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New Designs and Modern Violins

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Albert Mell: From early childhood Guy Rabut has been very much involved with art and drawing, and this interest has been maintained throughout his career. After working in the Français shop under René Morel for a number of years, Guy opened his own shop on 28th Street in Manhattan, where he is concerned primarily with making new instruments. If you are in New York I'm sure he would be glad to see you. Since 1995 Guy has been working on what seems to be a new face of the violin. These are violins which are built acoustically according to traditional methods, but incorporate new design ideas to create an aesthetic interest. I give you Guy Rabut.

Guy Rabut: Good afternoon. I would like to thank Phil Kass and the VSA for inviting me to speak today. I attended my first VSA meeting in 1980 when it was at Hofstra University. I have been to several since, and have always enjoyed myself and learned a great deal.

For several years I have been pursuing traditional violin making. But always in the back of my mind I wanted to expand the aesthetic envelope and try some new designs and ideas within the parameters of violin making. As they evolved, the ideas went from non-traditional decorations on a traditional playing instrument to completely new forms and surface treatments on the acoustic skeleton of the traditional violin. For the purposes of the project you'll see today, I decided to keep the acoustic bodies as close to the tradition as I could and just concern myself with the aesthetic aspect of the instrument. This allowed me some flexibility with the body of the instrument and a little more with the sound holes - we'll call them sound holes today - and almost complete freedom with the scroll, which is, of course, purely sculptural. The remaining aspect is the surface decoration and any treatment one does with the varnish.

I would like to show you a few slides of my instrument to give you an idea of what it looks like; afterwards, you're welcome to play it and take a closer look. This is the front, the back, and the side (Figures 1-3). There were very few rules in this project and that's what appealed so much to me. The back, beneath the black varnish, is maple. The conventional spruce top is varnished a light amber color. Figure 4 gives you an idea of what the mold looks like. There are two end blocks in the normal fashion and five corner blocks.



Figure 1. Front view of Guy Rabut's violin.



Figure 2. Back view.



Figure 3. Side view.



Figure 4. Mold used for violin.

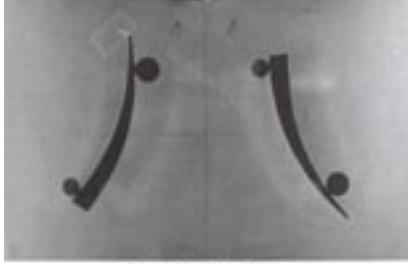


Figure 5. Schematic of interior acoustical box

The model I selected to use as a starting point was a later period Guarneri del Gesù, one of the slightly larger models. I selected this for the power and projection it would provide. I began by drawing a schematic of the interior acoustical box, creating the exterior design around that critical interior space. The goal was to respect the interior shape as much as possible, while creating a design that would be original only on the outside so that the sound would remain a traditional violin sound. The upper and

lower sections, starting from the end blocks around to the widest point of the two bouts, are virtually identical to the original Guarneri pattern. I took some liberties in between, with the main departure being the square cutaway you see on the lower right on the treble side. This cut hasn't proved to have a radical effect on the sound. As asymmetrical as it looks, the interior space is within a millimeter or so of the normal Guarneri model violin. The sound holes were designed by superimposing the four holes of the traditional sound hole layout on top of my drawing (Figure 5).

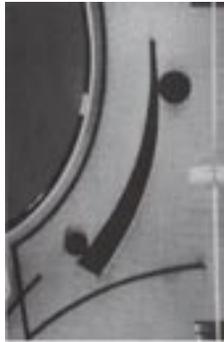


Figure 6. Left sound hole

The new design has the same interruption of grain and relates to the structure of the top in the traditional manner. My goal in using this approach to develop the new sound hole was to minimize the negative effect on the sound. Instead of putting two small holes above and two larger ones below, I reversed one pair. The surface area of the new sound hole is very close to the original. Once again, the idea was to change but not change, and that's a theme that will repeat throughout this project in order to keep the sound the same (Figures 6-7).



Figure 7. Right sound hole

The scroll was one of the most challenging parts and took me quite a bit of time and thought. I designed the scroll around the sketch of the peg hole layout. I started with four circles on a piece of paper and some rough measurements of a traditional scroll. Then I began to look for a design that would complement the body and still function as a scroll must, which is of course to hold the pegs (Figure 8). I began with sketches but then found it was extremely helpful to work up some of my ideas into three-dimensional models (Figures 9-10). In bass wood I very quickly created the shapes I was drawing, just to get the idea going. From the bass wood mockup it was much easier to create the final scroll. As with the body, I tried to create a design that would relate in some way to the traditional scroll, but at the same time make a new statement. The initial creation was a Cubist design, but I realized the violin was more about curves and round shapes. I will reserve that Cubist idea for another project down the road. I tried to keep the conception of the scroll traditional in that it had a circular head and a curved peg box. I was always concerned that the player would need to feel comfortable with it while tuning the instrument (Figures 11-14).



