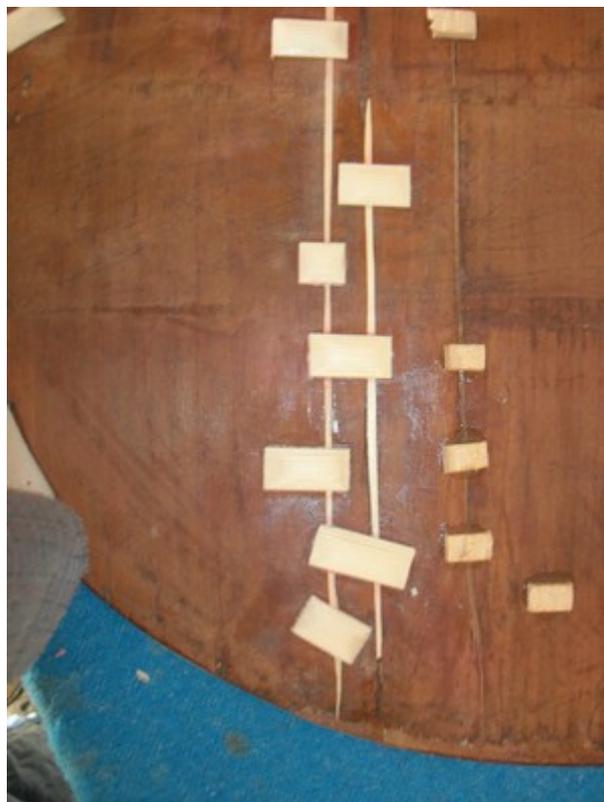


I reinforce the crack with cleats, one of which, in the soundpost bar area, I will later remove.

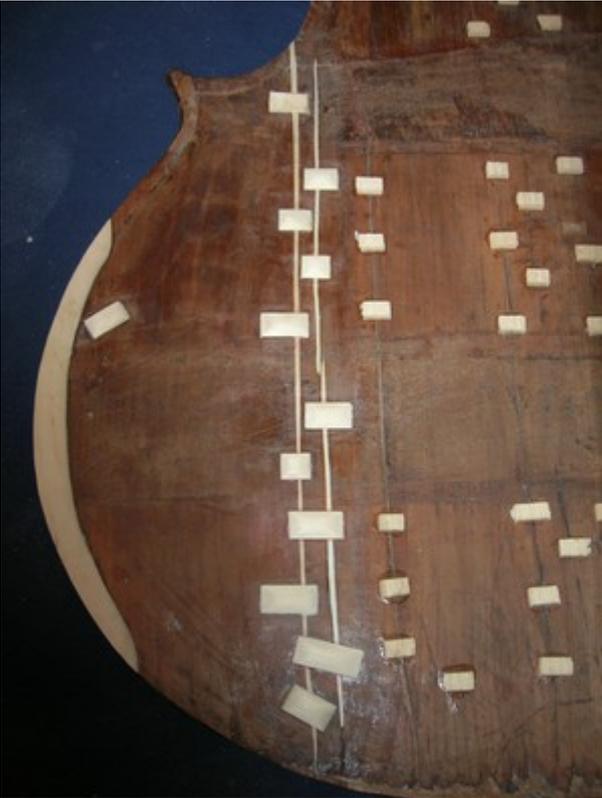


The next two cracks, above and below the lower bar, have been repaired with slivers of walnut and putty, and are partially open.

I first repair the lower crack.



I then repair the upper crack.



I make an edge doubling at the C bout and the lower corner on the bass side.



The next crack, on the lower bass side, has been repaired with a sliver of walnut.

From the outside the sliver is well glued and the crack is level, inside the sides of the crack are slightly offset, and the sliver shows gaps.

I work from the inside, without touching the outer surface, inserting a new sliver into the back, which enters halfway into the thickness.

