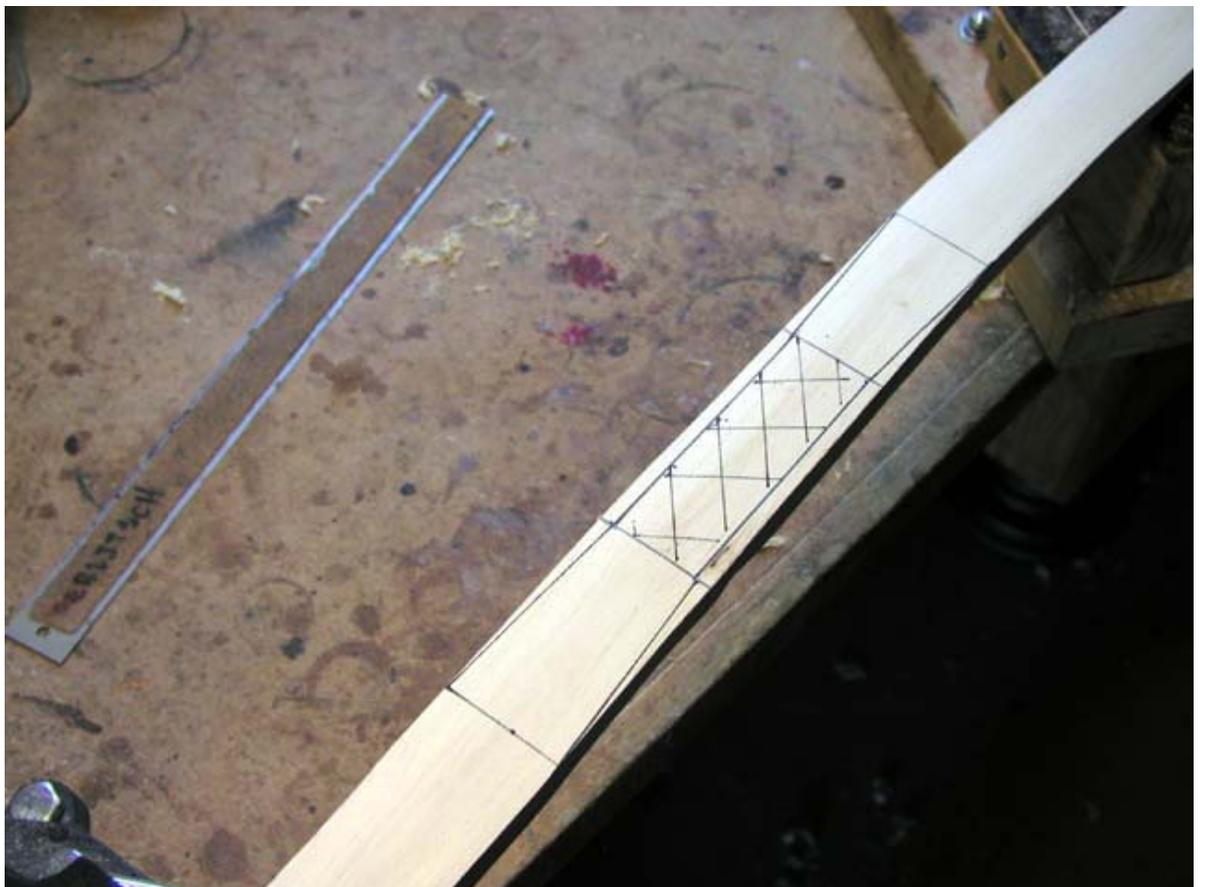
Here's what the bow looks like when I am done.



Now I'm ready to cut out the outline of the bow. I start by drawing the limb taper on the belly of the bow. I make a mark 1" up from the end for the nock and mark the taper about 12" up from that. I initially make the tip wide (about  $\frac{3}{4}$ ") so that I can later make small adjustments to the string alignment if necessary.



I draw the handle 1 1/4" wide and the fadeouts about 3" long each.



Here is what the roughed out bow looks like after I am done cutting on the bandsaw.



Next – floor tillering and steam bending.

Here's the bow after roughing out – not bending much yet.



After roughing out the bow I run my fingers along the length of the limbs looking for spots that are obviously too thick or thin.



I then work on any spots that I've marked for material removal.



Thin spots are marked with an X so that I avoid them when removing wood. I then repeat the process of removing wood and checking limb thickness with my fingers.



After a few iterations of wood removal the bow is bending a bit.



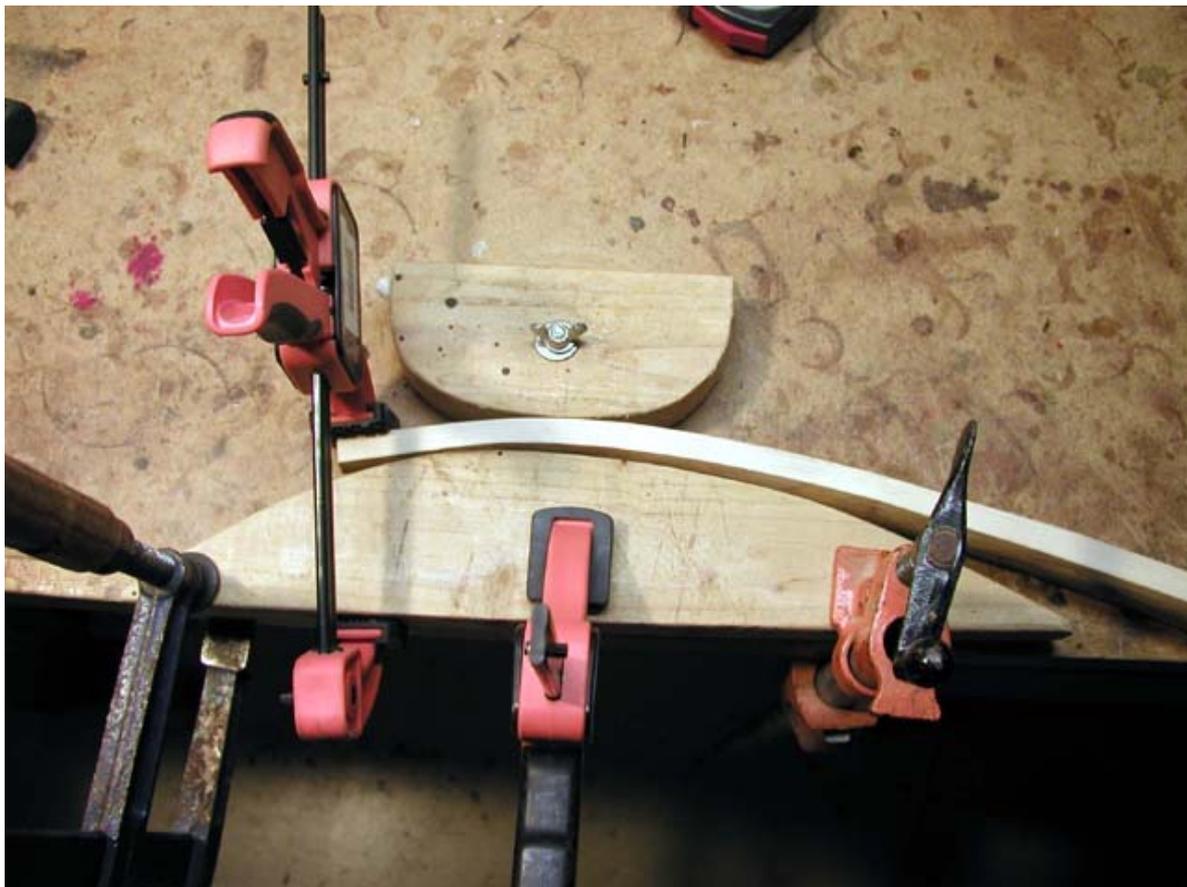
I now prepare to steam bend out some of the deflex in each limb.



After about 45 minutes I remove the bow and bend the trouble spot on a mini-caul that I built for this purpose. I'll leave the bow in the form for several hours.



Next I'll steam each tip for about 30 minutes and flip them up a bit to help with the



Here's what the bow looks like when I am all done bending. The reflex looks fairly extreme but much of it will come out during the tillering process.



To get the bow bending I use my Nickolsen #49 rasp to hog wood off and then remove the tooth marks with my scraper. Between wood removal sessions I check for thickness by running my fingers along the bow.





Okay, she is starting to bend pretty good now. I know it doesn't look like it but there is quite a bit of reflex in the bow at this point. It's ready for the long string.



It's time to cut nocks. I mark the position of the nocks about 1" back from the tip end and then make a line at about 45 degrees. I do this on both sides of the tip to help ensure that my grooves will line up nicely.



Using a small rattail file I file grooves on both sides using the 45 degree line as a guide.



After the initial grooves are cut I round the belly with a rasp and/or scraper.



I finish filing the grooves stopping frequently to make sure they line up with each other.





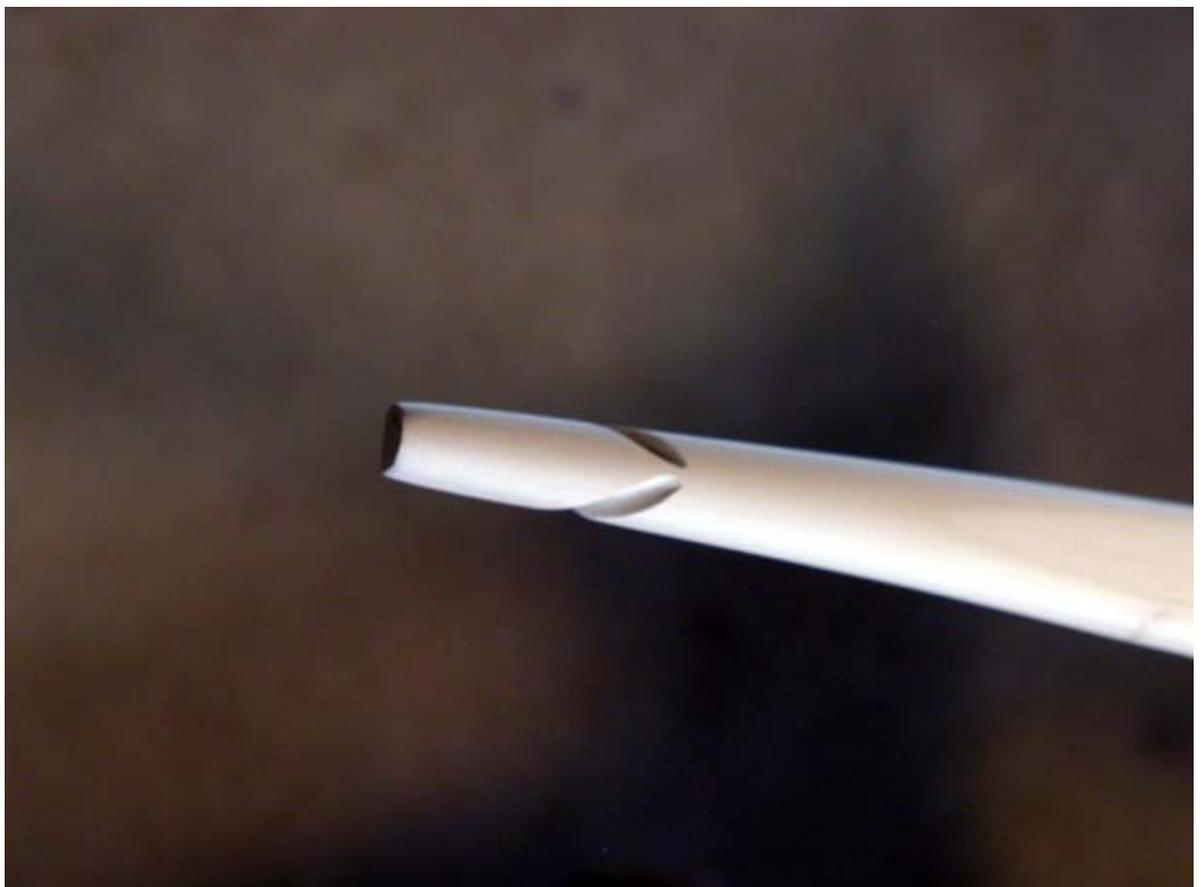
I wrap 100 grit sandpaper around the file and sand the groves smooth. The shoulders are rounded a bit so that the string loops won't catch and split the wood.



Burnishing the forward edge of the groves also helps prevent string damage.



