Horn bow nocks for long bow

Horn nocks, the icing on the cake for every long bow...

After I had built my first long bow in November 06, after plentiful consideration I decided to build horn bow nocks in June 07. As this was my first bow and were going to be my first bow nocks I found the thought of carving and rasping on the otherwise finished and functioning bow rather uncanny. After a lot of reserch and some good pieces of advice I finally dared to get started...

I used two somewhat different procedures for the upper and lower nock, whereby I will give the first one the preference next time round:

Variant one

Plane the horn on both sides to form parallel faces (bow diameter measured at desired point of transition to the nock plus 2mm on either side) This way the horn can easily be clamped in a vice for later drilling...

Subsequently, pre-drilled with 3mm first and counerbored with 6,5mm and finally conically bored with a cone skaped rasp (6,5mm being the smaller cone dimeter on my bow end). The stench is bearable if one holds back oneself with the number of revolutions. If the horn becomes too hot and burns it will also bake to the drill and is quite hard to get it off the tool > file brush)

Variant two
first drill then plane... that is what I thought at least... not so smart since the horn did not want to stay in the vice despite of various soft and gripping chucks. Variant one proved to be a lot less stressful.

At the following steps great attention has to be paid to the accuracy of the cone. If one bores an uneven (non circular) cone one has a genuine problem, because the depression can be filled up with epoxy and be sanded but you might see this later –depending on how this the horn becomes here- in front of the bright wood.

I chose not to shape the nocks while already fitted on the bow for safety reason – call me a chicken... The nock blank is then fixed on a stick (ex-arrow shaft e.g.) and then slowly shaped on a belt sander.

I sanded the nock from four sides first then broke the edges and the slowly worked the end shape.

Upper and lower Nock (surprise, the horn is not black at all, but black-beige... which I found quite charming however). A beltsander is quite a blessing for this kind of work. Both the flat surface of the sander and the cylinder do a great service. Good old hand work (knive, file rasp) would of course have done the same job... only slower.

The upper nock after completion of belt sander work:

With this step one must watch out much that one does not sand the lower –open- edge too thin. At my nock it was still about 1mm.

The upper nock brought into the final shape with files and sandpaper (while still being held on the stick in the vice):

Now it is the bow's turn.
If one did not have the luck to obtain a fitting conical sharpener along with the drill one now has to shape the cone on the bow end by hand with some skill.
In order to do so I first sanded the bow's end square then octagonal on the beltsander and then rounded it off with a file.

Hereby the center of the cone is close to the bows back (in order to hurt as few growth rings as possible).

Sorry, the following illustration is by another guy and only in german. But i Think it speaks for itself.