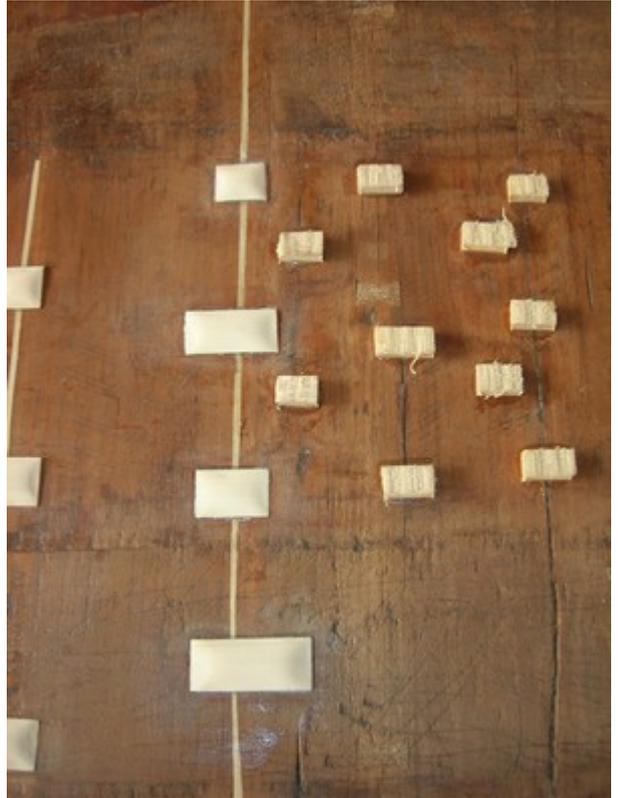
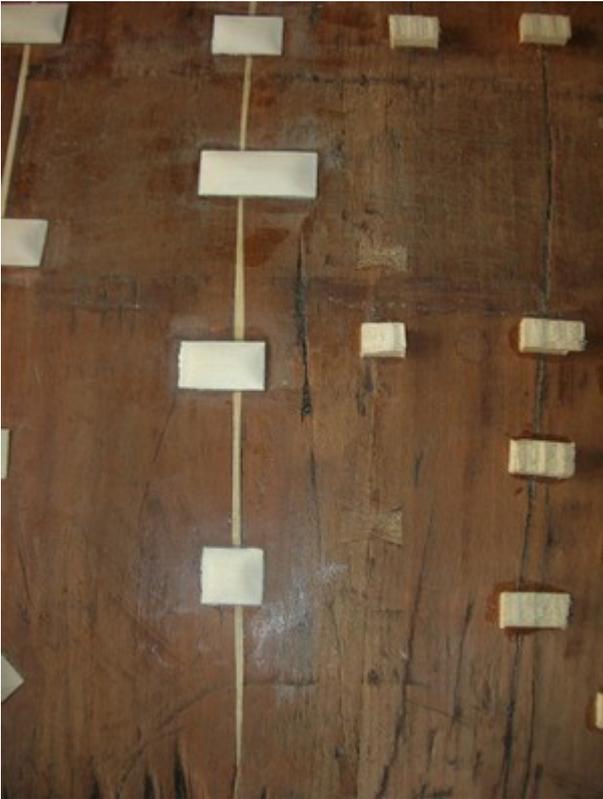
The offset sides of the crack inside do not merit a doubling, and the crack can be reinforced with the adjustment of the cleats.



The next crack runs from the glueing surface of the lower block to the center of the instrument. The sides are partially offset, and it has been filled with strips of walnut and putty. I reopen the crack, remove the fillers and close the crack with a new sliver.



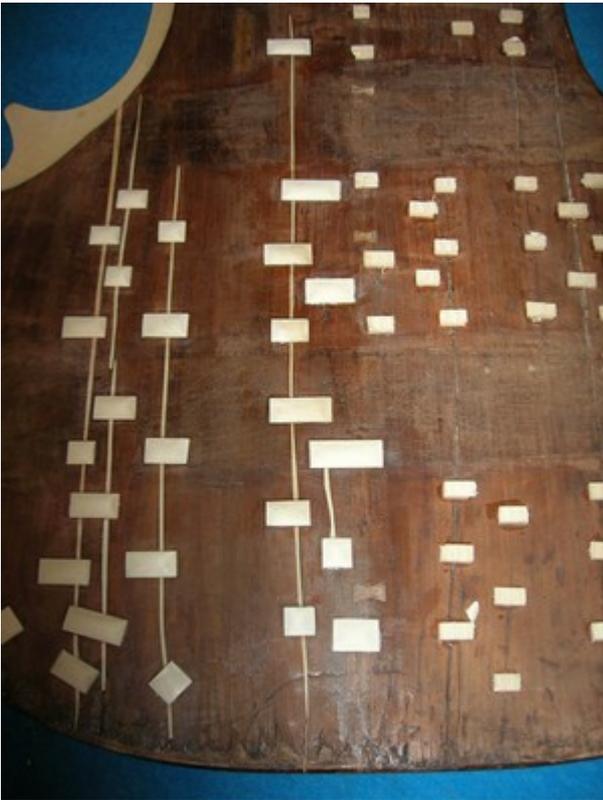
Continuing towards the central joint, in the lower section there are three small cracks, the first between the lower block and the lower bar, the second under the bar, and the third above it.



The first is well glued and level, but has a gap filled with glue on the inside; the second and third are partially open and offset, with brownish retouches to the varnish.

I remove the temporary cleats and repair the cracks, inserting maple into the gaps.

The central joint in this area is solid, maybe due to the butterfly inserts, and I can reinforce it with cleats without reopening.