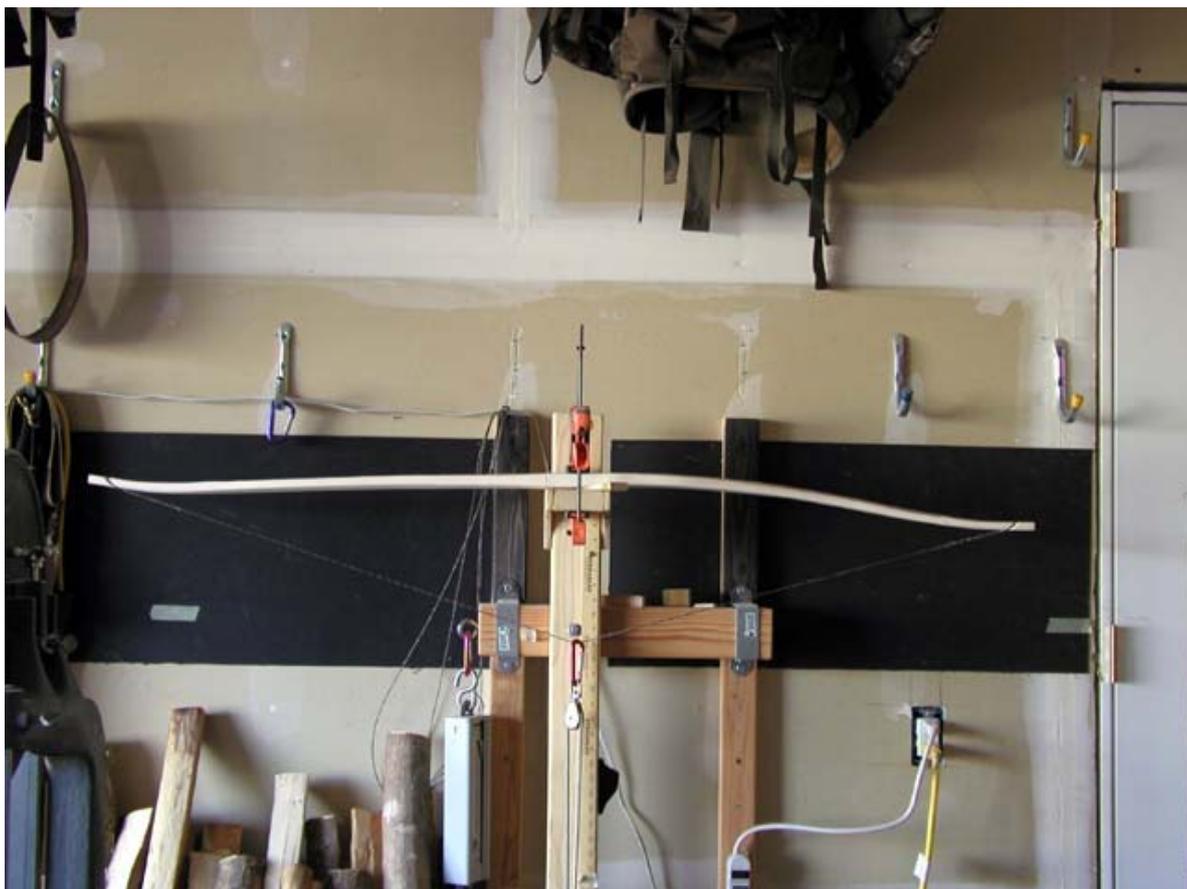
Here is what the tips looks like when I'm done. Note that the grooves should be even and meet squarely in the middle. Now we're ready to put on a string.



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The longer the string, the harder it is to see flaws in the tiller so I use a string that's just long enough to nock without bracing the bow. Left limb is a little stiff and right mid-limb is a little weak.



Time for a little wood removal - I'm careful not to take too much wood off at a time and I exercise the bow thoroughly between scraping sessions. It is important not to pull the bow more than your target weight so as to keep the stress on the limbs to a minimum thus reducing unnecessary set. The limbs are bending fairly evenly now.

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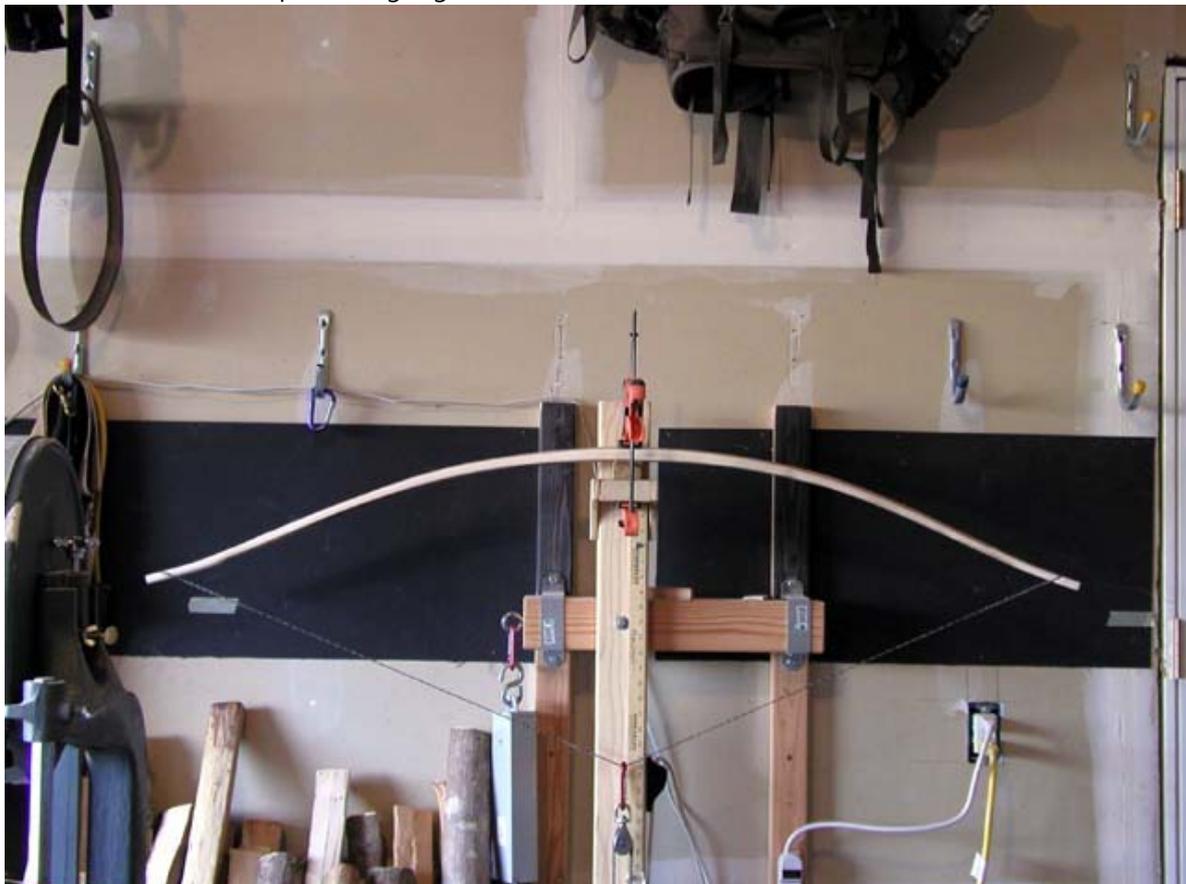


The bow is a little narrow for hazel-nut so I'm going to temper the belly to help prevent excessive set. I put each limb into reflex and then use a heat gun until the belly is nicely browned, but not charred. I keep the heat gun about 4-5" away from the belly to allow the heat to penetrate the belly rather than just scorch it.





Tempering the belly will add weight and change the tiller so I scrape more to get the limbs bending evenly again. The bow is ready for the short string when the tips move about 16" at the target draw weight.



It is time now to brace the bow for the first time. For me this is the most nerve wracking part of the process. The long-string hides many tillering flaws which are revealed when the bow is braced. A common problem is for one limb to appear stronger or a hinge that will suddenly reveal itself. Initially I keep the brace height low – no more than 4". If I see a flaw I quickly unbrace the bow and fix it using the long string. Exercising a bow on a short string under these circumstances will often result in excessive set.

This time I'm lucky and the first brace reveals no major problems. Now it is just a matter of reducing weight and finessing the tiller.



But before I continue tillering, I check the string alignment. The string is off-center by a little more than  $\frac{1}{2}$ ". I like the string to track down the middle of the handle or just favoring the side of the arrow pass. Some bowyers advocate letting the string track well to the side of the arrow so that the bow is almost center-shot. I don't recommend that because it tends to cause the bow to torque in the hand upon release – at least that is my experience.



I'm going to bend the handle area to move the tips into proper alignment. Sometimes I use steam and a press, but this time I'm going to use dry heat. I rub cooking oil on the belly side of the handle – this helps distribute the heat more evenly. Then I clamp the bow and fasten a weight on the limb that I want to move. I position a stop under the weight to prevent the handle from bending more than I need. I apply the heat evenly over a 4" area until the wood is too hot to touch, but just before it begins to brown. I then let it cool for about 2 hours.

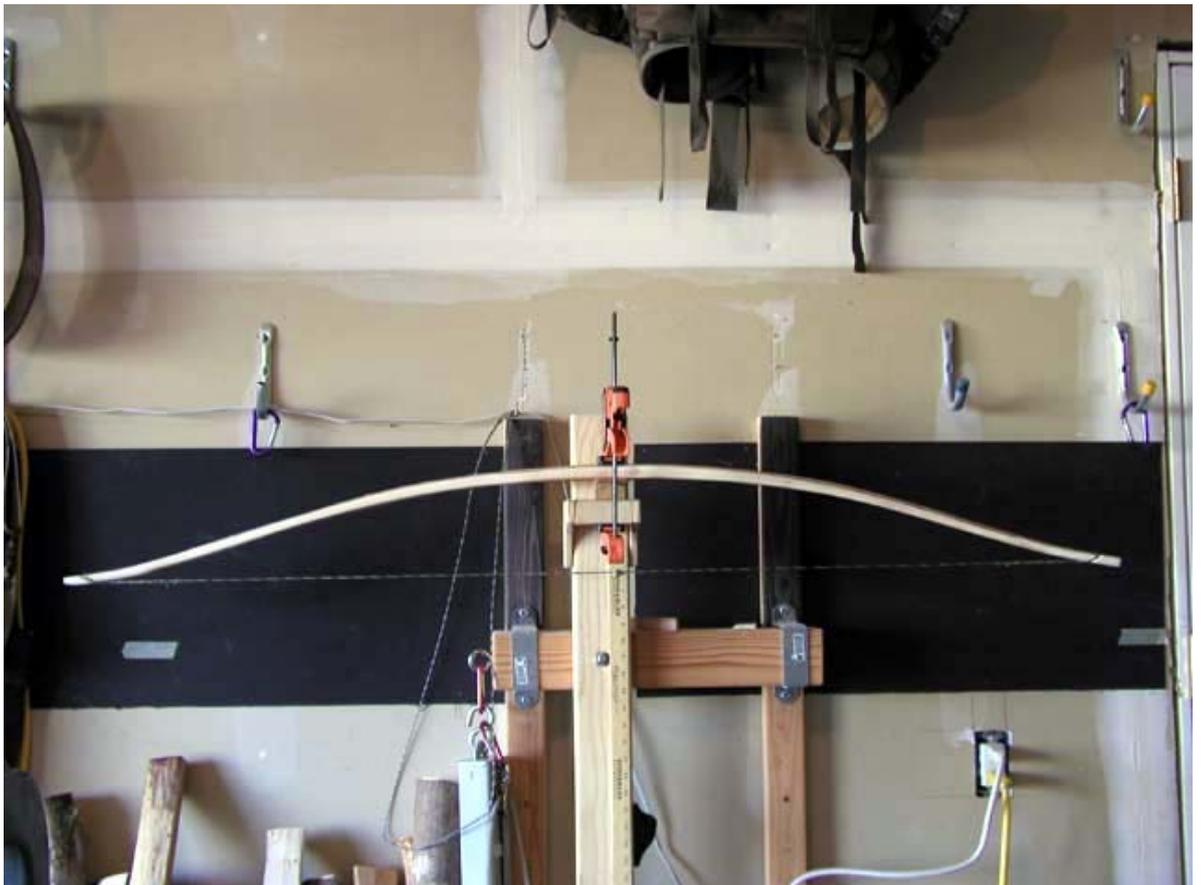
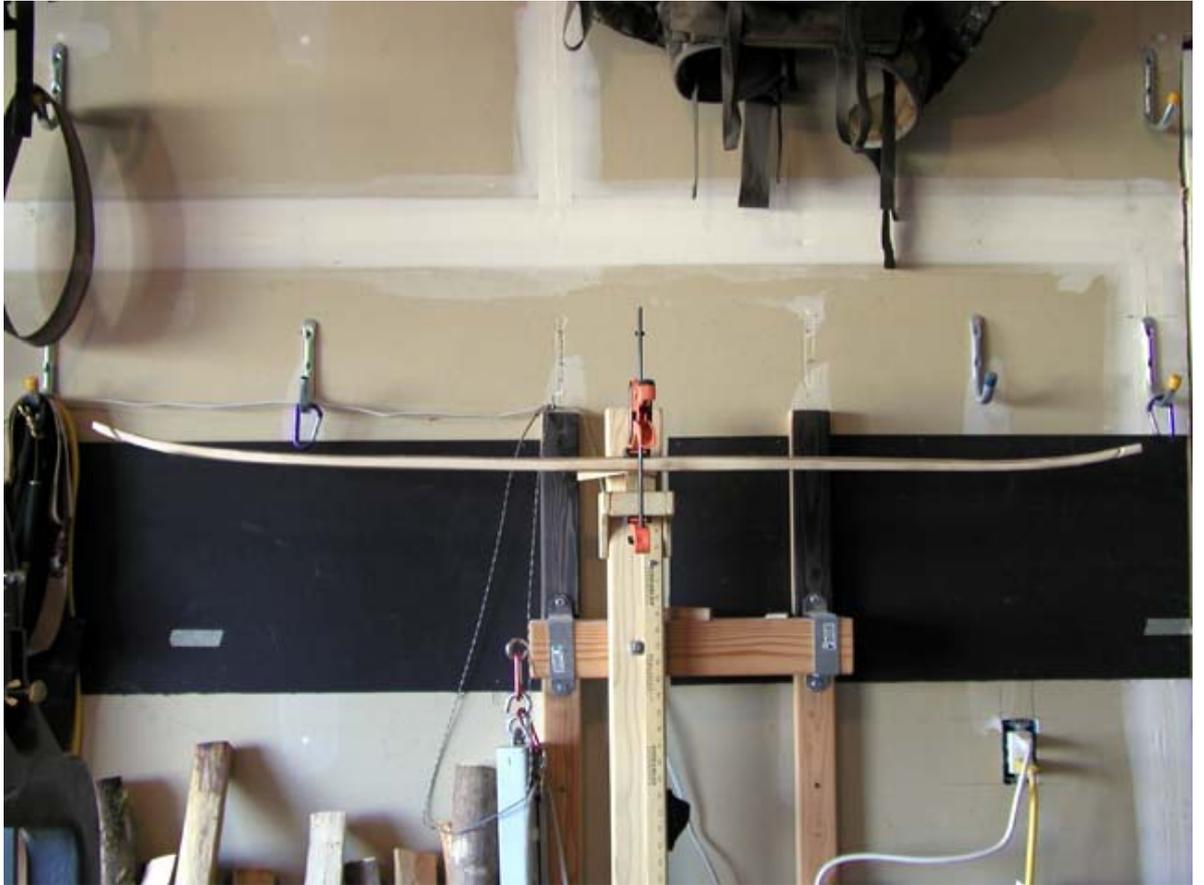


I got lucky and nailed it the first time – the string is now tracking right down the center of the handle when braced.