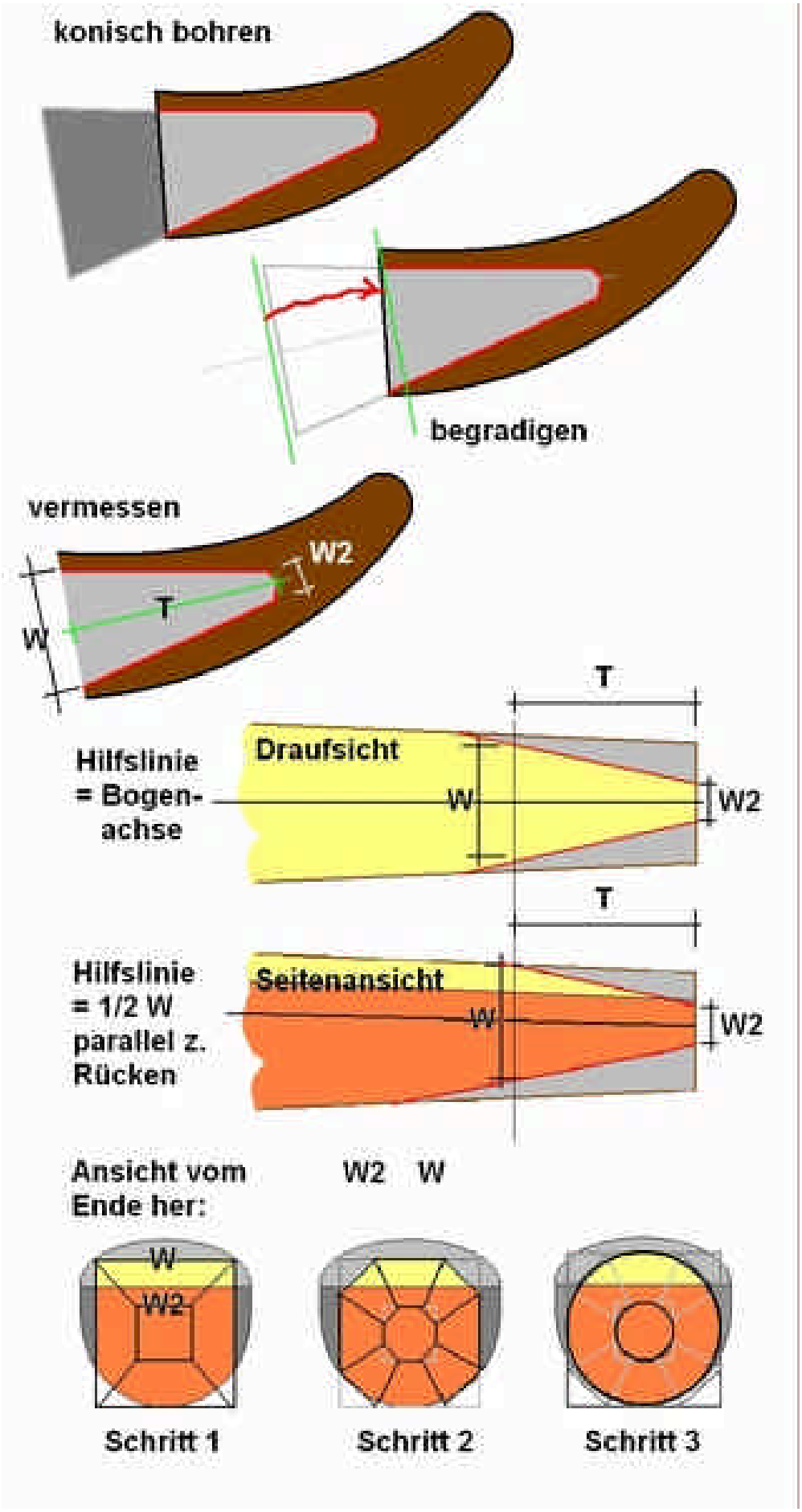

Illustration by Ralf Konow

I rubbed the nock cone with a pencil and then on the bow cone several times in order to be able to see where it is still uneven. The marks tell you where to take more wood of.
Make sure you thoroughly degrease the inside of the nocks afterwards. Graphite is a greate release agent!

The tillering string notches did not completely disappear in my case but are covered within the nock. The hollows are simply filled with apoxy later.

I used aslow setting poxy. Before pushing the nock onto the bow I carefully heated it it up with a hot air gun (which makes the horn a little soft and will give you an even better fit) and then applied the epoxy to the bow and nock and pushed it on.

A tini notch at the bows belly withh permit the air and epoxy to escape (otherwise the nock might just pop off due to the pressure inside)

After cooling the nocks sat on the bow so tightly that a slight correction of the angle was only possoble with the nock in the vice and the bow in my hands...

After the epoxy had cured the transitions between nock and wood are sanded flush (with makes it easier for the string to slip over later...) and the nocks are wetsanded.
On my nocks I only applied a mixture of linseed oil with turpentine since the silk-matte look fits well with that of the bow which was treated the same way.

To sum it up I can encourage everyone to try it at times! It was a lot more simple than I would have ever imagined. The first nock took me about 3 hours all in all (with much try and error) the second only half the time. With the appropriate machines or tools a little courage and an insensitive nose; -) this is really doable.
For reasons of security (for the bow) I would however never shape the nocks on the bow.

I think the speaks for itself...

Upper nock:

Lower nock:

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