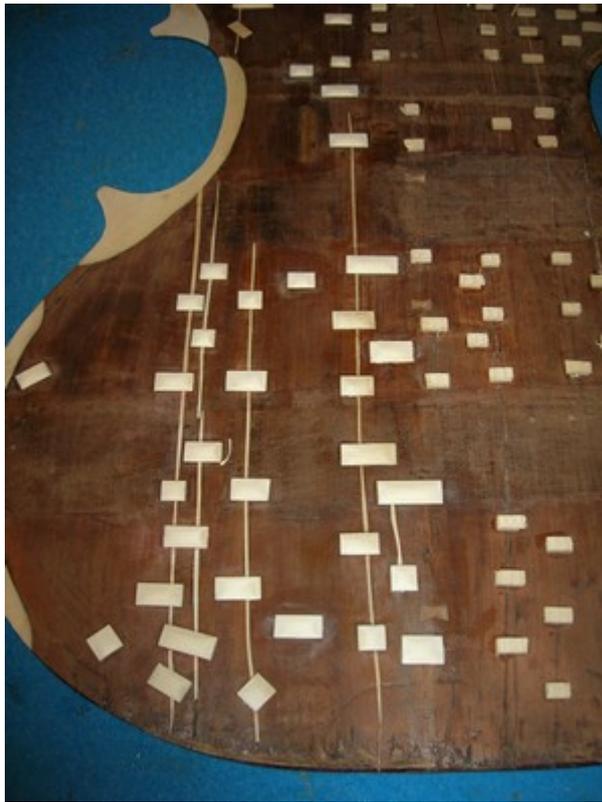
In the center there is a crack next to the label, which I repair inserting glue from the outside and placing cleats on the sides. This way I do not risk damaging the label, while a large part of the crack will be reinforced by the soundpost bar.





At the same time I repair a small crack on the bass side of the lower block.





In the upper section, between the bend and the soundpost bar, along the side of the central joint on the bass side, there is a long crack, repaired without filler, partially open and dirty.



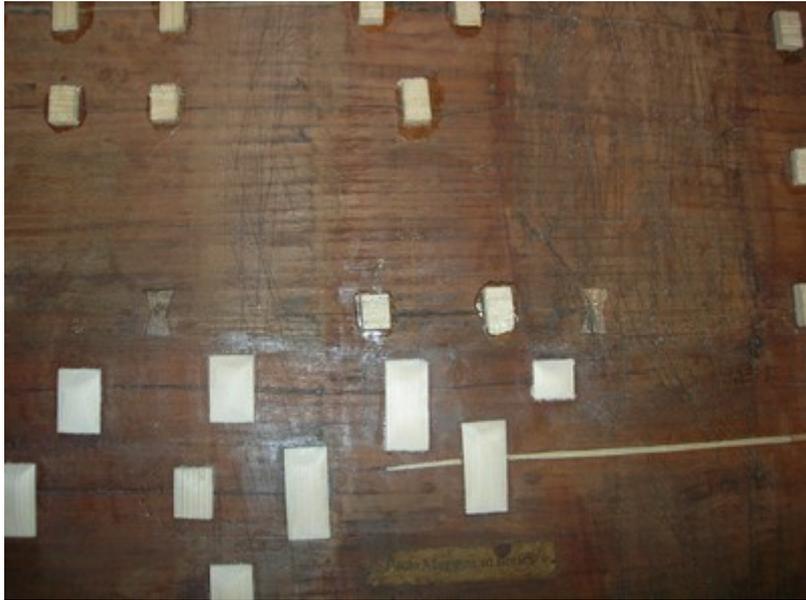
I remove the temporary cleats, reopen, clean and glue the crack, reinforcing with cleats.



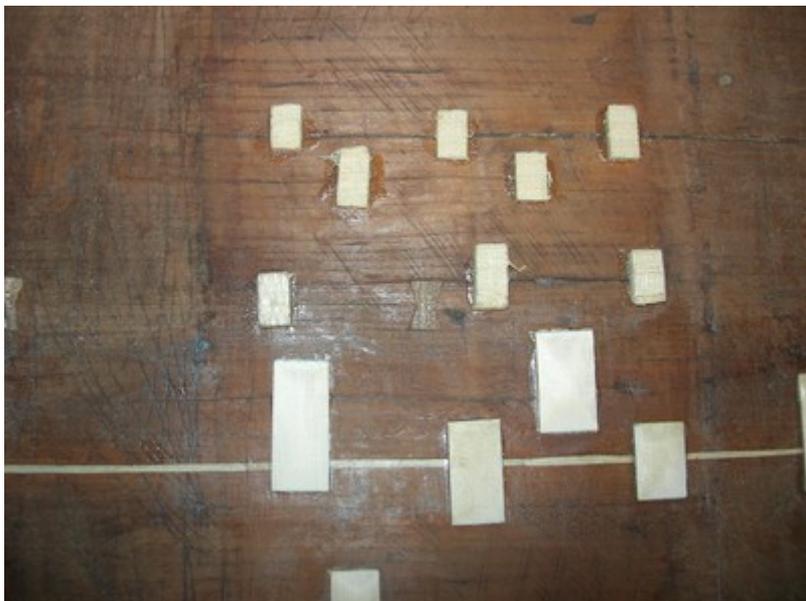
In spite of, or maybe thanks to the butterfly inserts, the central joint is for the most part closed.



The exception is a short area on top of the soundpost bar, which has been repaired with a walnut shim.



Also, under the soundpost bar, next to one of the butterfly inserts and by this probably caused, there is a crack, repaired with a walnut shim as well.



