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Restoration of a Brescian style double bass

The instrument is property of Maestro Ezio Pederzani

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Neck

I remove the reconstructions in ebony and filler from the pegbox cheeks.

It is possible to see that at least two different stringings were used before the current.

One used three strings.

The hole closer to the scroll used for this stringing had been closed, of the central one a trace remains on the part of the cheek left from the carvings made to fit the external reconstructions and the graft, while the hole closer to the nut has been reused.

The three holes are aligned with pins on the back of the pegbox, which probably replace metal ones ment to keep in place an old kind of tuning gears.

The fact that the three holes on the cheeks are more or less perpendicular to the pegbox's centerline suggests that maybe pegs were used before.

Another type of stringing of which remains a trace is the one with four strings using full-plate mechanics inserted in the pegbox cheeks.

Then, these gears were removed, ebony plates set on the cheeks, peg holes repositioned, neck grafted.

I cannot determine whether the head is or is not coeval to the body of the instrument

The scroll and pegbox are in walnut, while back and ribs are in cherrywood, and is better preserved.

The back of the pegbox and scroll is single fluted, the cheeks have no corners, the scroll has half a turn more than what is common today.

The position of the plugged hole, the last one of the three string set up, suggests that the peg box excavation has been extended to leave space for the four strings set up.

The nut's glueing surface, clearly finished together with the graft and cheeks, and the fact that the upper edge of the cheeks is lower than the nut, are clues that the cheeks were modified during the finishing of the neck graft.

The cheeks are tilted towards the back of the peg box, which is 8 millimetres narrower than the upper part.

This contour continues in the first turn of the scroll, which is convex in the first part.

I smooth the glueing surfaces and make the cheeks reconstructions; I drill holes corresponding the existing ones for the entering of the tuning gears, in order to not compromise the solidity with new holes.

The exiting holes were not centered, so I had to close and redrill them, under the cheeks reconstructions.

I decide to graft the neck, to get a strong mortise at the heel - upper block joint.

Also, I want more overstand on the top, and I need an heel that fit the habits of today's musicians.

The existing heel is "milanese" style, commonly used in the first half of the '900, up to the '70s, having the thumb at the heel opposite to the second finger and the first finger playing Eb on the first string.

As I remove the fingerboard, it is possible to see marks made with a pointed tool on the glueing surfaces, very similar to the ones found on the back.

I make the cuts to graft the neck.

The previous graft had squared upper edges.

I do not remove the upper parts of the cheeks of the old graft, which are solid, to avoid weakening, and on these I make the new graft.

I though completely remove the remainings of the old graft from the back of the peg box.
The spine in the center of the button is flared towards the inside.

It is possible that before the last graft a screw was used for a bad repair of the base of the peg box.

The glueing surface of the peg box to the graft shows pointed tool marks as well.

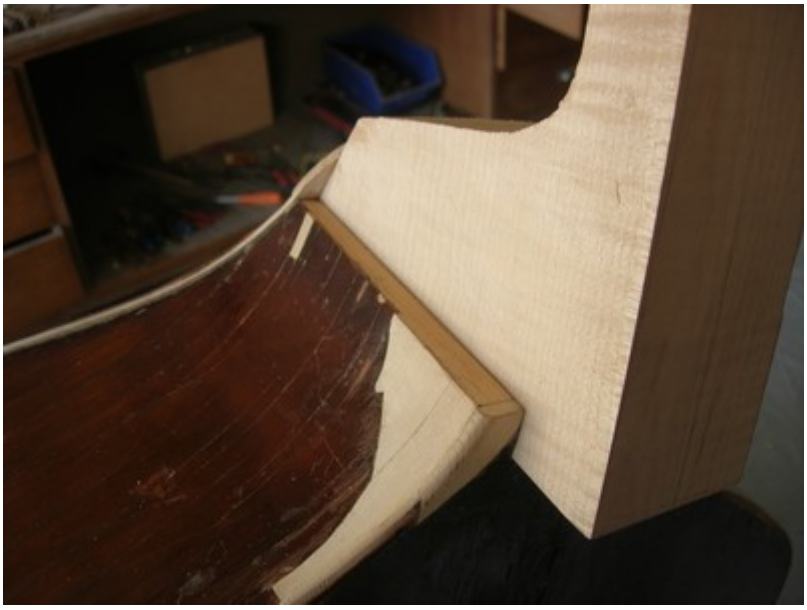
I make the new graft.

I glue and finish it.

I fit the tuning gears.

I decided to use four parts gears, mounted on single plates, for a minimum impact on the peg box wood.

I prepare the mortise.



I rough out the neck.

I prepare the internal part of the back button, which will be finished with an ebony crown.

I cut a fingerboard, temporarily glue it on the neck, and smooth the whole.

I glue the neck to the body.

I make and glue two ebony columns at the sides of the heel.