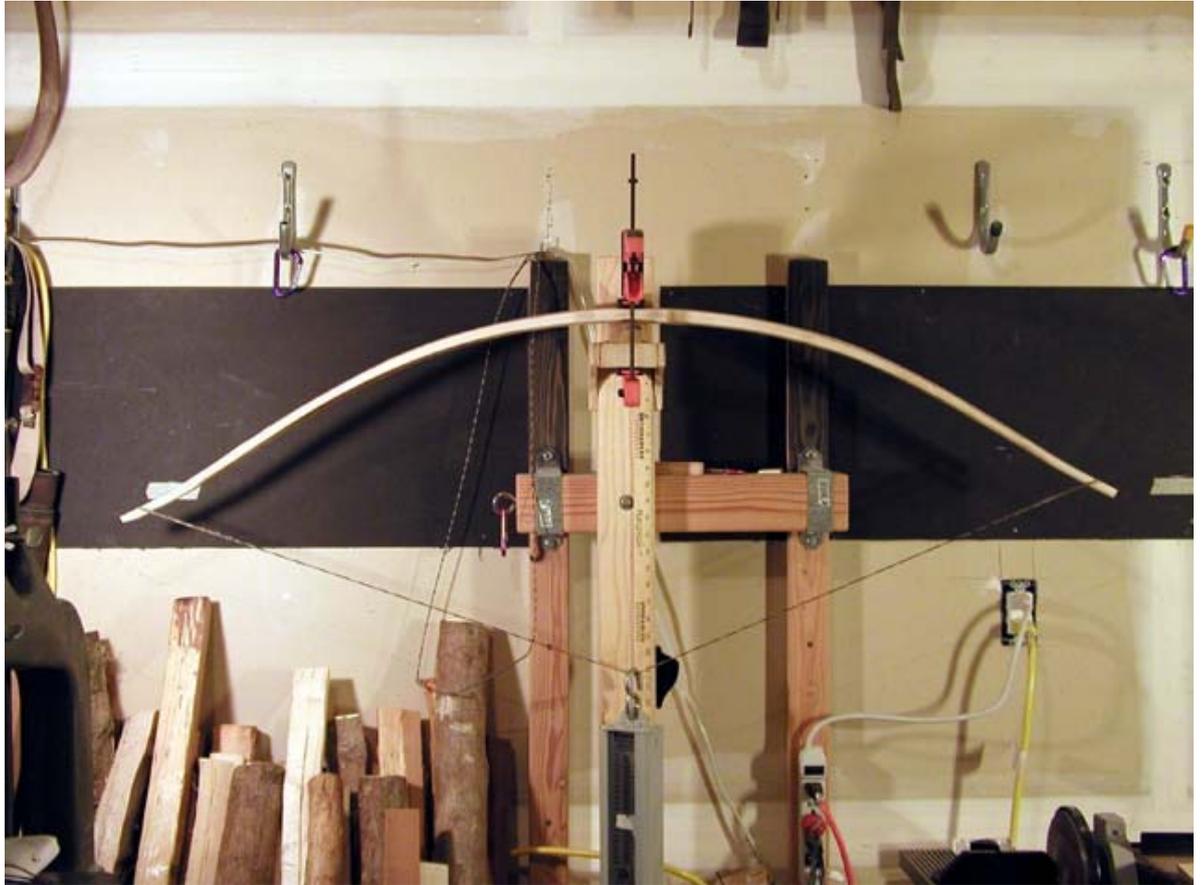


Now that the string is tracking I remove wood on both limbs to reduce weight. I use long strokes with a scraper to ensure I'm taking wood off evenly. Between removal sessions I pull the bow on the tree about 30 times to exercise the wood. I'm essentially "training" the wood to bend further and further.

Following are pictures of the bow at rest and braced.



Here the bow is pulled to 21". It's bending nicely in the handle, inner and mid limbs, but is a little stiff yet in both outer limbs.



Next – narrowing the tips and adding tip overlays.

The gentleman I am building this for would like a snakeskin back. I'll put silk beneath the skins to give the bow an extra measure of safety.

Gordon

Once the bow is bending well I try to get the bow as close to final dimensions as possible so that by the time I hit weight and draw length there is no more wood to be removed. I begin by narrowing the tips to 1/2".



I'm ready to install overlays. I make a mark 1" back from the nock and then draw a line from the back to halfway between the belly and back. I will remove the wood from above the line to create a beveled surface for the overlay.





I use a small file to flatten the bevel.



The overlays are from some scrap hardware flooring and are cut to 2" x 1/2" x 1/2".  
The blocks are flattened and then the ends beveled on the belt sander.



I rough up the surfaces with a tothing plane blade in preparation to gluing.



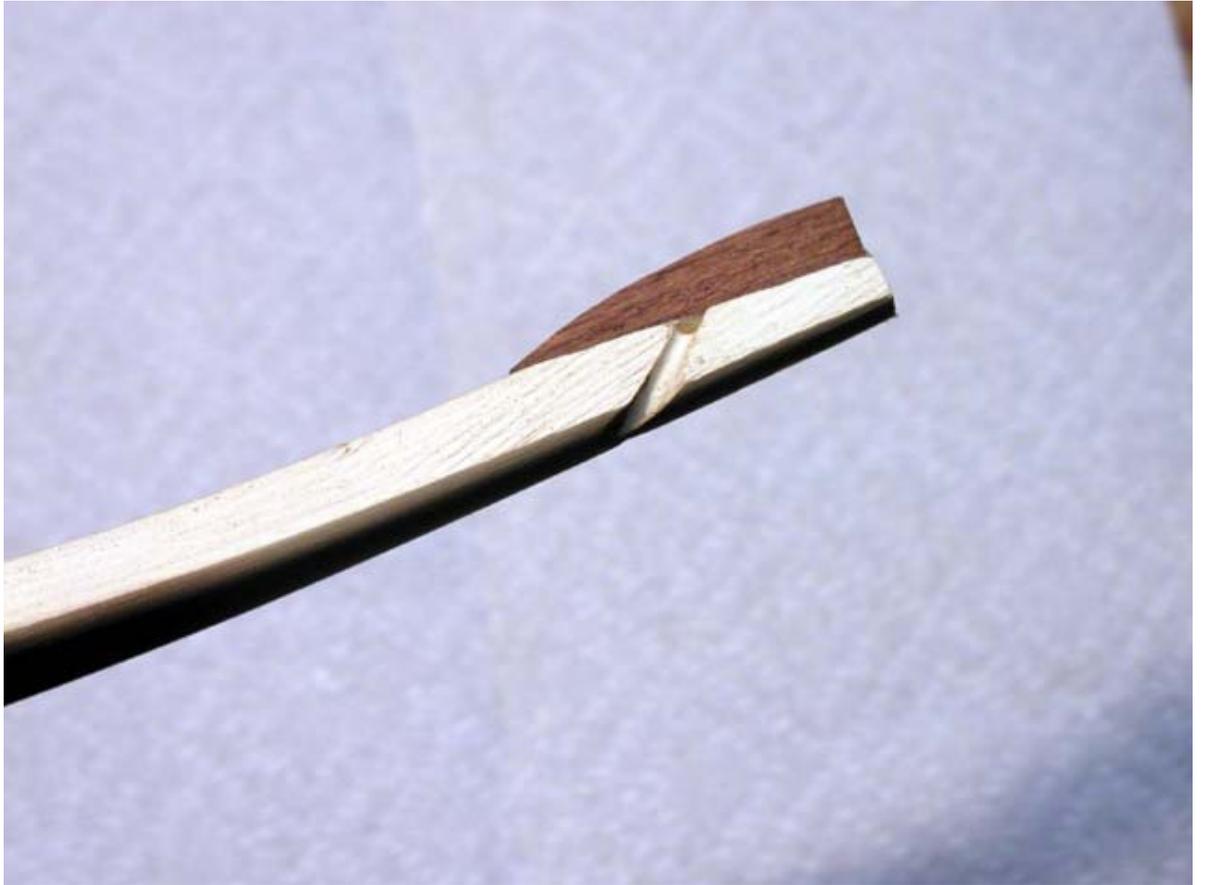
The overlays are glued to the tips with 5-minute epoxy and clamped.



After the epoxy has cured I narrow the tips to their final width of  $7/16''$ .



I then use a small carving file to shape the overlays.





The groves are re-cut with a small rattail file.



I make the groves meet at a point at the top of the overlay.



Then I cut across both grooves to create a nice even arc.

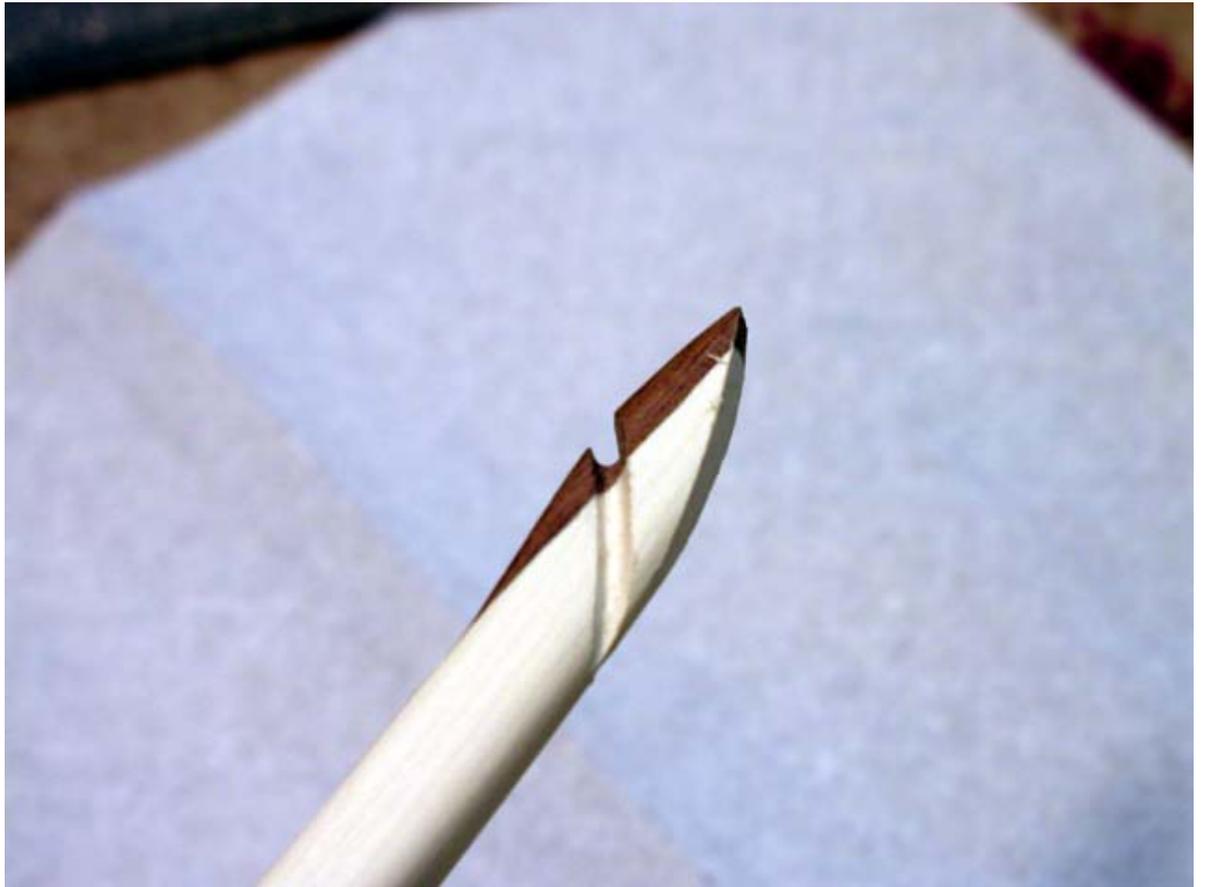


I design my bows so that the last 2 inches of the tip do not bend. That's why cutting

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into the back is not a problem.

With a rasp and file I shape the remainder of the tip.



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And here is the finished tip.