I reopen and repair the two openings, and reinforce the central joint with cleats

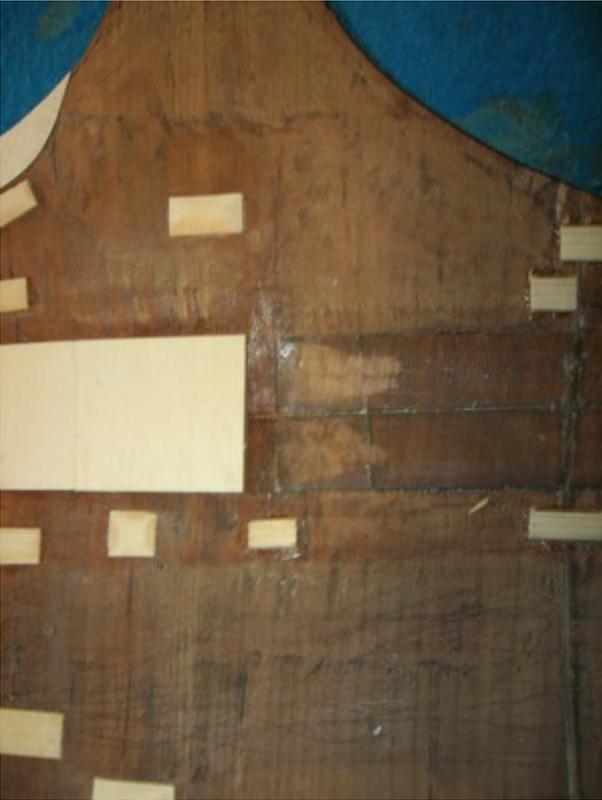


I remove part of the bend reinforcement, uncovering the joint and a butterfly insert.

In this way it can be noticed that the section of the back on the upper side of the bend was shifted of about 2 millimetres towards the treble side, probably during a previous bend repair.



I replace part of the reinforcement at the bend.



I remove the next section, uncovering a crack that starts at the upper block's glueing surface and continues down to the upper bar, through the bend, where it is open.



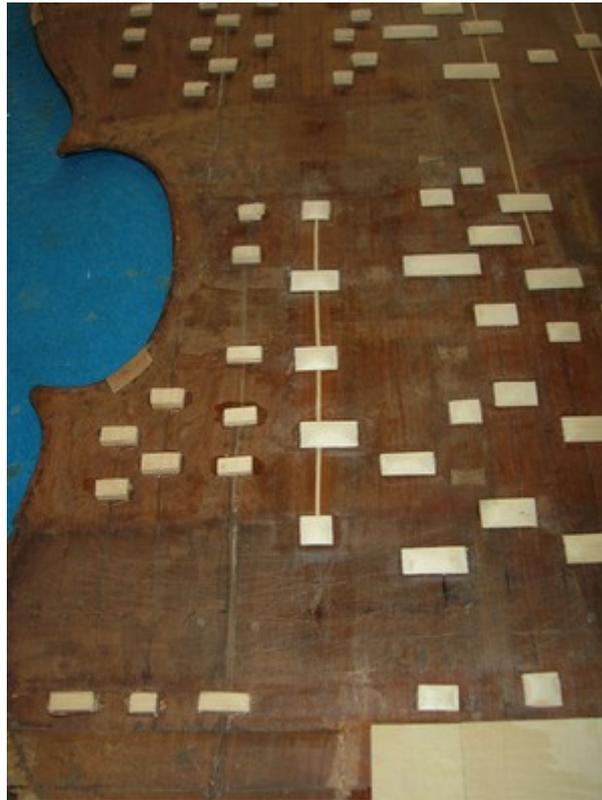
I repair the crack and replace another part of the reinforcement.



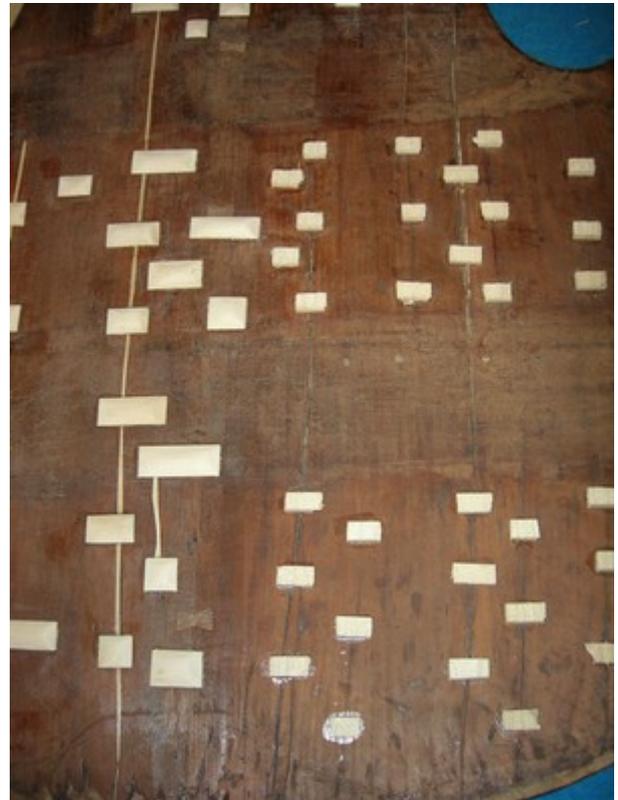
In the area between the upper bar and the soundpost bar, there is a crack repaired with a walnut shim, well glued from the inside, but open and putty filled on the outside.



