the creation of

the

natural

elite

archtop
guitar

by

tom
bills
the
creation
of
the
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tom bills
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I believe the art of guitar-making, like many other arts, is God’s gift given to few. You are either blessed with it or not. The builder’s personality, emotions, and values flow into the instrument and remain there forever.

Close attention to detail in the building process assures that as time passes the voice of the instrument will grow toward the desired direction, toward that searched sound that can be a companion for life: a player’s dream.

However, to make all this come true it takes a long time, it takes a lot of dedicated time for the creation of all the components of the instrument and the ability to make them play like in the dream.

After over 30 years of guitar playing and collecting, I found Tom in my search for the perfect archtop, a fine guitar maker in St. Louis. His attention to detail and the gift he is blessed with, make his archtops the most responsive guitars I have ever played, so far. That’s why after purchasing the first archtop named Natura, I decided to have him make me another one according to my specifications, and the result was truly breathtaking.

The acoustic sound is so gentle and the appointments so perfectly laid, that although I own more than 20 archtops, I end up picking this Natura (Elite, that is the correct name of the new jewel) most of the time.

And to avoid losing this great sound when using one of my vintage amplifiers, I requested a floating pickup made by the great Jason Lollar (of Lollar Pickups) another gifted person when it comes to pickups.

Therefore Tom, thank you for your creation and your efforts in making my dream come true. It took me a long time but I finally found what I was looking for.

Roberto Pagnotta
One of the most important parts of creating a great instrument, or any other work of art, is fighting and winning the battle to get quiet inside oneself. Finding and staying in a place of peace is essential to being able to listen. When we begin to listen, we move from the stress-filled, pressurized responsibility to come up with a solution to the peaceful and exciting adventure of being part of something larger than ourselves – simply following that leading we hear deep inside. When building a guitar, it's as if I know someone who already has the perfect instrument in His hands. He is the Master Builder; He cares about me, and wants me to understand its mysteries. These mysteries of the guitar are not hidden from me, but hidden for me to seek out and discover. If I can stay out of the way, keeping my own ego and other motives in check, and assume a posture in my heart of listening and seeking after the truth, I can simply ask Him, and it's His pleasure to share the answers with me.

This same leading, drew me to guitar making, guides me through the building of each guitar, and has helped me to choose and stay on the path of lutherie that was right for me. I realized that when I work with my simple hand tools I'm forced to trust in the gifts and talents that I have been given, instead of trusting in power tools or jigs. I also have to trust in my ability to stay in that place of quietness so I can hear that leading, and see what to do next on every guitar, because it's different every time. I must have the quiet to stay sensitive and to force myself into the sometimes uncomfortable situation of relying on my own hands and heart to do the work perfectly – now and every time in the future.
There is another core aspect to my methods and my guitars that, at first glance, may not seem very important to many, but, in my opinion, is crucial to making sure we don’t miss a vital aspect of hand crafting custom guitars. I have observed that musical notes are containers. When we create a note, we fill it either consciously or unconsciously and then release it in an instant. The listener hears the note, receiving its contents, whether good or bad. The guitar itself is the point of genesis where the idea and thought behind the note gets translated into this physical world, and thus, adds its own fingerprint during translation. Understanding the fact that musical notes and guitars themselves are containers, or vehicles to convey something, helps me stay conscious of what I’m filling those containers with as I’m creating the instrument.

It’s when my heart is filled with care for the customer that my best work is done. I just like people. I can relate, and I care about their situation. I want to make sure their experience with me is about more than just a possession, but maybe a turning point, at least a point in their life that was positive, and of course, resulted in an amazing, unique guitar they can treasure for a lifetime. Fortunately this approach is a two way street, and my life has been deeply impacted and blessed by many of my customers whom I consider some of my closest friends. With nearly every guitar I have made, there has been a wonderful connection for which I feel very grateful. Because I truly care about my customers, I want to make sure they have an instrument that embodies the highest level of excellence I am capable of producing. That care goes into every atom of the guitar.
Working with Roberto to design this guitar was a truly wonderful experience that I will never forget. Roberto and I seem to share very similar ideas and personal preferences as to what our dream archtop guitar should look and sound like. This provided us both with a great advantage to being able to communicate well and to easily collaborate on the design of a guitar that we can both be very proud of.

Up until this guitar, my top of the line archtop model was the Natura Deluxe. However, with the new aesthetic treatments and appointments that we chose for this guitar, I felt that I needed a brand new name to symbolize its ultra high level of quality and style. And so the Natura Elite was born.