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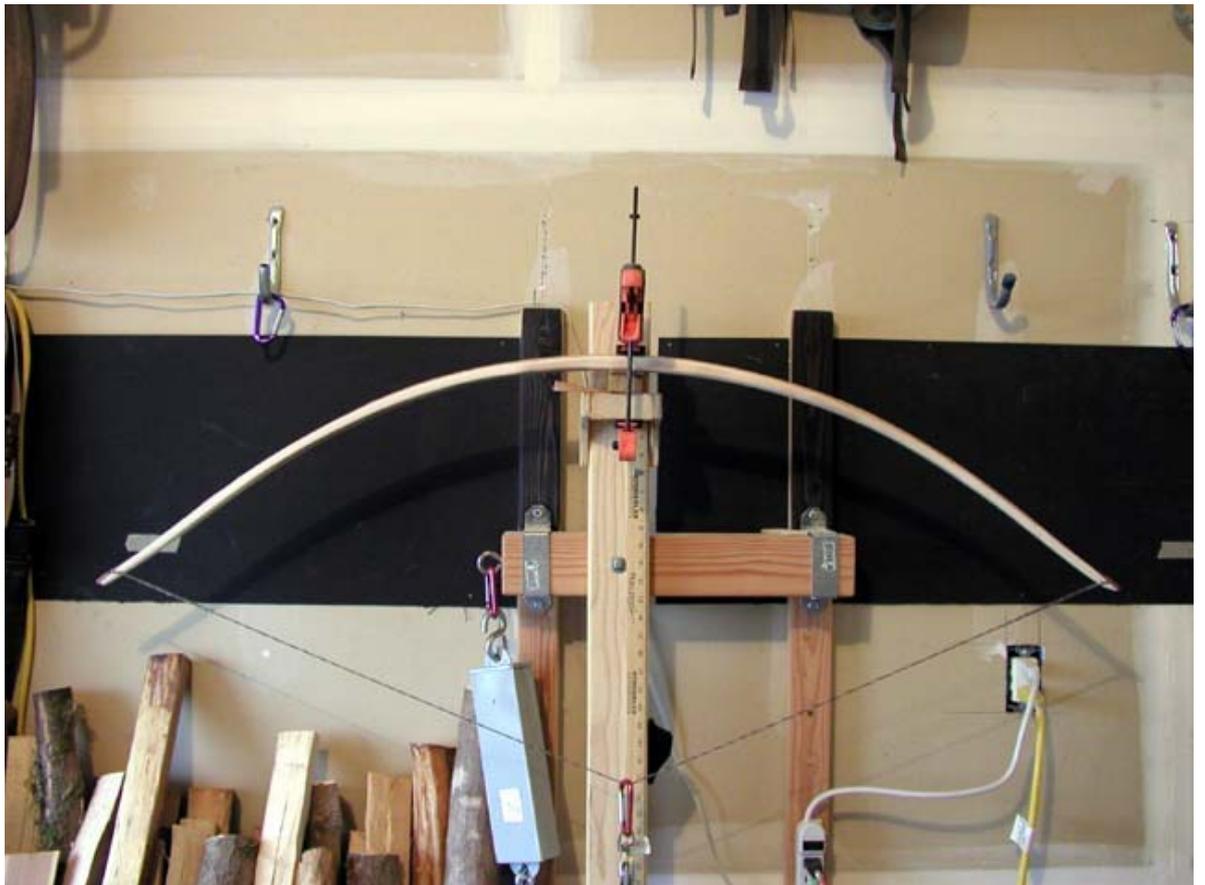
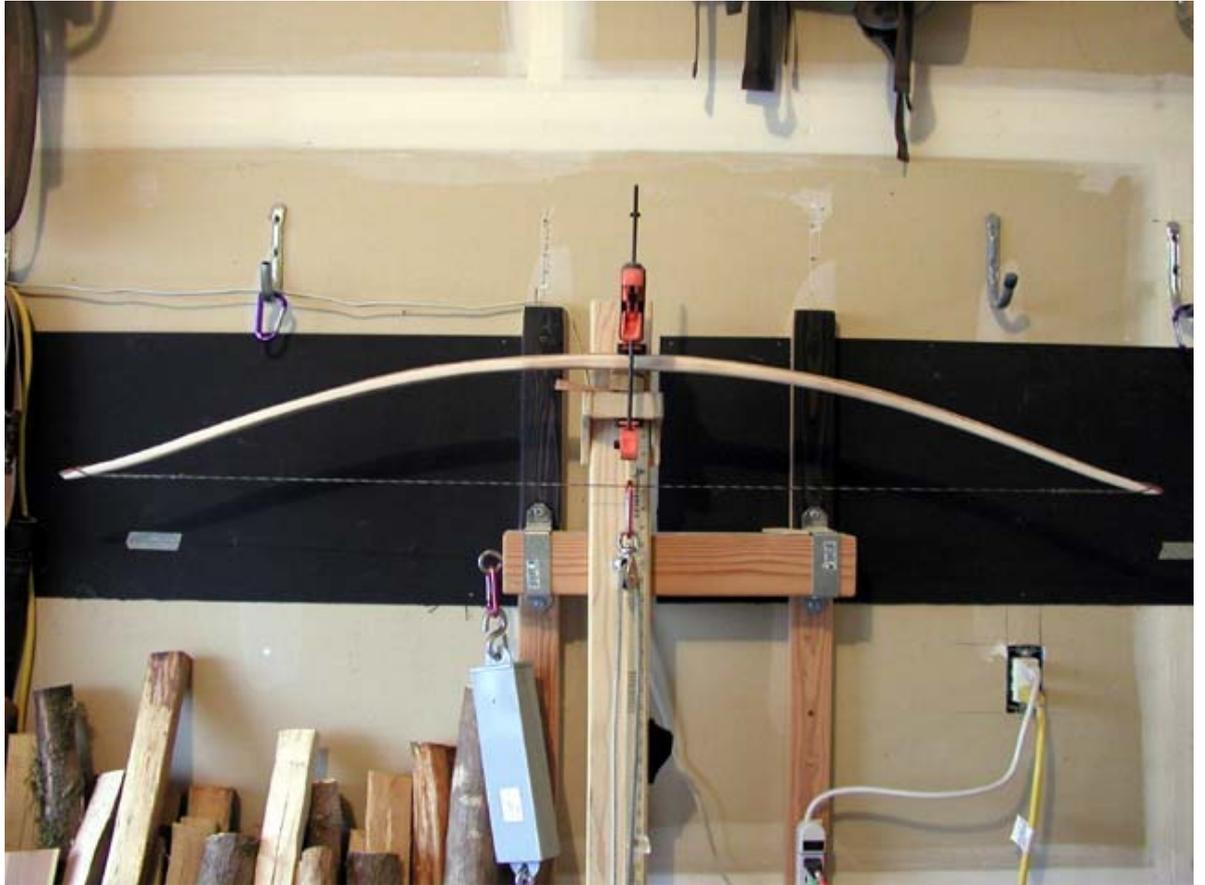
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It is okay to cut through the back of the tips because the tips do not bend - at least they shouldn't.

Hazelnut is a good bow wood - it dries quickly and is easy to work. The tips on this bow were about 5/8" thick when I steam bent them.

Did some tillering today. She's starting to get a little string follow now - hopefully this wood will hold up. Here are some pics of it braced and pulling 55# @ 24".



I let my bow stand for about 2 days after steaming.

*« Last Edit: February 14, 2008,*

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The law of harvest is to reap more than you sow. Sow an act, and you reap a habit. Sow a habit and you reap a character. Sow a character and you reap a destiny. James Allen

SW Utah

[Justin Snyder](#)

Administrator  
Member



[Re: Gordons hazelnut build along TUTORIAL](#)

« Reply #1 on: January 07, 2008, 09:51:51 AM »

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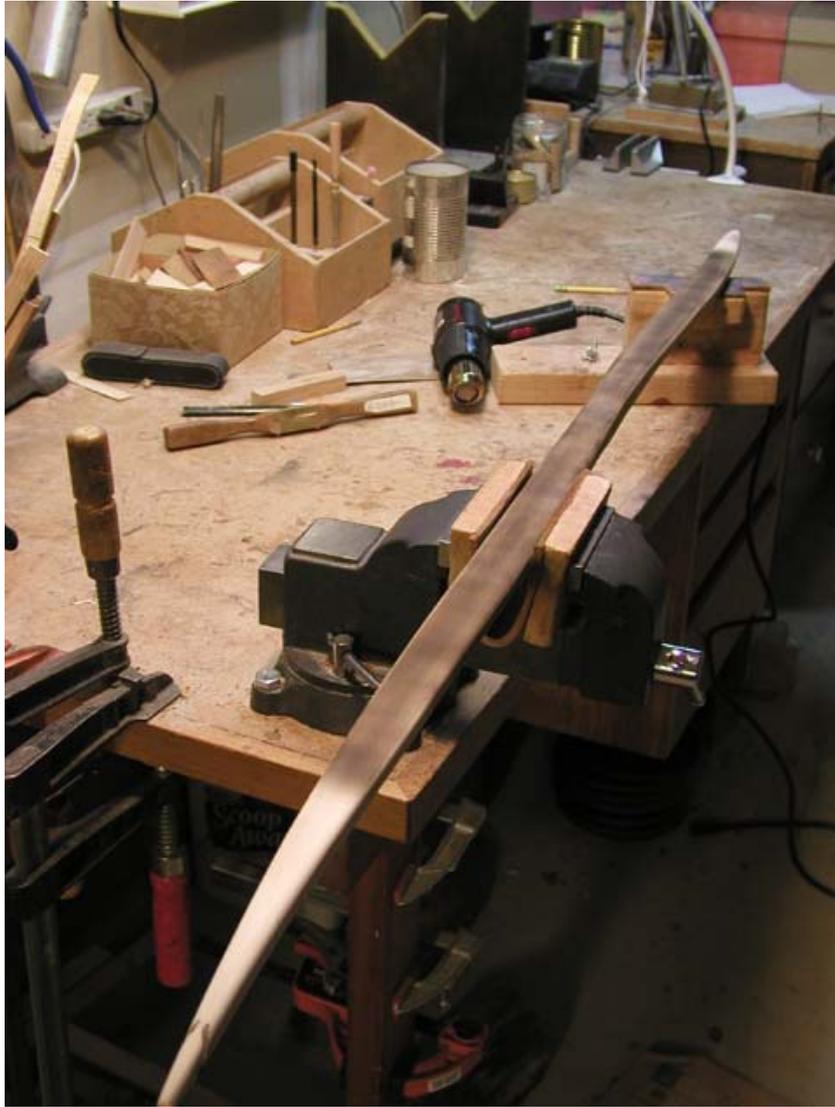
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Tiller is very close. Mostly just reducing weight now - taking it slow and easy.

To reduce weight I will take off wood with long even strokes with a scraper - the same number of strokes on each limb. I will carefully monitor the tiller as I go and make corrections if necessary. The idea is to shave off a little wood along almost the entire length of each limb (be careful near the tips), exercise the bow, and then repeat until you reach your target draw length/weight. I'll try to post pictures later this week to help illustrate.

Gordon

The bow was starting to show a little more set than I like so I tempered the belly again and then exercised the bow on the tree. Now the bow shows no string follow after stringing and a workout. We'll see how long that lasts once I start removing wood again.



If you're going to build wooden bows you have to learn how to fix problems. And here is a problem that you are likely to encounter sooner or later if you build enough bows. A compression fracture has formed in the handle area where a pin knot extends through the belly.



I'm going to employ a technique that I learned from master bowyer John Strunk to fix the problem. I will fashion a patch from thick rawhide and affix it to the area of the fracture. This will transfer some of the compressive force from the belly to the rawhide thus relieving stress on the fractured area.

First I cut a rawhide patch about 4" x 1 1/8". I then bevel the edges on a belt sander.



I soften the rawhide up by soaking in warm (not hot!) water for about 20 minutes.



And then blot the rawhide patch dry with a towel. I coat the now pliable patch with super-glue gel and affix it over the problem area. In this case the patch is longer

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than I need because it will also serve to build up the handle.



I let the patch dry overnight and then taper the edges into the belly using a small file.



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Now that the fracture has been addressed, I can continue the tillering process. The tiller is pretty good but I need to reduce weight. I do this by taking the same number of long and even strokes from each limb, about 5 – 6 strokes. After removing wood I exercise the bow by pulling it to its target weight about 20 times. This ensures that the wood removal is registered otherwise you run the risk of a sudden and unexpected loss of draw weight.



After each exercise session I measure the distance between the belly and string at about 6" out from the handle on each limb. I like the lower limb to be a little stiffer than the upper limb so I strive for about  $\frac{1}{4}$ " positive tiller on the top. That means the distance between the belly and string on the top limb is about  $\frac{1}{4}$ " greater than on the bottom limb.