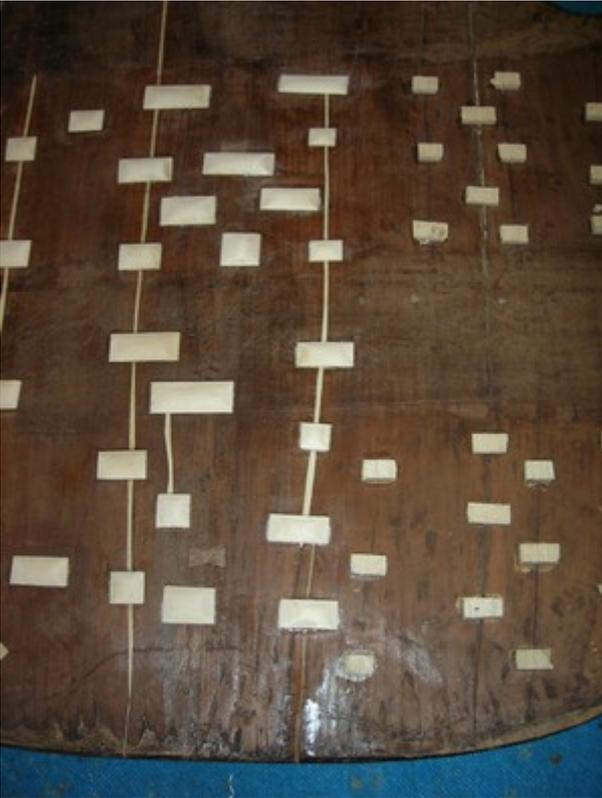
I remove the temporary cleats, clean and repair.



There is another open crack between the soundpost area and the lower edge, repaired with a walnut shim and putty, and two shorter cracks alongside, one right under the soundpost bar, the other at the lower edge.



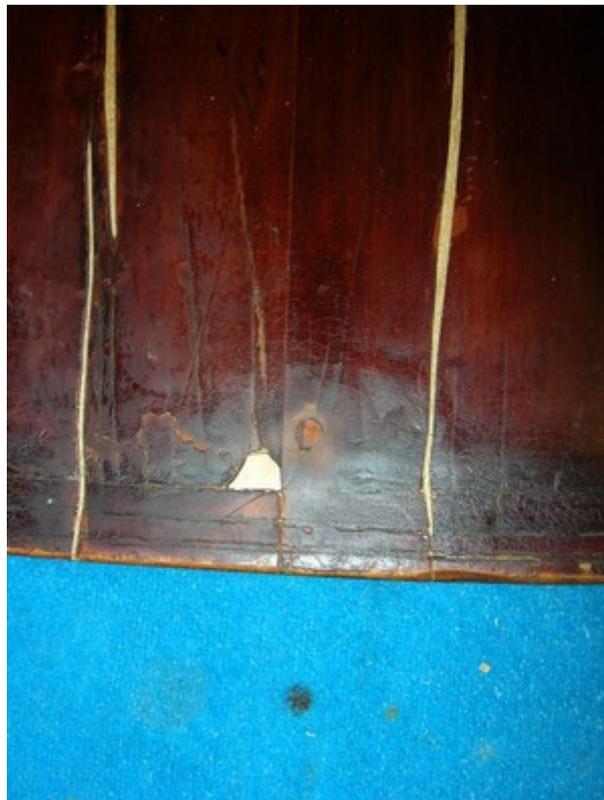
I remove the temporary cleats, clean and repair.



At the glueing surface of the lower block, a broken part has been reglued and a missing part filled.
There is an hole flared on the outside as well.