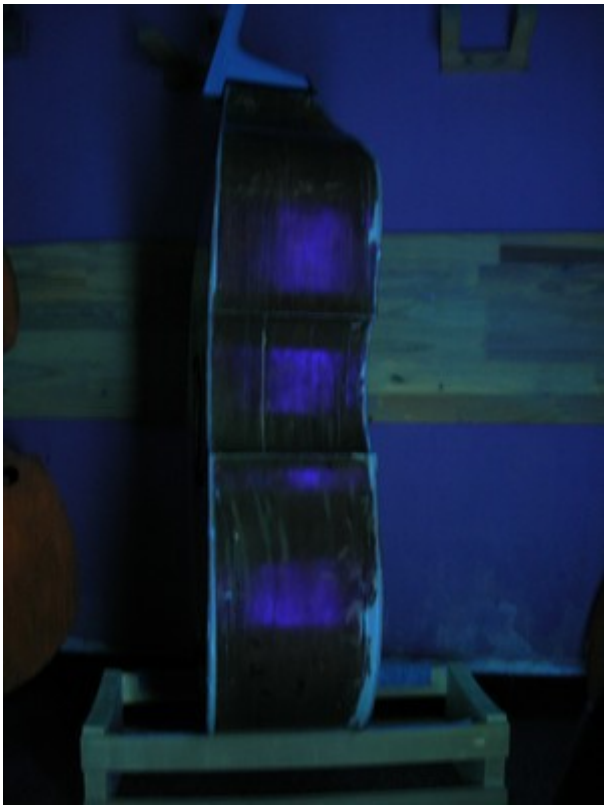
Since the ribs and block in this area are asymmetrical, as the treble side is shorter than the bass side, I make the columns to compensate this.

I finish the back button with an ebony crown.

Varnish

I unglue the fingerboard to have better access to the top's varnish.

I illuminate the surfaces with Wood's light.



By doing so, many touches of various materials can be seen, over an homogeneous layer of varnish with gray-brownish tones.

The most frequent touches consist of a light gray, semitransparent varnish, rising over scratches and superficial fillings.

Superficial fillings are more extended on the top, covering many cracks, reconstruction joints, and woodworm holes in the bass bar area.

A very evident touch with orange fluorescence covers the long crack under the treble f hole, where the varnish was in the past scraped away down to the wood to eliminate a gap, and then replaced. This was definitely done after the application of the homogeneous layer.

Other recent touches have either dark orange or black fluorescence.

The homogeneous layer is probably a covering varnish, present on the whole surface and maybe applied during a restoration (Degani 1927 ?)

Under this layer, with natural light, it is possible to see a second kind of coloured varnish, spread

thorough the whole surface as well, reconstructions included, (for example shims and edges of the back, reconstructions on the lower center and at the top's shoulders, reconstruction on the treble side of the volute), and for this the authenticity is at least unsure.

It is possible that the original varnish had been removed and replaced, or at least heavily retouched and covered with a darker and less transparent one, to mask repairs and damages.

There is no evidence of a varnish layer under the coloured one. On the other hand, if there is one, it would be very damaged and missing considering the conditions of the instrument.

For this reason I decide not to remove any of the layers, but only to clean the existing, retouching scratches, missing spots and reconstructions.

I start by cleaning the surfaces with a damp cloth, than with a mixture of tripoli powder and linseed oil.

I seal the new reconstructions with shellac.

Then retouch with raw sienna in shellac, then with aniline dyes in shellac.

I glue the fingerboard and finish the neck by sanding with fine paper wet with linseed oil.

I make the nut and glue it to the fingerboard with two drops of cyanoacrylate glue.

I varnish the neck and heel, first with just shellac, then with aniline coloured shellac.

I finish the varnish on the whole instrument by French polishing, with a thin alcohol varnish, made of shellac, rosin and propolis.

Set up

After a last finish of the fingerboard, I mount the tuning gears and the nut, make an ebony tailpiece of simple design, a soundpost and a french style bridge.

I use Pirastro Flexocore Orchestra strings.

Some measurements of this first set up, in millimetres, are:

String lenght 1038

Nut to upper edge of the front 435

(the ebony columns at the sides of the neck are considered part of the body)

Upper edge of the front to bridge line 572

Resting at the heel in D

(thumb at the heel opposite to the second finger, the first finger plays D on the first string)

Neck thickness including fingerboard 43 - 48

Fingerboard lenght 872

Fingerboard width at nut 42

Fingerboard widht at lower edge 91

Approximate curvature radius at fingerboard lower edge 69

Scoop under the G string 2,5

Scoop under the E string 3

Neck overstand on the top 36

A string angle at the bridge 139°

Height of the bridge 165

Height of the E string from the front at the bridge 158

Height of the G string from the front at the bridge 151

String heights at the fingerboard lower edge 6 7,5 9,5 10,5

String spacing at bridge (center to center) 27

String spacing at nut 11

Tailpiece lenght 356.