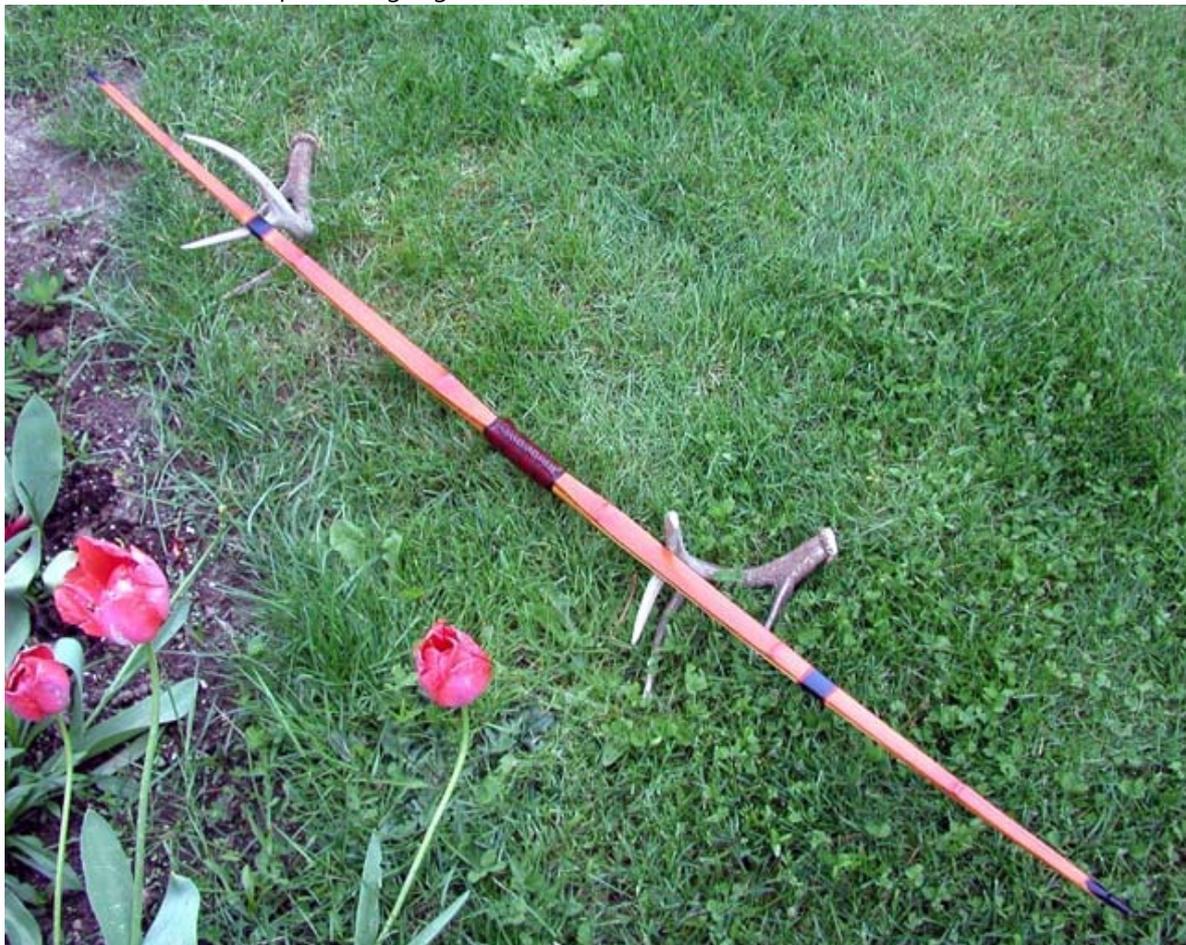


You asked me whether heat treating the belly was a help on hazlenut...

YES!!!!

I think the rawhide technique probably works best where the fractures are localized. Are you seeing crysals all along the belly?

After applying the patch to a limb I wrap it with serving and then do a similar wrap on the other limb for looks. Here's a pic of a bamboo backed yew that I fixed in this manner. The fracture was caused by a knot that came through the belly and was rather severe. But it has not given me any problems since I fixed it - and I shoot this bow a lot.



A number of bowyers that I hold in high regard have expressed doubts that the rawhide technique I used to fix a fret is effective. An alternative treatment that is proven is to remove wood to below the fracture line and then glue on a strip of matching wood.

Next up - final tiller

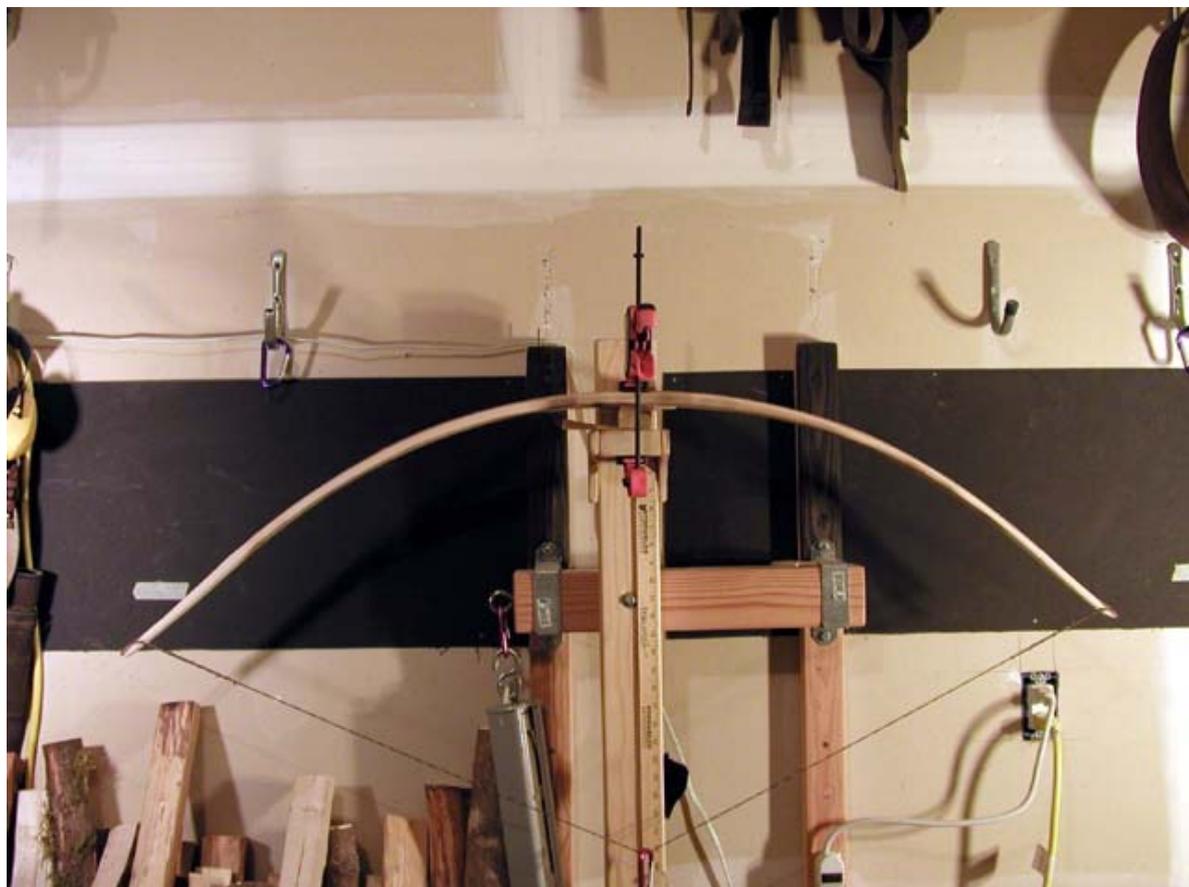
The bow gained some weight after the heat treatment so it took a bit of work to get back to where I was previously. I've been scraping on the bow whenever I can sneak away into the garage for a few minutes. Here she is pulling 55# @ 25". Tiller looks pretty good except the left inner limb looks like it may be bending just a little more than I like. I won't remove quite as much wood from this area as I continue to reduce weight. String follow is minimal at this point.



When you are in the final phase of tillering it is important to keep your tools sharp. That is because you need to have very fine control over how much wood you are taking off. I use a sharpening jig and diamond stone to keep my bowyer's edge sharp.



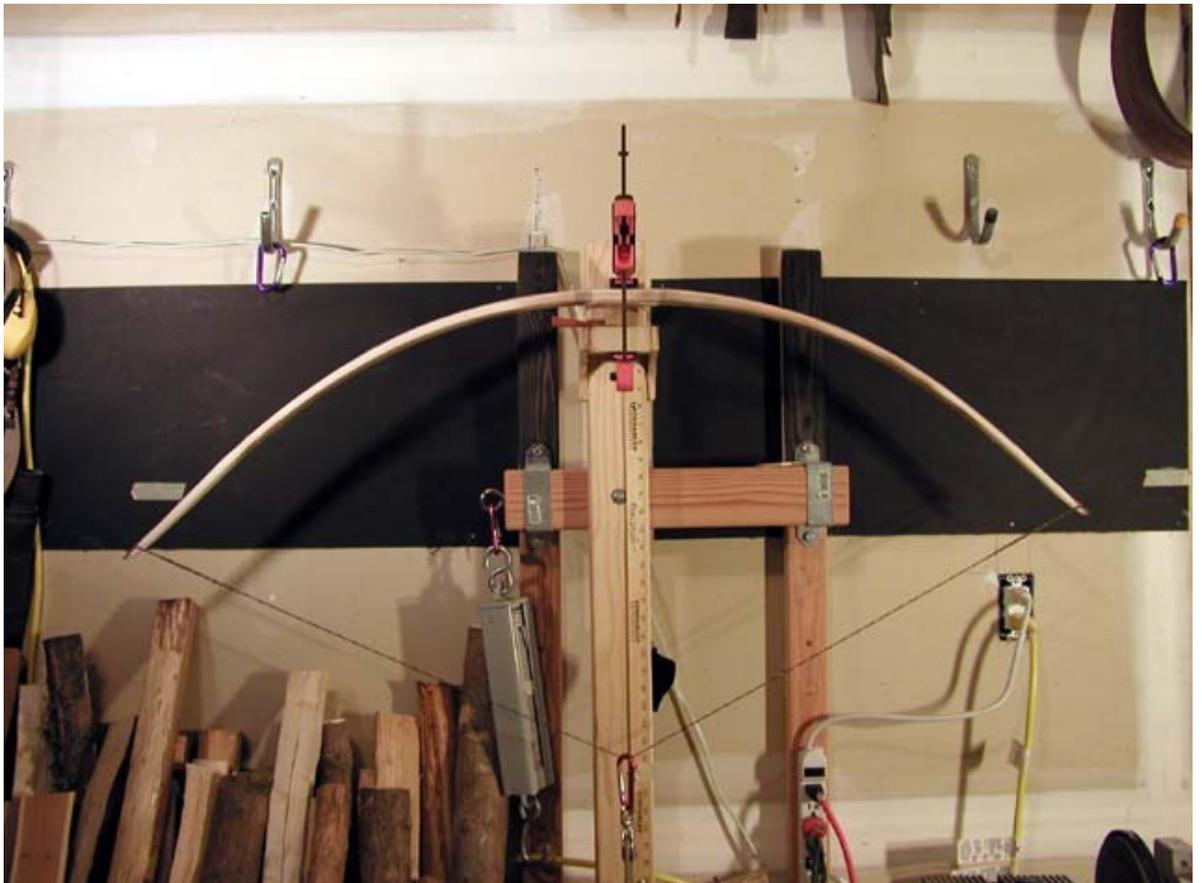
After more fine tuning of the tiller and wood removal the bow is pulling 55# @ 26". I'm very close now and between each wood removal session I sand the limbs smooth and remove any tool marks. That way I don't worry about losing weight due to a lot of finish sanding after I've hit my target.



I'm very close to final tiller and target weight. Now I make certain that any remaining surface blemishes and tool marks are removed. I perform this step in natural light because the smallest flaws are nearly invisible in artificial light, but show themselves readily when the finish is applied. After blemishes are removed I lightly sand the whole bow with 150-grit followed with 220-grit.



The bow is tillered and just a bit over my target weight at 27". For the next week I will thoroughly test the bow on the tree to break it in and then make minor tiller adjustments as necessary. But the hardest part is behind me. Now it's up to her - if she makes it through the next week of boot camp, she'll graduate to bow status.



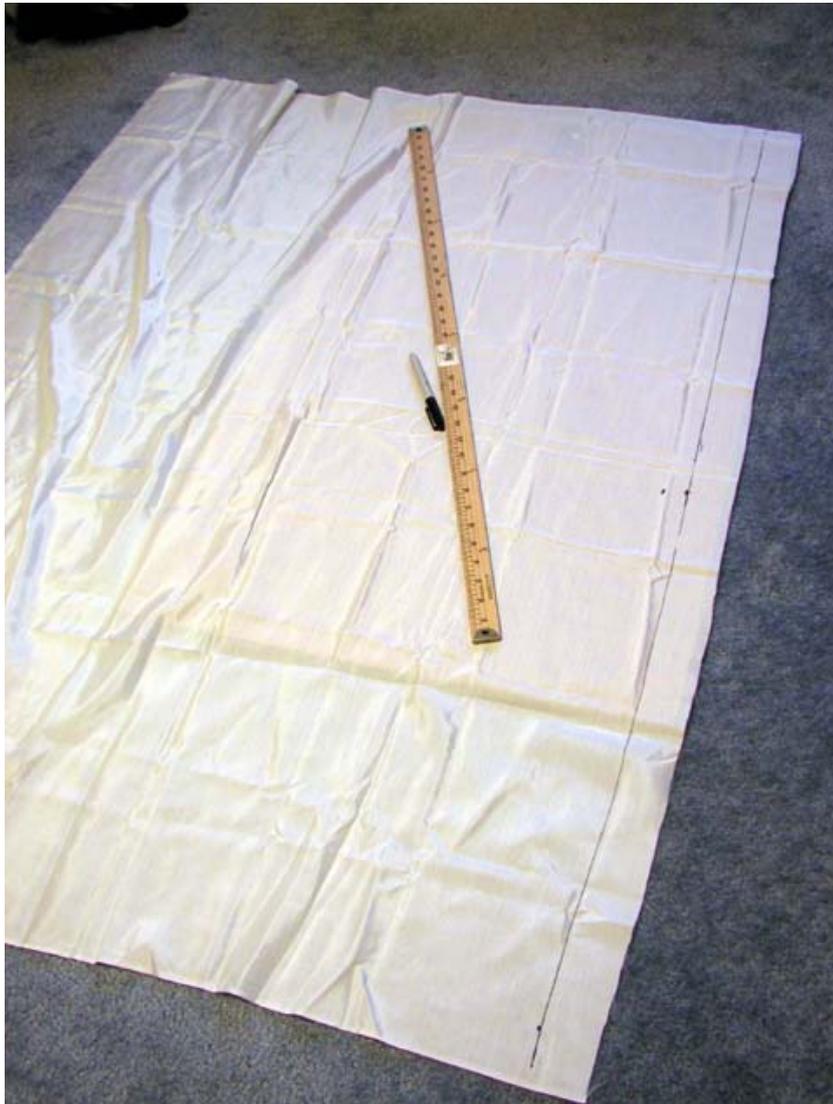
Next up – backing with silk.