Figure 8. Preliminary sketches

We can now turn to the decoration of the instrument. Because of the non-

acoustical nature of this aspect, there were few limits as to what I could do. For the purfling, I decided to inlay one big bold black ebony line that departs from convention by crossing at some of the corners (see Figure 1). In conventional violin making we spend so much time making purfling corners which meet nicely. It was very liberating for me to allow the purfling lines to cross and run right up on to the top. I made sure I didn't inlay it too deeply where it comes up onto the top. Hidden in the purfling is my homage to Amati in the form of a long pointed corner silhouette, which is one of the historical references in my new design (see Figure 6).



Figure 8. Three-dimensional models for scroll side view.

I also wanted to incorporate my logo into the surface treatment to further personalize the visual impact. I took my logo, blew it up very large, and experimented with a variety of ways of using it on the back (Figure 15). After much experimentation I arrived at the final version, using a portion of the logo design off center on the back and wrapping around the side of the instrument onto the ribs (see Figure 2). Many of the ideas in the design of this violin came through developing my abstract logo design from the traditional form of the violin. The process of abstracting is one of simplification, of looking for the essential qualities of a design and eliminating those which are less fundamental. The opportunity to take two-dimensional design concepts and translate them into three-dimensional reality was an exciting challenge.

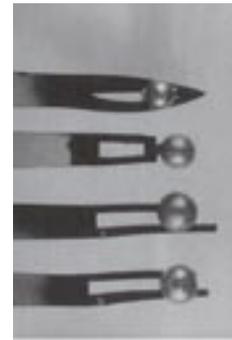


Figure 10. Three-dimensional models for scroll front view.

The black varnish on the back and sides was intended to contrast with the gold designs and to strengthen the bold visual impact of the violin. To achieve the black effect I first stained the wood with a commercial black stain and then applied my normal varnish on top, mixed with a black pigment. The black ground with the black varnish on top lends a certain depth to the finish even though it is fairly opaque. The top is varnished with an unpigmented version of the same varnish. For acoustical reasons, it was very important to me to use real violin varnish.

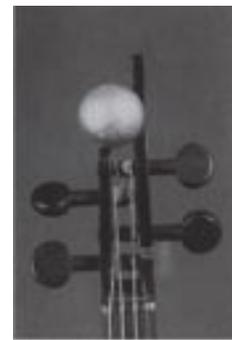


Figure 11. Front view scroll detail.

The bridge is based very much on a traditional design, but simplified to be consistent with my new idea. I started out with a free form sketch to develop the concept (Figure 16). I drew the final bridge design by superimposing a drawing of a normal French Aubert bridge with all the same waist measurements and leg and belly thicknesses. Everything that's critical about a bridge acoustically was kept the same. I first strung the violin up with a normal bridge and then fit my new one, and the sound was virtually indistinguishable. That also helped to confirm for me that I had retained all of the important elements of a bridge.

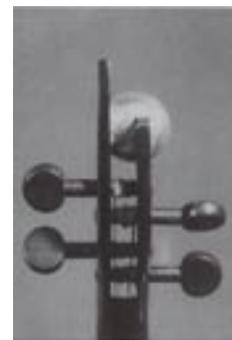


Figure 12. Back view scroll detail.

For the pegs I selected the simplest of many designs. The head of the peg is round with no collar connecting directly to the conical shaft. The offset design of the tail piece echoes the angular cut of the fingerboard. Few as-



Figure 13. Left view scroll detail.

pects of this violin are absolutely horizontal or symmetrical. All the design elements are in motion, with one angle working against the other.

The commercially available chin rest has been recut and resculpted to go with the motif of the round circle and the straight form, in order to keep in harmony with the rest of the instrument. I made a decision not to use any commercial fittings to preserve the integrity of the new design. In my efforts to depart from the tradition in the aesthetic aspects of the violin, I paid strict attention to the traditional arching, graduations, bass bar, and all the crucial measurements of the neck and fingerboard. I wanted the playability of the violin to be identical to that of a traditional instrument.



Figure 14. Right view scroll detail.

I thoroughly enjoyed building this first violin in the new form. It is a continuation of a long tradition of innovation beginning with some of the ornate inlaid instruments of the early Baroque through the 19th century with makers like Chanot, who made some wonderfully creative cornerless violins with backward bent scrolls. Several of my colleagues are also creating innovative and refreshing new instruments. I look forward to continuing this exploration with new expressions and ideas to expand our profession, which is so deeply rooted in tradition.

This is the end of my talk. I would be happy to answer any questions. [The violin is played]



Figure 15. Logo design. Note elements of traditional design. F-hole and scrolls.