Once Roberto and I decided on the heart and vision of the guitar, we were ready to begin the exhilarating and amazing journey of bringing something of true excellence from the intangible realm into the physical world – where we can hold it in our hands, see it with our eyes, and hear it with our ears.
selecting the woods

the natura elite archtop guitar
Selecting the right tone woods for a guitar is an intuitive process. I usually go for balance as I intentionally select pieces of wood that have opposite characteristics. I may choose a warm and woody sounding top paired with a back that is harder and more resonant – with more ring to it. This creates a dynamic sort of balance that gives complexity to the finished guitar’s tone and response. Factored into this equation are the final goals of my customer: what sound do they want, what look, what feel? There are no rules; it’s just something you get a sense of in your gut and just “know” when you have the right woods for a certain guitar.
After much discussion, Roberto and I settled on the target sound for this special guitar. It was to be a very dynamic, sensitive acoustic instrument, with a warm, thick, lyrical voice. I chose a warmer sounding top of aged, master grade Sitka Spruce from Alaska, which was light weight and stiff, with perfectly quartered grain. For the back I used a special piece of master grade Big Leaf Maple, with beautiful figuring, that I had been saving for many years. This wood had just the right balance of ring to its tone. Still, it was light weight and with a certain warmth to the notes – which was the key to getting this guitar right. I only have master grade tone woods in my private collection, so the intensity of the flamed Maple figure, grain orientation, stiffness to weight ratios, and other similar criteria are not something I have to worry about. I know for sure that these woods are some of the best tone woods on the planet. With that assurance of quality in mind, I can focus on the finer points of selecting the woods that will produce the warm, responsive acoustic tone we are aiming for.
Since we do not live in a perfect world, I may often choose a top, and after carving it for several days, discover a flaw. Even if it is minor and wouldn’t be considered a problem in most guitars, I will immediately go back to my wood supply to choose another and carve it. I will do this over and over until I get the perfect top and back for the guitar I’m working on. Oftentimes, I’ll carve several tops and backs for just one guitar, as I did on this guitar before I found what I considered to be the perfect set to accurately bring the vision to life.

The bindings and appointments on this guitar are all crafted from jet black ebony, and there’s quite a bit of Paua shell too – over 47 feet of it – which adds brightness to the guitar’s sound due to its high density. With this in mind, I’m keeping my top and back a little more on the warm side, tonally, by my wood choices and building treatment.
selecting the woods
After the wood has been selected, the first step is to very carefully study the wood in order to fully understand its nature and idiosyncrasies. One of the first things I note is the grain and the quarter cut of the top, or in other words, are the darker winter growth lines of the wood oriented perpendicular to the top plane of the guitar? Sometimes there will be a little growth line variation even in master grade tone wood. I spend extra time to correct this as I plane the bottom surface of the two pieces prior to jointing them. By altering the bottom I can usually shift the grain so that both pieces are perfectly quartered. I think even 1° of variation can make a difference in the guitar and enable me to have more liberty when graduating and sculpting the arch.

After I’m happy with the grain direction, I carefully joint the halves of the top and back plates. The center joint must be utterly perfect and should require no force at all to tightly close the joint. The clamps simply squeeze out the glue and compensate for any swelling of wood due to the glue’s water content. This insures that the joint will not separate in the future and that any unwanted tension being induced by the glue joint is avoided.

Now that the top is joined, more time is spent making adjustments to the bottom surface with my bench plane to ensure that it is flat and sanded smooth. It’s quiet and peaceful, and it’s my first real acquaintance with the top as a whole. I take note of the many idiosyncrasies the top might have and use this data on an intuitive, as well as intellectual level, to decide how to lay the guitar shape out on the blank when I cut it to its rough dimension.
After cutting the rough shape of the top, its side edges are marked at the final thickness that I want them to be, and then the carving begins. This is probably one of the most creative and fun parts of making an archtop guitar; it's also the most labor-intensive. However, during this phase I have to be very careful to make sure my body mechanics and technique are correct. Hand carving a guitar top can take a damaging toll on the human body over time if performed incorrectly.
While I'm carving the top, I'm really following that still small voice inside of me — that leading. It's a thousand decisions that can't be made with logic. It has to feel and look and sound right. The curve of the top is the bracing. How it arches, and where it arches, shapes the picture of where the top is stiff, or flexible, and to what degree. In addition to the top arch, the graduation, or “thickening,” of the top, as well as the actual tone bars inside the guitar, all work together as a whole to create the guitar’s voice.
the natura elite archtop guitar

CRAFTING the SIDES
The wood for the sides of the guitar is carefully selected, and every nuance of the grain orientation and figure is carefully considered. To work the wood, I like to use a hand plane, as much as possible, for its speed and accuracy, for my love of the craft, and because I really hate loud noises that are made by machines.

In addition to my hand planes, my scrapers are some of my other favorite tools. With the proper technique of drawing up a sharp edge, the scraper can remove wood many times faster than a machine sanding tool and leaves a glassy smooth surface. Of course, as with most hand tools, the scraper is simple and lets me quietly explore and discover the wood, in a tactile and aural way, as I’m working it to its final dimension.