The gentleman that I am building this for would like snakeskins on the back. Since I'm doing this I might as well add a little protection by putting silk underneath and it doesn't add any significant weight. Also I think it will make a good addition to the build-a-long. But the bow doesn't really need it.

2 days into boot camp and she is holding up fine. I gotta good feeling about this one.

I pulled the bow to full-draw about 1000 times – no issues and tiller has remained unchanged. She has graduated with honors and can now be called a bow. She's going to get dressed up with snakeskins but first I'm going to apply a silk backing. The bow doesn't really need a backing but since I'm giving it to someone else its good insurance against breakage.

I cut a strip of silk about 2" wide and long enough to cover both limbs.



I'm going to dye the silk a dark color to bring out the colors and pattern in the snakeskin.



I rough the back of the bow up with some 100-grit sandpaper and then cleanup any contamination with denatured alcohol.



I then spread a thin coat of liquid hide glue on the limbs and will let it dry. This is

called sizing the back and will help ensure that the silk will adhere properly.



After the glue has dried, I spread another thin layer on the limbs in preparation for applying the silk.



After the glue is spread, I immediately stretch the silk along the bow and work the backing on with my finger.



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After the backing is applied, I use a little water and my finger to smooth the surface and ensure that the silk has completely bonded.



I let the bow dry for a few hours and then trim the excess silk off with a razor blade.

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Then I smooth the edges with sandpaper and a block making smooth strokes from the back to the belly.



And viola, the silk backing is finished. The tips are bare because I will be painting

them later.



Next - applying snakeskins

Silk is incredibly strong for its weight. It will add a surprising amount of protection to the back.

 Logged

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The law of harvest is to reap more than you sow. Sow an act, and you reap a habit. Sow a habit and you reap a character. Sow a character and you reap a destiny. James Allen

SW Utah

[Justin Snyder](#)

Administrator

Member

 Online



[Re: Gordons hazelnut build along TUTORIAL](#)

« Reply #2 on: January 07, 2008, 09:52:57 AM »

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Before applying the skins I will build up the bow's handle. The handle on this kind of bow can be uncomfortable because it is shaped for bending and not holding. Building up the handle will make it more comfortable to grip and shoot.

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I cut 2 more strips of rawhide and bevel the edges on the sander.



The strips are laminated together using superglue and then shaped using a file.



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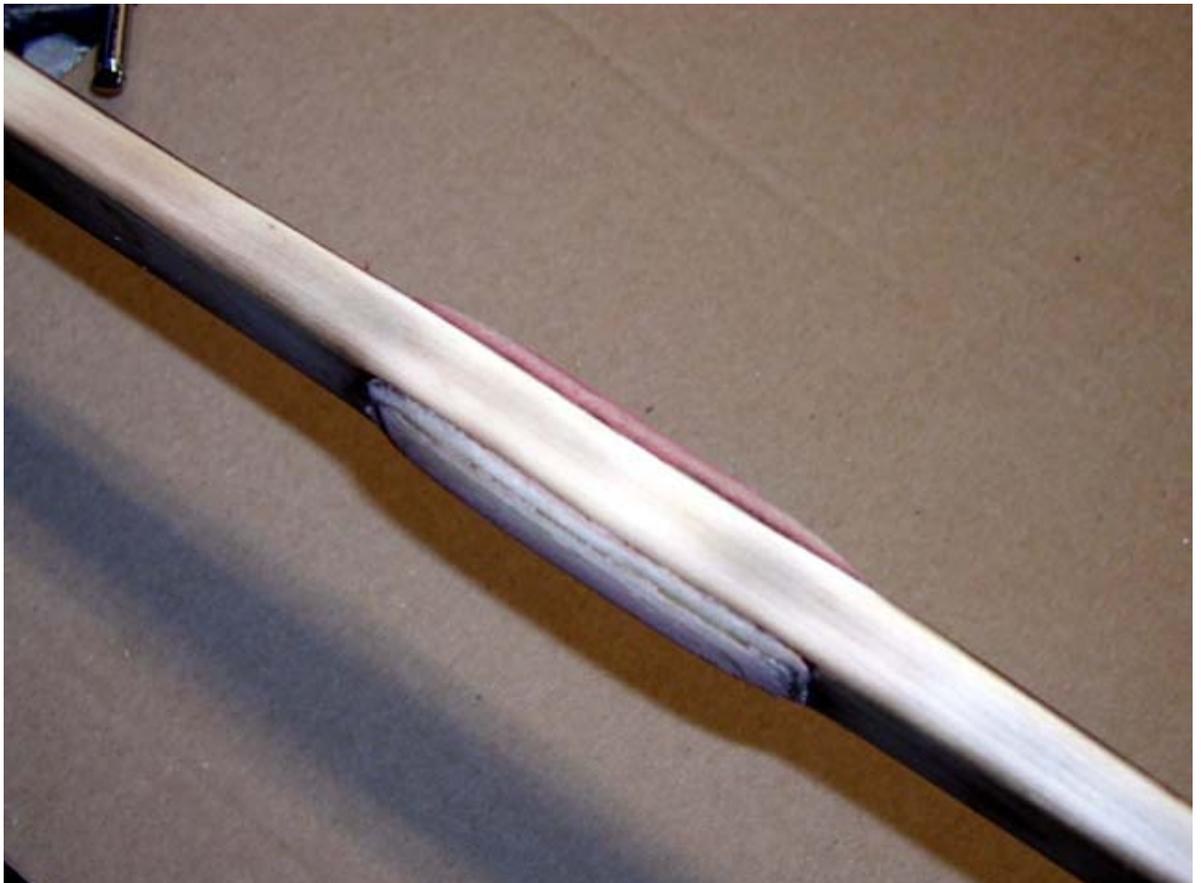
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I cut a strip of thick leather, glue it to the back and shape it. This will make it more comfortable for the shooter when wrapping their fingers around the handle.



Here is what the handle looks like when the build-up is completed.



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The bow is now ready for the snakeskins.

The rawhide may have made the handle bend somewhat less, but I can still feel it flex slightly in my hand. The poundage has not changed. Yes, I used superglue for bonding both the rawhide and the leather.

Dying the silk creates more contrast between the pattern and the background. If you do not do this, the pattern tends to wash out - at least that has been my experience with rattlesnake skins.

I ordered a matched set of rattlesnake skins from Pine Hollow Longbows for this bow. I had a problem with the first set of skins I received, but the folks at Pine Hollow took care of it immediately and I had a replacement pair within 2 days. That's great customer service - thank you Mike!

I'm going to use Titebond liquid hide glue for this job. The back of each limb is first sized by applying a thin coat of hide glue and then letting it dry.



Each skin is hydrated in warm (not hot!) water for about 5 minutes. Then I remove the skins from the water and blot them dry on a towel.



I spread a thin coat of hide glue along the back and then lay down the first skin starting from the tip and moving to the handle.



I carefully stretch and adjust the skin so the pattern runs down the middle of the limb. Then using my fingers, I remove any air bubbles that are trapped under the skins. This is important as air bubbles will result in cracks in the finish.



When the air bubbles are removed, I trim away any excess skin by running a razor blade along the edges of the limb. I keep the blade angled away from the back to ensure I don't accidentally remove too much skin.

I repeat the process for the other limb.

There is no need to wrap the limbs as the hide glue has great affinity for snakeskin and literally sucks it to the surface of the limb. After allowing the skins to dry overnight, I smooth the edges of the limbs with 150-grit sandpaper and a block. I angle the block toward the back to bring the skin just slightly back from the edge. This will help prevent the skin from lifting after the finish is applied. I sand by making strokes from the back to the belly and from the handle to the tip. Take care when sanding as the skins are delicate and may tear if you are too aggressive.



You must remove the scales before a finish is applied. Some folks use adhesive tape to do this, but I've torn skins using this method. A better method is simply to run coarse steel wool gently over the skins in the direction of the scales (from handle to tip). This will quickly remove most of the scales.



As you move the steel wool over the limb listen carefully for any whisper-like noise. This indicates a bubble trapped underneath the skin that will have to be fixed. To remove the bubble, first use a fine needle to poke a hole through the skin. This will allow the air to escape.



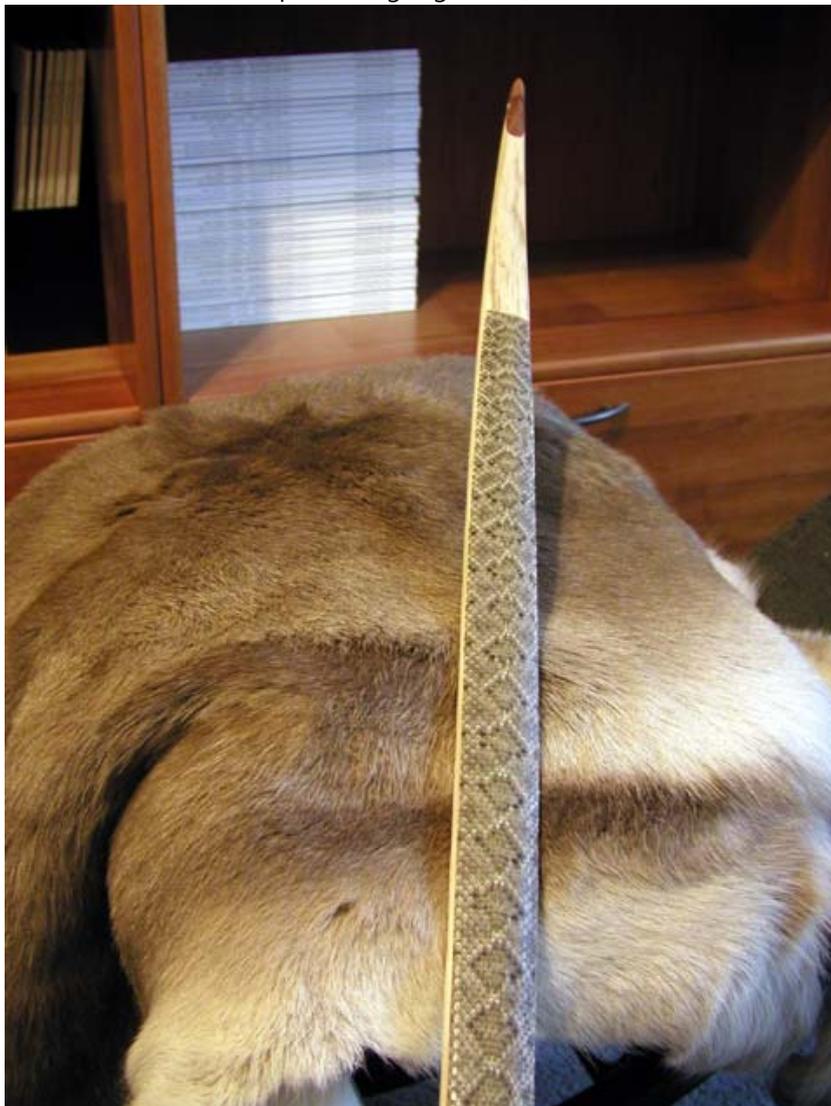
Then take a warm iron and gently heat the area under the needle hole. This will liquefy the hide glue and fill the void created by the bubble.



Finally, use your fingernail to remove any remaining scales



And here is what it looks like when done.



I left the outer limbs uncovered because this bow will have painted tips.

You don't need to put glue on the skin if you use hide glue. You can get titebond hide glue at any fine woodworking store. Here is where I get mine:

After letting the bow dry for a couple of days I made some minor adjustments to the tiller and then final sanded the bow. I used 100-grit to remove any remaining tool marks and then lightly sanded using 150, 220, and 320 grit paper.

I'm going to stain the bow using an alcohol based dye. I'm going to use a black dye for the handle accents and tips and light brown for the limbs.



I start by applying the black dye to the area around the handle.



I then use a rag soaked with denatured alcohol and an abrasive pad to feather the

color into the limb.



Next I dye the tips black.



After the handle accents and tips are done, I apply the light brown dye to the limbs.



The dye will raise the grain slightly so after it dries I lightly sand the stained areas with 600-grit sandpaper.

And here is the bow after the stain job is completed.