Toby Appel: The only thing that is different for me is not feeling the edge of the scroll. Since I use my thumb to know where I am at all times, that would take some getting used to. It gets slightly thicker there but I don't have an edge or shape that I'm aware of. It's very bright and open sounding. It immediately sounds brighter than my fiddle.

Tom Croen: Did you put tension in the bass bar? Did you do anything with the saddle?

Mr. Rabut: The saddle is normal. It's a little different in that the peak of the edge is further out; when you blend that up onto the saddle, that ridge is a little farther out.

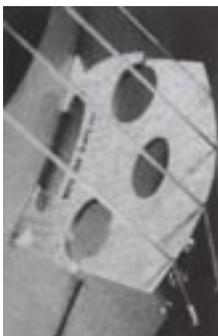


Figure 16. The bridge.

Charles Rufino: I've seen this violin in your shop over the time you were making it and I really enjoyed this project. I think what I admired most and what I was baffled by was your ability to create a new paradigm while being so traditional. Can you elaborate about the design process, especially in respect to the areas of the corners?

Mr. Rabut: The first design of this violin was a guitar-shaped violin, completely cornerless, which has a long history. There is the cornerless

Stradivari that Joshua Bell played for a while, various early Brescian violas, and the previously mentioned Chanot violin. People have made cornerless violins over the years. I started with a drawing of the inside of a normal violin. I began to add the corner shapes from the inside out, one at a time, experimenting with different possibilities until I arrived at the final design.

Hans Tausig: I have what may be a stupid question. You put purfling in on the top of the instrument there and it goes across the grain, does it not?

Mr. Rabut: The purfling is very shallow when it leaves the edge and goes toward the center.

Mr. Tausig: Were you concerned about how it would affect the vibration, putting purfling across the grain?

Mr. Rabut: The problem concerned me but the part that it crosses is cut the sound hole. So often on a repaired instrument there might be a long stud underneath the *f* hole on the inside, which is tremendously stiffer than this little piece of ebony purfling. The area on the outside of the *f* hole is a fairly inactive area. The areas that are active are not truly interrupted by purfling.

Question: You mentioned that the air space of your sound holes is similar to the traditional *f* holes. I wondered if you had measured that?

Mr. Rabut: I'm sure there is a way but I did not measure it precisely.

Question: You did that by visual sighting then?

Mr. Rabut: Yes. I began with the width of a normal *f* hole. Since the new design tapered from nothing at one end to wider than is customary, it is going to end up close to an average *f* hole. It's roughly the same length as an *f* hole, and the holes are positioned exactly like an *f* hole. I think the actual size can vary some without affecting the sound.

Don Leester: Have you had much demand from players to supply the instrument, and has it been played in professional orchestras?

Mr. Rabut: It has been played. The Turtle Island String Quartet had it for a while. It was played in the LA Philharmonic, and in my shop a variety of professionals have played it. Many people have been interested in it and have given a great deal of support to the concept.

Andrew Coolidge: Are you considering submitting the violin for next year's competition? If you do, I wish you would submit some nitroglycerin polls.

David Bell: How did you keep track of the internal volumes to make sure the air holes ended up in roughly the right place? Did you do it by calculation, or did you fill it with sand or water?

Mr. Rabut: On my original design the outline of the interior is very close to the original Guarneri, so I knew I was safe. The arching height on both top and back is a normal 16 mm; normal back,

normal thickness, normal arching, so it has to be normal. There was little need to calculate anything. I started out with something tried and true.

Kenneth Lawrence: What do we know about the original Guarneri, Amati, or Stradivari design? Do we know how they came up with their version of a basic model? Do we know anything about their reasoning making changes in the scrolls and *f* holes?

Mr. Rabut: I would say that the decorative aspects of the original instruments we all admire were simply made in the style of their time. A scroll is a typical Baroque ornament you will see on that period's furniture and musical instruments, as well as architecture. The few references I have retained to traditional violin design include an Amati corner profile, purfling, a semi-traditional *f* hole pattern and scroll references in the gold decoration on the back. In the art of this century, the violin motif has appeared frequently in the work of Picasso, Braque, and others associated with Cubism. I feel that this new design reflects the time in which it was made as much as the violins of the 17th and 18th centuries did.

Someone asked about the position of the sound post. There are no notches in the sound holes. I used pin pricks in the top under the bridge as a guide. It is a little harder to put in, but it goes in the normal place. I was not trying to reinvent the violin or make it differently sound. I simply wanted to make a violin that looked different and would be appropriate for modern music, rock and roll, or jazz. I wanted to make all the design aspects bold and powerful so that it would make a very strong statement even from a distance.

Question: It doesn't strike me as being very radical. It is still recognizably and fundamentally a traditional violin. Aren't you tempted to go still further?

Mr. Rabut: This is not the end; this is the beginning.