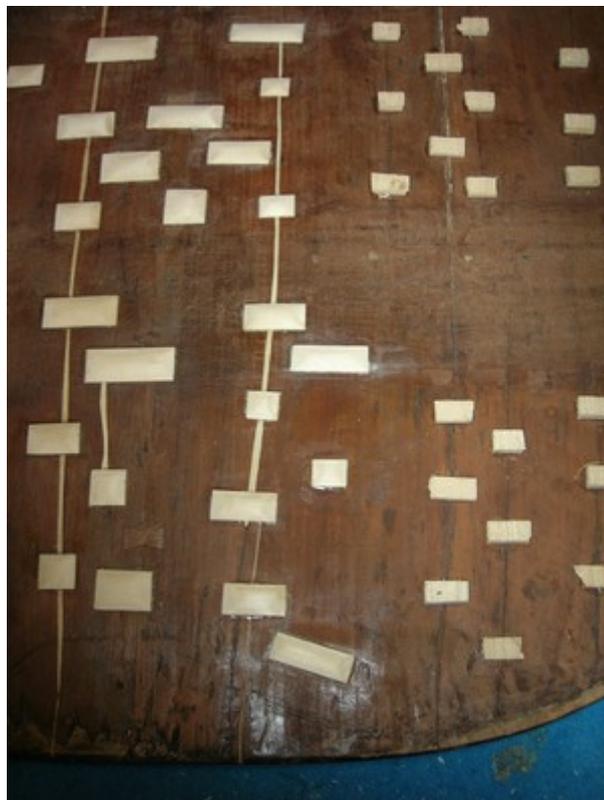
I remake the missing parts.



On the side of the block area there is an open crack about 16 centimetres long.



I reopen, clean and repair.



I remove another section of the bend reinforcement and remake part of it.

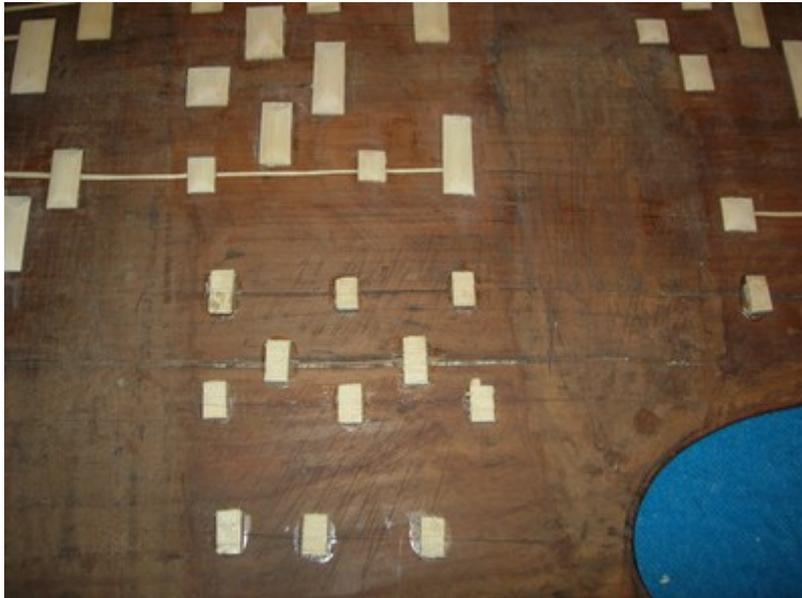


Then I uncover a crack by removing another section of the reinforcement.



This runs from the upper edge to the lower bar.

The section between the lower bar and the soundpost bar is open but has no filling shims.



From the soundpost bar to the upper edge there are many shims, some side by side, and putty.

Also, the sides of the crack are offset on the inside, while they were smoothed and retouched from the outside, making the joint sunken.





I remove the temporary cleats and clean the crack.



Then repair the lower part with no filling shims, replace the two upper shims and put new cleats.



I pushed both sides of the crack on a flat surface on the outside to eliminate the sinking, while the unlevelling on the inside will remain as it is, with the cleats shaped to follow it.

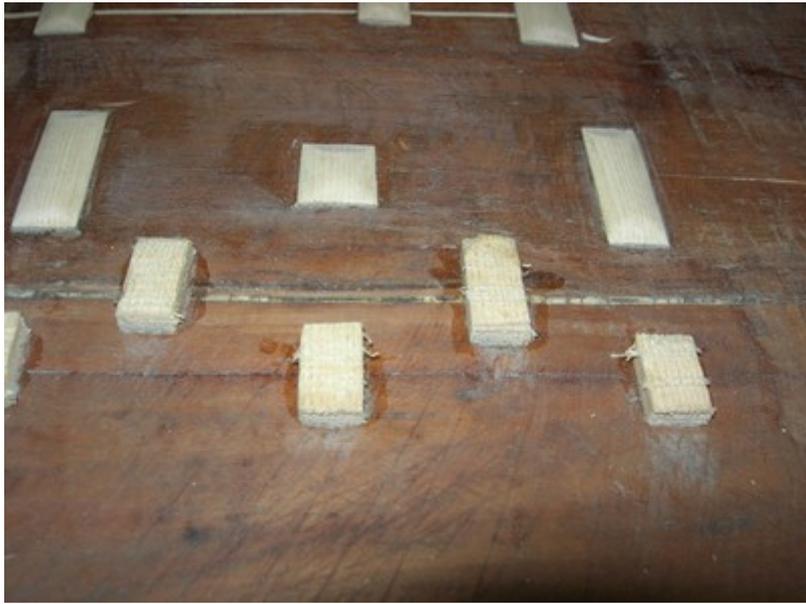


I replace another section of the reinforcement.



There is a crack in the lower part between the lower edge and the treble C bout, repaired with shims and filler.





I remove the temporary cleats, open, clean, replace the shim and put new cleats.