Once I feel the sides begin to flex in the right way, and have a sense that they are ready, I bend them to shape using water and a bending iron. The bending iron is very hot, and when this heat is introduced to the wet wood sides, the water inside the wood cells turns to steam, heating the “glue” that holds the wood’s cells together (Lignin and Hemicellulose). When the wood reaches about 200°F Fahrenheit, the space between the cells can then be compressed and the wood will bend. After cooling and drying, the wood will retain its new shape. This is certainly a very delicate art and must be developed through years of experience. Working with highly-figured woods, such as the ones used on this guitar, can be extremely intense – the slightest mistake can ruin an irreplaceable piece of wood.
After the new shape has been formed, the neck block and tail block are selected, shaped, and glued in place. As with all the components of the guitar, these are chosen for weight, tone, and grain direction, and they must be crafted to perfection. Every piece of the guitar must be exact and intentional; close enough is NOT okay and will take away from the harmonious beauty of the design in measure, sight, and sound.
The linings inside the guitar are carefully bent and shaped using the same approach as the sides. They are solid, not kerfed, with the exception of the cutaway area. I feel this is an important element in the design of the guitar and my method is extremely labor intensive and time consuming. Each side brace is perfectly hand fit with a V joint into the linings. I create a very strong, light, and resonant frame for the top, back, and sides to anchor to, which enables them to resonate to their fullest potential.
When the top is close to what I consider a rough carved state, I am ready to cut the f holes. This is always a delicate and precise process which requires much calculation to ensure accurate placement. The holes must remain consistent in size and shape after adding the decorative bindings and purflings. The shape, placement, and appointments of the f holes are factored into the overall top structure for voicing the guitar.
On this guitar Roberto and I decided that the f holes should be bound entirely with Paua shell purfling and ebony binding. Accomplishing this was a real challenge at first; I don’t have access to the different lasers and computer controlled cutting machines (CNC) that many small shop and factory guitar builders have today. I had to find a way to do this with the highest level of perfection by hand, and thankfully, I did find a simple way to execute it with my basic hand tools. It’s a long, slow process taking several days, but the results are worth the effort; and knowing that it was done with skill and love adds a feeling to the guitar that is genuine and resonates in every note.

After the f holes are completed I can do a little more carving, “thicknessing,” and voicing while getting ready for the tone bars. All the while I’m listening. I’m hearing and absorbing with my ears and hands and heart the millions of tiny changes that are taking place. I’m staying open to the wood’s natural qualities, trying to bring out the best of its unique voice within the tonal envelope of this guitar’s ultimate vision.
The tone bars are hand-split and very carefully chosen. Listening to a potential tone bar by tapping it on a steel table is critical in determining which bar has the right characteristics tonally and structurally. I only use tone bars that were next to one another in the living tree, and even then the bars will always have different tap tones and qualities. Knowing how to compute these different traits, and add them into the system of this guitar, takes years of experience and the ability to get the mind out of the way to follow the heart.

Splitting the braces by hand into their rough dimension is vital because it forces the wood to break along its natural lines. This reveals any unevenness or oddities in the wood that would go undetected if the wood were simply cut to shape with a saw. Once the wood is split, I can work it down to its final shape with my hand plane, making small adjustments to optimize the grain direction and other critical characteristics.
The braces are fit to perfection within the arch of the curved top surface, which creates strong, reliable, acoustically conductive glue joints. A badly-fit brace will leave excess glue in the joint, resulting in an effect similar to a rubber gasket between the top and the tone bar, absorbing vibration and prevent us from ever hearing the full potential of the top wood.
The guitar top and braces are tap tuned and brought to a place where I can begin to hear the voice of the top taking shape – where I know, intuitively, I’ll be able to bring it to its final state, in which it can easily reach its fullest potential for visual beauty, tonal clarity, and power after the sound box is assembled and the bindings are installed.
Carving of the back is equally as important as the top and has a huge effect on the final sound of the guitar. I spend an equal amount of time on the back of the guitar as I do on the top. It must be light weight and carved in a way that will create a full and woody body for the notes. At this point, the most important thing on my mind is the relationship between the top and back. They interact through the pressurized air space inside the body of the guitar when the top vibrates under the influence of the strings as they are struck. The harmonious relationships of all components are intuitively, and intentionally, monitored and adjusted throughout every step of construction to make sure the final instrument is at peace with itself and that its voice is both responsive and powerful.
Sculpting the Back
Just for a moment, think back and try to remember a time when you heard a truly gifted vocalist at some point in your life. When they sang, it seemed so easy for them. They simply got out of the way and released their gift for others to enjoy. That's what I want my guitars to be like – no struggling, just an easy, harmonious, in tune, release. I do my best to work hard upfront while I construct the guitar, so the player doesn’t have to work to overcome any inharmonious relationships within the guitar as he plays. Reaching this harmonious and peaceful state of the guitar is what lets the player connect with the instrument and forget about it, so he can focus on creating music and communicating his message to the audience.
After the top and back are glued to the sides, I finally get to hear in real life what I have been hearing only in my mind up until now. With the body assembled, I can now begin to really focus on the relationship between the top and the back and how they compliment, and respond to one another.