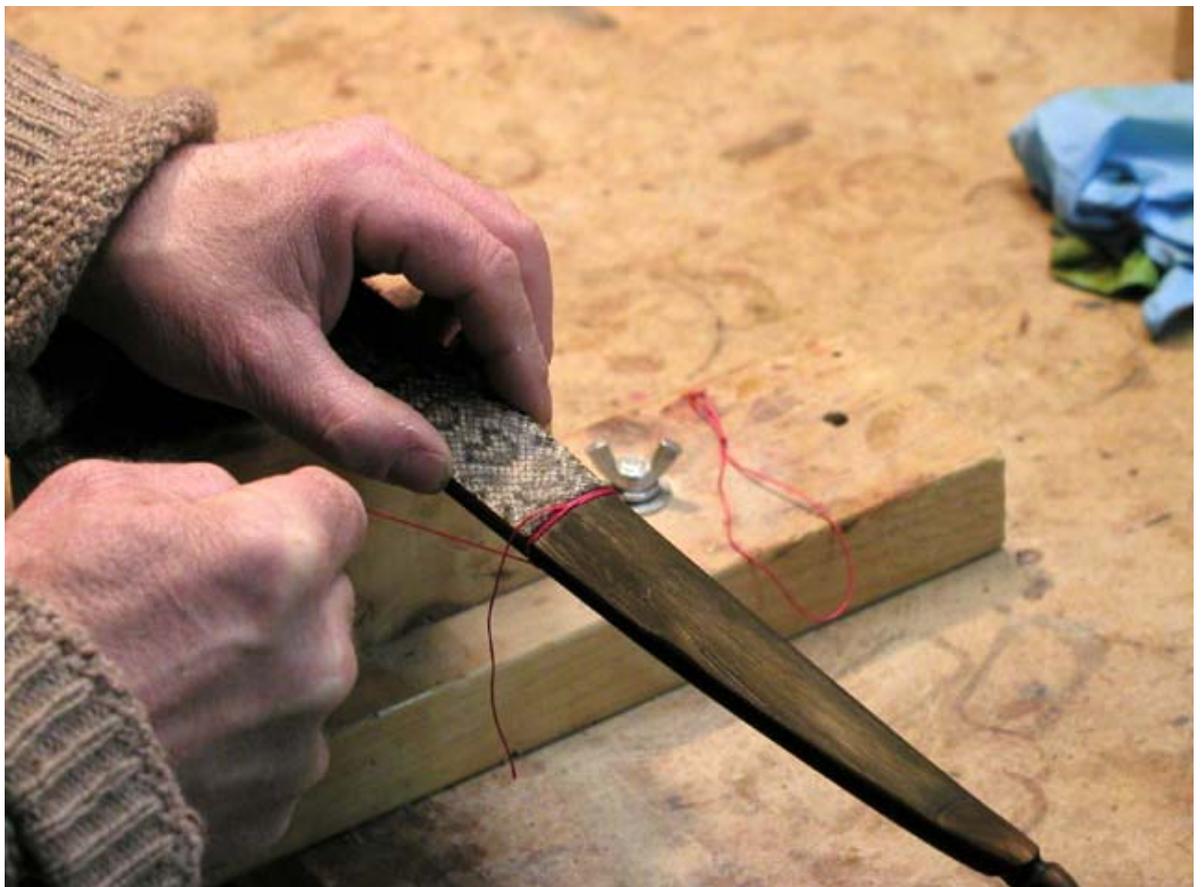




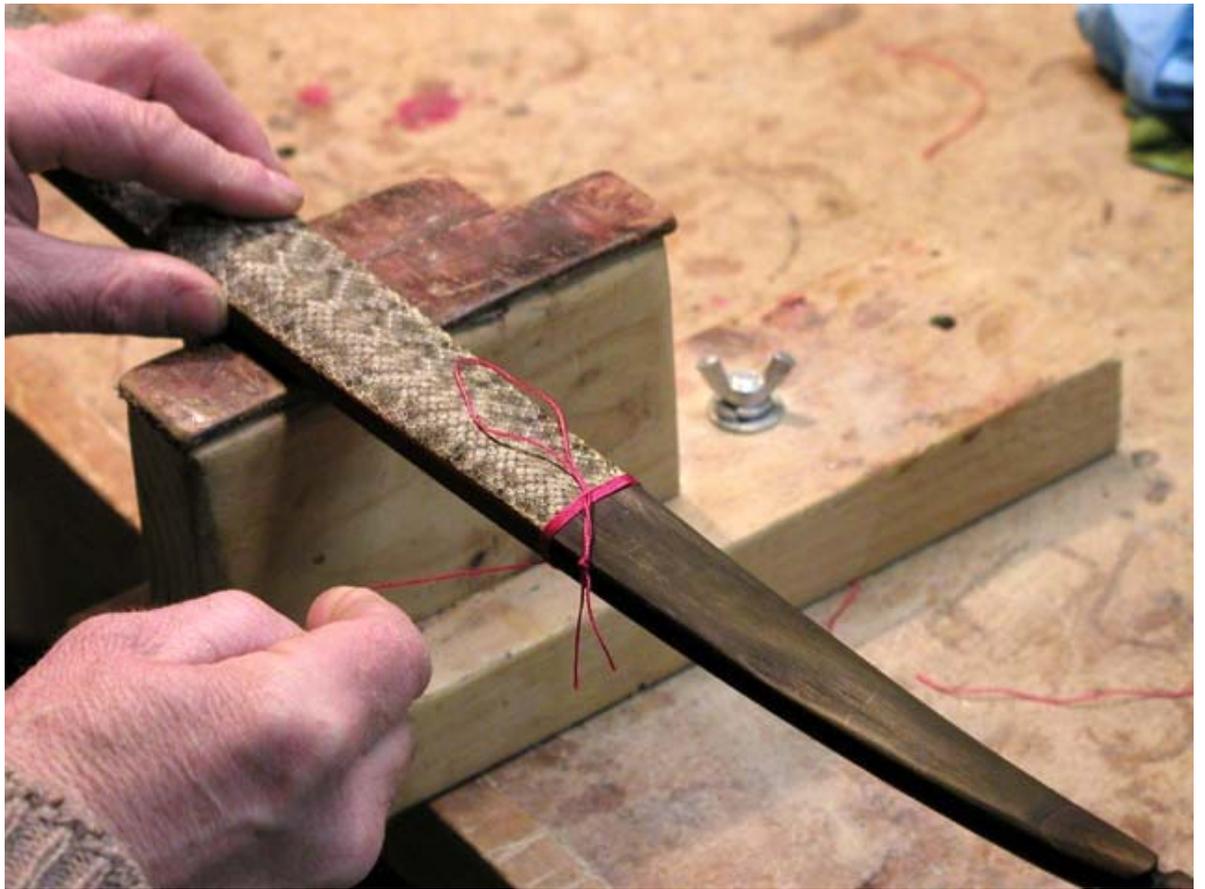
Next I am going to trim the tips in order to hide the transition between the skins and the painted tips. For this job I'm going to use red no. 4 Brownell nylon serving thread.



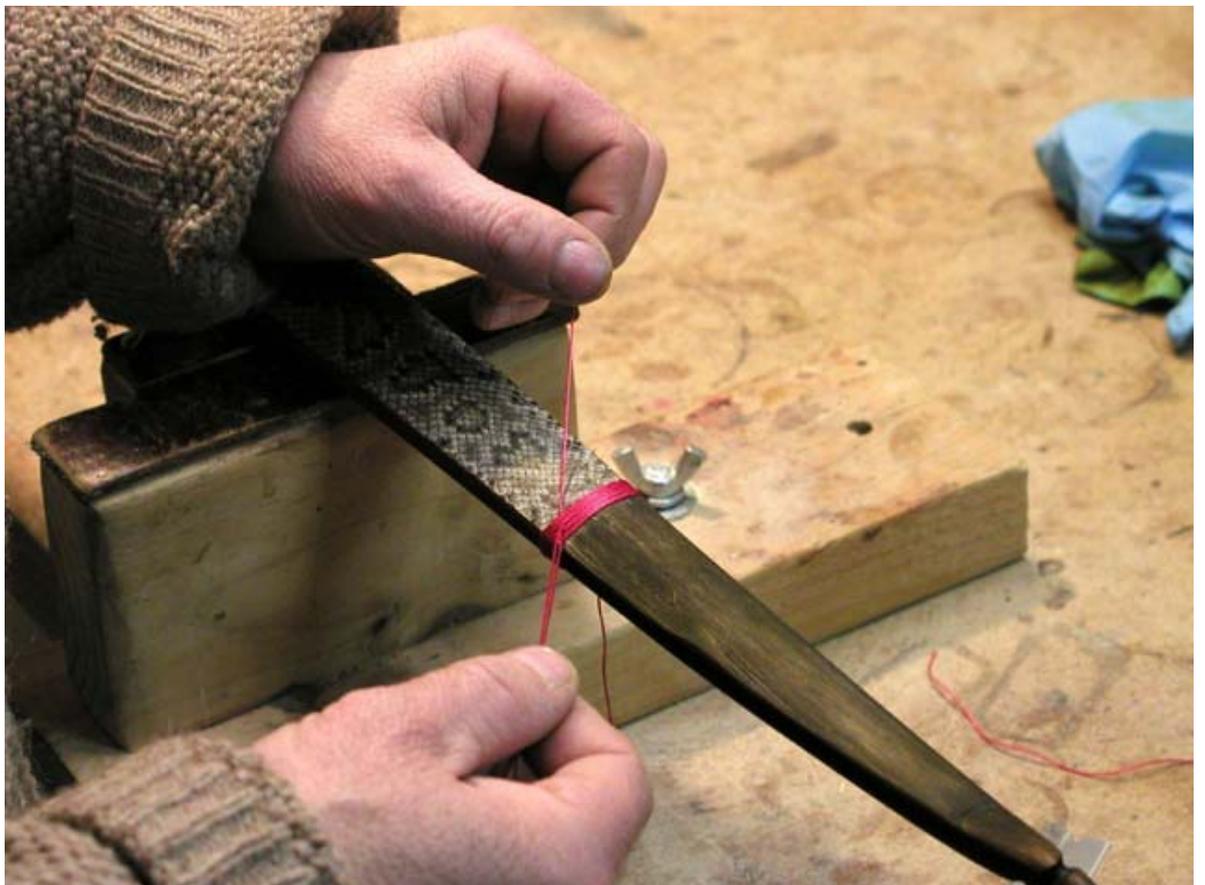
I cut off about 3 feet of thread and begin wrapping from the tip toward the skin.



When I have about 1/4" left I form a loop with a short piece of thread and wrap over it.



When I am done wrapping I thread the end of the serving through the loop and pull the thread underneath itself and out again. This is called whip finishing. I then trim the end close to the wrapping with a razor blade.





Finally I put a few drops of superglue on the wrappings to hold them in place.



And here are the trimmed tips.



I'm now ready to begin applying the finish. I first wipe shellac on the snake-skins. Shellac will stick to almost anything and helps ensure that the finish will adhere nicely to the skins.



I like Tru-Oil for a finish because it is easy to apply, it's durable, is simple to repair and results in a beautiful finish.



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I dab the tip of my finger lightly in the Tru-oil and apply evenly over the surface of the bow. I usually need to repeat about 4-5 times to cover the back of one limb. Be careful not to apply the finish too thick or it will create unsightly runs.



When the back is done I remove the bow from the vice and apply a light coat of finish to the edges.

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Then I clamp the bow again and apply a finish to the belly.



When I'm done applying the finish, I inspect the bow looking for runs. If I see one, I simply smooth it out with my finger. I then slowly rotate the bow for about 5 minutes. This will ensure that the finish flows evenly over all the surfaces.



I turn the bottle of Tru-Oil upside down to prevent it from hardening in the bottle.



In the winter I let the bow dry at least 12 hours between coats. In the summer months it can take as little as 4 hours to dry. Place the bow somewhere warm and dust free to dry.



After a couple of coats have been applied, I'll sand the skins between coats to remove the little "nibs" at the tips of the scales. With some 220-grit paper I sand lightly in the direction of the scales (from the handle to the tips). Be careful not to overdo this step as it is easy to sand through the skins – a couple of light stokes is sufficient. You're not trying to smooth the skins in one step – it will happen gradually over the course of several coats.



I'll also lightly sand the wood surface with 400-grit sandpaper about every 3rd or 4th coat to remove embedded dust and other surface irregularities. After sanding I wipe the bow down with a clean cloth and then blow any remaining dust off with compressed air.



Here is a close-up of the tip after about 4 coats of finish. In all I will apply about 10-12 coats of finish. But before I go much further I will need to letter the bow.



After a few coats of finish have been applied it is time to sign the bow. For this task I will enlist the help of my wife Jayne who has much better handwriting skills than I do. She will use white acrylic artists ink with a calligraphy-style pen.



The area to be lettered is prepared by sanding lightly with 400-grit sandpaper. My signature is written on the top limb and the owner's name and bow specs on the bottom limb.



And here is what the lettering looks like when done.



Now I can continue applying the remaining coats of finish to the bow.

After 10 coats of Tru-Oil the application of finish is complete. When I return from vacation I will add an arrow rest, wrap the handle and rub out the finish.

10 coats of Tru-Oil have been applied and allowed to cure for about a week. The bow is ready to build the foundation for a handle wrap. First I wrap the handle area with 50# braided Dacron fishing line and soak it with superglue. This will ensure that the rawhide and leather handle build-up will stay securely in place.



I am going to fashion the arrow rest from a wooden golf tee. This is a trick that I learned from John Strunk. I first flatten the top of the tee using a sheet of sandpaper laid on my bench.



Then I grind the tee in half using 60-grit sandpaper and trim the tail off.





The rest is glued to the handle using gel superglue and clamped.



Using a small file I shape the rest and feather it nicely into the handle. I then stain the rest a dark color.





I don't care for a shiny bow so I will rub out the finish to create a satin look. The materials I will use are 600-grit wet/dry sandpaper, course/medium/fine synthetic steel wool, and medium and fine pumice.