Two more cracks run parallel to the last, one between the lower edge and the glueing surface of the lower bar, the second one between the bar and the treble C bout.

In the lower crack a walnut shim was inserted from the outside, properly glued but missing a part on the inside



I open, clean and repair, with a shim to fill the crack inside.



In the upper part, I remove a section of the reinforcement, at the edge.





I make an edge doubling at the bend.



Then remove the last section of the old reinforcement at the bend.



In the lower treble part there is a last crack, between the lower edge and lower corner, properly repaired with a shim, well glued.



I remove the temporary cleats, clean and reinforce with new cleats.



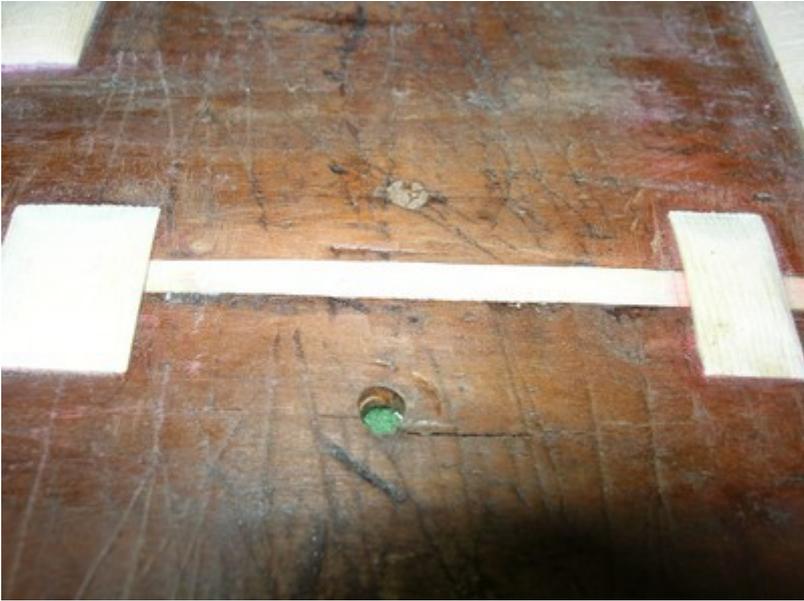
The widest part of the treble lower bout was reconstructed in various parts.



I make a reinforcing edge doubling on the inside.



In the upper part I remove a pin in the upper bar glueing surface, which caused a small crack.

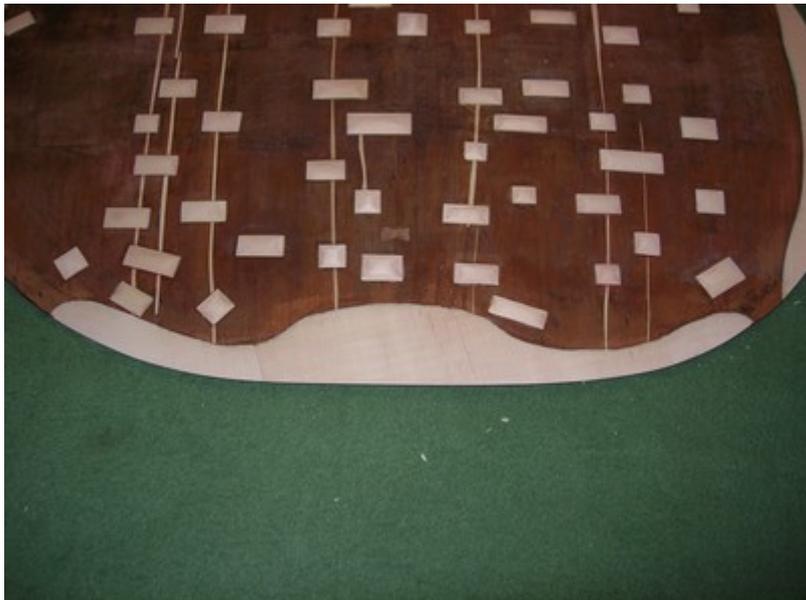


I repair a crack that runs between the upper edge and the C bout, and replace a shim that was inserted from the outside with some filling.





I make a doubling of the lower edge, which had been replaced, in order to give structure and a better glueing surface.



In the upper part, a crack is open from the bend to a reconstruction at the treble C bout. The reconstruction has the grain parallel to the C bout's edge.



It has been repaired from the outside with a walnut shim and filler.



Next to this one, between the bend and the upper bar, a second small crack is open. I clean and repair the two cracks, replacing the shim with a longer one.



I remove the last temporary cleat and make a doubling of the upper treble edge, from the bend to the upper block glueing surface, to have better glueing surface between the back and ribs.



I then make an edge doubling from the bend to the lower corner, to have a better glueing surface, to secure the upper reconstruction, to thin out and make less dangerous the reconstruction at the C bout, and to fill some missing spots.





I make the last part of the reinforcement at the bend, and finish it by thinning it out.



I make a doubling of the upper block's glueing surface.



I replace the back button, leaving margin to finish.



I decide to place three bars on the back.

The bar structure that I found initially had four bars, none of which original.

Of all the glueing surfaces of the back to the bars, the one for the smaller bar is less damaged than the others, which probably have been replaced more than once.

The small bar seemed more recent than the others, and even though I have no certainty about the original bar placement, I may think that at some point a three bar system was used on this instrument.

Considering the damages at the back's surface, the upper and lower bars might have been around 20 millimetres wide, with an inclination converging towards the treble side, having the upper bar parallel to the bend and the lower one inclined.

The glueing surfaces of the ribs to the back are flat enough to think of the back being flat, not arched on curved bars.

I make the upper and lower bar flat, and adjust them to fit the irregularities of the back surface.

The width is 20 millimetres and the placement is as indicated by the damages.





The glueing surface of the soundpost bar shows signs of at least two previous bars.

The more recent one, possibly made by Degani, was wider on the treble side, narrowing down towards the bass side.

A previous one, narrower, had similar shape but sharper curves.

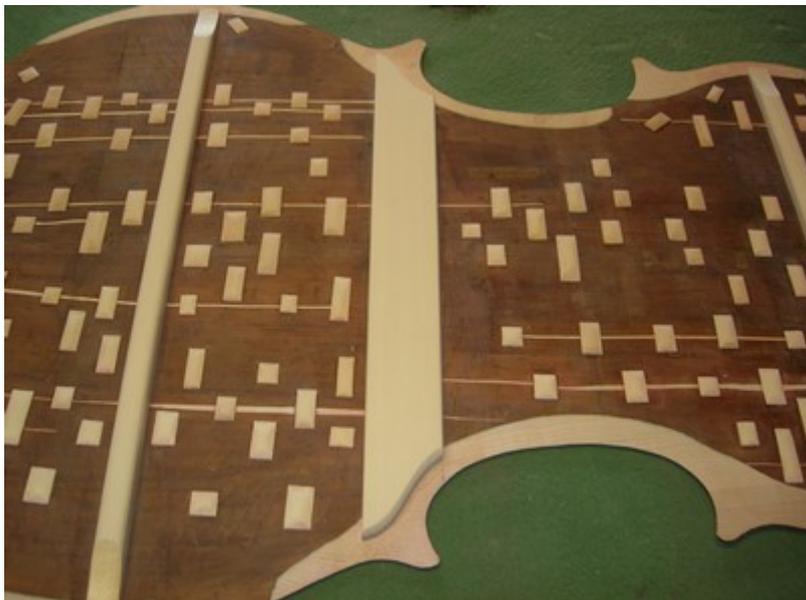
Both covered a butterfly insert at the center joint.





I decide to make a bar parallel to the upper one and to the bend, of constant width, narrow enough to not cover the butterfly insert.

After making sure that the soundpost position would not be compromised, I make it.



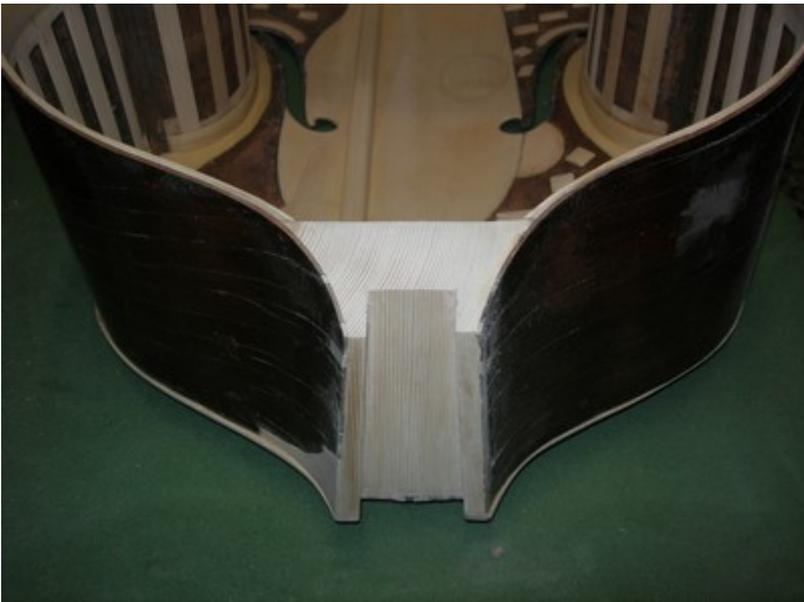


It is fascinating, without requiring this to be the author's intention, or that it would have any definite acoustic influence, that the distance between the soundpost bar and the upper bar, measured along the center line, is about double the distance between the soundpost bar and the lower bar. The distance between the upper bar and the upper edge, without including the button, and the distance between the lower bar and the lower edge, are the same, and are one and a half the distance between the soundpost bar and the lower bar.

I work on the already assembled ribs-top, to prepare the endpin hole.



Then prepare the mortise, leaving margin for the last adjustment.



I glue cotton strips in the inside to reinforce weak points.



I close the body.