First I lightly sand the finish using water and 600-grit paper. This removes any imbedded dust and surface imperfections. Be very careful as it is easy to sand through the finish particularly when working the edges.



Next I rub the finish down with course synthetic wool, followed by medium wool and then fine wool.







By now the finish is very smooth but rather flat looking. I will polish the finish with pumice stone to restore its luster. I start by mixing the medium/course pumice with vegetable oil to create a slurry that is about the consistency of maple syrup.



I dip a clean rag in the oil and pumice mix and wipe the finish down with it. It takes surprisingly little rubbing to polish the surface.



When I am done with the medium/course pumice I wipe the limbs down with a clean rag. I then follow-up with the fine pumice stone to bring out the grain and give the bow a deep satin luster.



Next up – wrapping the handle.

 Logged

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The law of harvest is to reap more than you sow. Sow an act, and you reap a habit. Sow a habit and you reap a character. Sow a character and you reap a destiny. James Allen

SW Utah

[Justin Snyder](#)  
Administrator  
Member

 [Re: Gordons hazelnut build along TUTORIAL](#)  
« Reply #3 on: January 07, 2008, 09:53:44 AM »

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Here is picture of the tools and materials that I will use to wrap the handle.

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Online

Posts: 4745

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I am going to fashion the handle from a piece of tanned elk hide. Using a rotary cutter I cut out a piece that is about 4 1/2" square.



I then wrap the piece around the handle and fit it at the top, middle and bottom of

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the handle.



Using a pencil I connect the marks which give me a line to cut along.





Next I use a thonging chisel to create the holes for the lacing. I'll trim the length of the leather to about 4 1/4" and make sure that I have an even number of holes on each side.





I use black dye to dye the leather including the edges.



I will glue the leather down in area around the arrow rest to hold it in place. For

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this I use barge cement on both the leather and the handle.



Let the cement dry for about 15 minutes and then carefully position the leather on the handle and work it around the arrow rest.

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For the lacing I will use kangaroo leather as it is extremely tough and wear resistant. I cut off a length and attach leather needles on each end.



I begin the lacing like I am tying a shoe. I thread the lace underneath and through the top two holes leaving the ends the same length.



Next make a cross stitch by threading each end through the holes on the opposite sides.



Then thread each end through the next hole on the same side.





Now make another cross-stitch and repeat for the length of the handle.





I cut the leftover tags back, tuck them under the leather handle and secure the works with a couple of drops of superglue.



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<https://mail.google.com/mail/?ui=2&...>

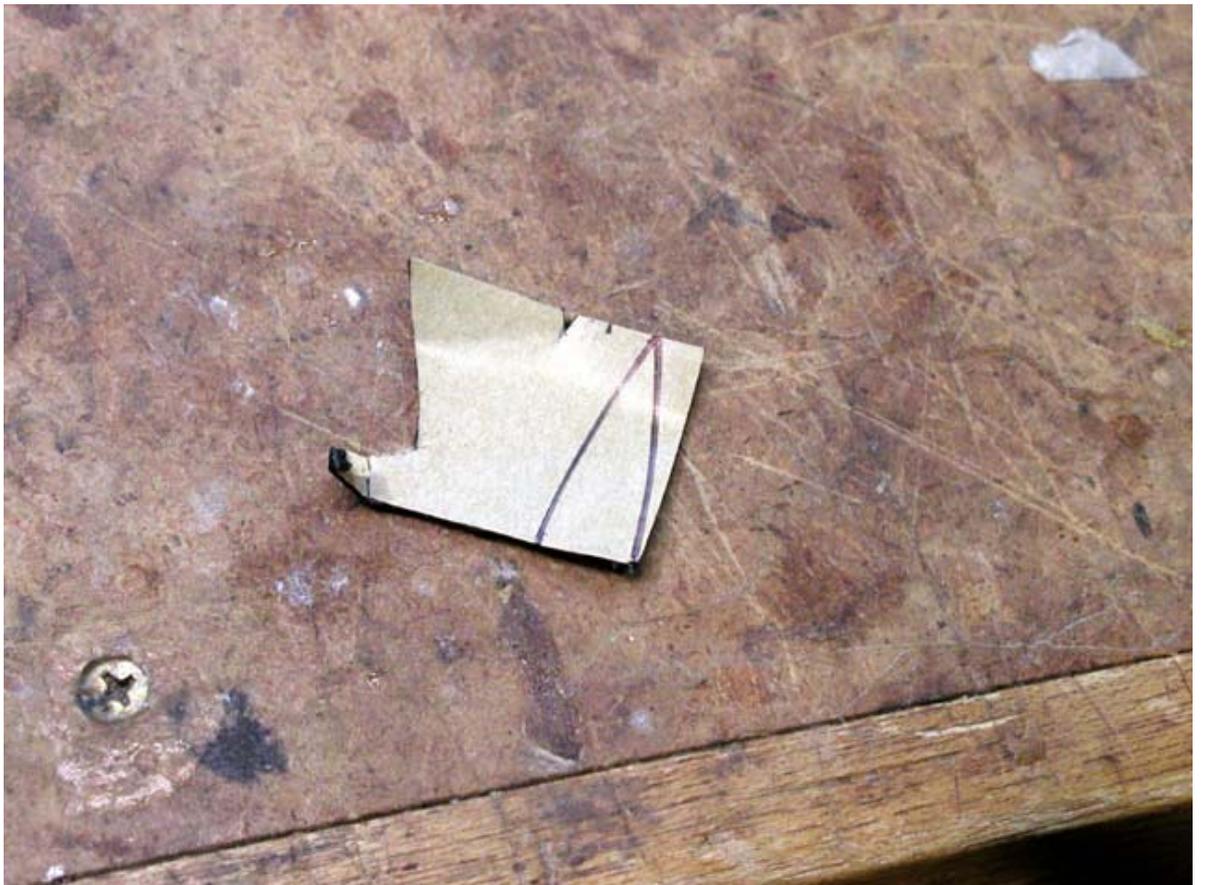
I like to treat my finished handles with a leather lacquer finish. It helps the leather resist dirt and oil and the handle will look much better after hard use.



For the arrow rest I'll use a piece of stick-on leather. I use a plate to help me make a nicely shaped rest.

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The bow is finally done! Here are a few pictures of the completed bow.









Here are the bow's specifications. This bow is 60" ntn, 55# @ 27", rattlesnake over silk backing, and hardwood tip overlays. The limbs are 1 3/8" wide tapering to 7/16" at the tips and 1 1/4" at the handle. The bow bends slightly through the handle. The handle wrap is tanned elk-hide dyed black. The tips and limbs are dyed with leather dye. The tip accents are done with red serving thread.

The bow has a slight amount of string follow at rest and is a sweet shooter. I think Mike will like it. Here are some pictures:









 Logged

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The law of harvest is to reap more than you sow. Sow an act, and you reap a habit. Sow a habit and you reap a character. Sow a character and you reap a destiny. James Allen

SW Utah

[Otoe Bow](#)

Member



[Re: Gordons hazelnut D-bow build along TUTORIAL](#)

« **Reply #4 on:** January 07, 2008, 02:59:56 PM »

 Offline

Justin: That is awesome. I really appreciate you doing the consolidation.

Posts: 832

Otoe

Mike Chase,  
Central  
Oklahoma

 Logged

Life's too short to hunt with plastic bows

30/05/2009

https://mail.google.com/mail/?ui=2&...

[cowboy](#)

Global Moderator Member

 Offline

Posts: 3105

Paul Wolfe.  
Springtown,  
TX

 [Re: Gordons hazelnut D-bow build along TUTORIAL](#)  
« **Reply #5 on:** January 07, 2008, 03:22:51 PM »

Just went through the whole thing again - had forgotten what the stave looked like. Amazing what can be coaxed out of a chunk of wood!! Glad you saved it like this Justin, easy reference..

 Logged

When you come upon a track or trail you do not know, follow it to the point of knowing.

[adb](#)

Member

 Online

Posts: 878

 [Re: Gordons hazelnut D-bow build along TUTORIAL](#)  
« **Reply #6 on:** January 11, 2008, 07:13:58 PM »

Awesome job Justin and Gordon. A very informative tutorial.

 Logged

[Badger](#)

Member

 Offline

Posts: 1473

 [Re: Gordons hazelnut D-bow build along TUTORIAL](#)  
« **Reply #7 on:** February 04, 2008, 10:28:55 PM »

I just went through the entire build along and it was fantastic, I think well worth publishing! By far the best buildalong I have ever seen. Great craftsmanship, I know this is going to help a of bowers out there, I will refer back myself next time I wrap a handle. Can't say enough, I felt like I was right there with you building it!  
Steve

 Logged

[uwe](#)

Member

 Offline

Posts: 283

 [Re: Gordons hazelnut D-bow build along TUTORIAL](#)  
« **Reply #8 on:** February 05, 2008, 12:13:04 PM »

Very nice to see the detailed way of step into life. Looks like as "How to..."  
The result is superb!  
Regards Uwe

 Logged

[robustus](#)

Member

 Offline

Posts: 87

 [Re: Gordons hazelnut D-bow build along TUTORIAL](#)  
« **Reply #9 on:** August 26, 2008, 05:37:21 PM »

very,very,very nice!!!! exceptional detail and instruction.....james  
...robustusmagnon

 Logged

[mullet](#)

 [Re: Gordons hazelnut D-bow build along TUTORIAL](#)

30/05/2009

Global  
Moderator  
Member

https://mail.google.com/mail/?ui=2&...

 « **Reply #10 on:** August 27, 2008, 07:31:36 AM »

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I just went back and reread this. Gordon, that is the best buildalong I've seen. I'm with Steve, I think it is publishable also.

 Online

Posts: 4669

 Logged

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Eddie Parker Lakeland,FL

"Watch out where those Huskies go,  
and don't eat that yellow snow"

[stickbender](#)

Member

 [Re: Gordons hazelnut D-bow build along TUTORIAL](#)  
« **Reply #11 on:** September 03, 2008, 09:32:59 AM »

 Offline

Posts: 456

I can only agree with all the others. Absolutely beautiful! A tip I picked up years ago from a friend of mine who used to make custom bars, and tables. When He would put on the coats of finish, he would let it get just about tacky, and then he would mist it with acetone, and the little bubbles would just disappear. The acetone would melt the bubbles surface, and it would burst, and go back down. He would let it dry, and lightly go over it with very fine steel wool, and then repeat the process till he had the coats he wanted. The results were absolutely smooth finishes. Also for the little fine fibers that pop up after sanding, lightly damp the surface, and they will rise up, and then take a torch, and lightly go over them, and they will not need to be sanded.

Again, an absolutely beautiful bow. And arrow I might add! You would have done well in medieval times. You would have been in demand for sure. Probably wouldn't have time to have been able to enjoy your own bow though. I also agree about the build along.

definitely worth printing it out and putting it in a binder, for my personal reference, and it would be great in a book, or video. It is very enjoyable to watch an artist at work. Especially one who has the patience to wait for the results he is looking for, and takes pride in his or her work. I used to live in the Virgin Islands, and there was an old craftsman there on St. Croix, by the name of Fletcher Pence, who made the most beautiful tables, and chairs, out of licorice wood, and other exotic woods on the island. When you called to get directions, he would tell you call before you came up. Otherwise he would not put shorts on, and he would just walk up to your car, wearing just a nail apron. He was a tad eccentric. He'd take your order, and when he found the correct and matching wood, he would tell you how long it would be for your order to be finished. Then he would tell you how you should put the product in your car, and what to bring to protect it. If You showed up, and didn't have a thick comforter, or packing pad, to protect the product, he would tell you to go get the pads, or you can have your money back. Again Beautiful work, I hope you will do another. Perhaps on arrows, or another style of bow.

Wayne

 Logged

[ballista](#)

 [Re: Gordons hazelnut D-bow build along TUTORIAL](#)

« **Reply #12 on:** October 02, 2008, 08:53:09 PM »

Offline  
Posts: 198

... this is the most informative buildalong i think anyone can create. the bow, of course, is absolutley beautiful, but my favourite part is that the bow isn't laminated, its a very primitave design, yet the simple, humble decorations make the bow absolutley perfect. #55 lbs is perfect for hunting, and you can shoot alot, and not strain your arms much. \*A master of his craft-congrats-the few questions i have, what stain did you use on the light brown protion? do you think deft could work as well as tru oil/where could you buy tru oil/would hickory retain the reflex as well as the hazelnut (i believe pignut hickory if that helps) ? otherwise, this is the most helpful information on making primitive bows, with a more modern beauty. -jimmy

Logged

Gordon  
Member

« **Re: Gordons hazelnut D-bow build along TUTORIAL**  
**Reply #13 on:** October 04, 2008, 06:44:04 PM »

Offline  
Posts: 1164

Ballista,  
All the staining on this bow was done with leather dye. I'm sure you could get a fine result using a Deft finish. You can find Tru-Oil at many sporting goods stores as it is commonly used for finishing gun-stocks. You can also find it at most fine woodworking stores. Hickory would work well with this design - you just want to make sure it is nice and dry. Thank you for the compliments.

Logged

Gordon

ballista  
Member

« **Re: Gordons hazelnut D-bow build along TUTORIAL**  
**Reply #14 on:** October 05, 2008, 09:43:09 AM »

Offline  
Posts: 198

oh ok, tru oil is really made for weather then-it looked alot more quality than the spray can of deft i was using, and the leather dye looked superb. great, great work, i look at this post a few times a day, im going to try to build a similar style bow. - jimmy

Logged

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