The next thing I do is cut the channels into the body for the decorative elements and bindings. I think I mentioned this earlier, but I just don’t like loud noises. Human hearing is very complex, and when we are exposed to a loud noise, there is a period of time in which the ear will not convey an accurate sound image. So, I’m essentially blinded, aurally, for a time after the router is turned off – not good if you’re trying to sculpt the voice of a guitar by ear. I think that is one reason why I try to use as few power tools as I can, but in this case, the router is really the best tool for the job. I use it to carefully cut the perfectly-sized slots for the bindings and purflings to be inlayed around the edges of the guitar body.
the body
the body
Once the channels are roughed in by the router, I can begin to enjoy the quiet simplicity of using my chisels to clean and perfect the channels to receive the binding inlay. By this point I have already re-sawn, planed, and bent the bindings and purflings so that they will only require a minimal amount of final fitting to make a perfect, stress-free match to the binding channels.
the natura elite archtop guitar
Long before it’s needed, the ebony for the bindings and fittings is chosen and re-sawn from large blocks. I age the large blocks for years, but I feel it’s better to let them rest even longer after being cut to their final dimensions before using them on the guitar. I take great pains to use these large expensive blocks of ebony so that every piece on the guitar is cut from the same block, ensuring a perfect match. As always, the grain direction is carefully monitored and adjusted for maximum potential.

The bindings are dry fit, glued, and then taped in place while the glue dries to ensure a perfect final fit. Roberto’s guitar was unusually challenging because of the 47-plus feet of Paua shell inlaid into the purfling alongside the jet black ebony bindings. My design goal was to find a new, subtle type of treatment to the guitar, using a lot of Paua shell while managing to keep it understated and elegant in a way that would fit the archtop genre and avoid getting too much into the flat top, pearl-all-over-the-place look.
Now that the body is bound, it’s time to start working on the neck. Before hand, I planned with great care, how the neck angles and the top arch will interact for playability and desired tone. This is another critical area that must be thoughtfully considered in order to get the most out of the guitar and keep it focused on the target vision that I am aiming for.
The neck blank is made of 5 pieces of Maple laminated together for extra strength and durability over the lifespan of the guitar. The three main pieces are cut from a huge block of highly figured maple that’s been aging for many years. They undergo several unique treatments to ensure a lifetime of stability for the guitar and to enhance the tone as well. The black lines are actually thin maple veneers that were dyed black for a touch of elegance.
After laminating the neck pieces, and allowing them to cure for a period of time, I begin to shape the gluing surfaces of the fingerboard area and the headstock. When approaching this area of the guitar, a thorough understanding of wood behavior and adhesives is crucial to obtaining the best possible glue joint and, subsequently, the best possible sound and performance from the guitar.

The decorative face and back veneers are carefully selected for the headstock and worked to a state in which they are ready for gluing. Everything is precisely laid out and marked in a specific order on the headstock blank in order to start the final gluing of the veneers, as well as the cutting of the slots for the truss rod and double carbon fiber reinforcement bars that will be added.

After the carbon fiber bars are installed and the headstock veneers are glued in place, I'm free to start shaping the headstock and finessing the lines and curves to make sure they have the right feel and flow to them. I'm also keeping in mind the binding that will be added to the headstock face and preparing for that accordingly. My special “T3” method of drilling holes for the tuning machines, which minimizes the string energy loss, common to standard tuning machine holes, is also begun at this time.
Much like the body binding, I'm forced to use a ridiculously loud router to cut the channels of the binding to their rough shape. When that's done I can make a fresh cup of coffee and begin to perfect the channels with my hand tools in the quiet stillness of my workshop. The headstock bindings are installed and crafted in the same way as the body bindings.
THE FINGERBOARD
At this time, I start cutting the fret slots, and as always, I'm crunching and checking numbers to assure the width, thickness, taper, radius, neck angles, top arch, etc. are all perfectly in sync for a well planned and executed outcome. The fingerboard is a master grade, jet black, quarter cut piece of ebony with a glassy ring to it and great sustain.

The inlay was cut from rare Fossil Walrus Ivory that I obtained many years ago. The material was selected to be used for its subtle, natural beauty and color. The inlays of the falling leaf pattern are laid out and then cut by hand, one by one, from the fossilized ivory with a jeweler's saw.

Each leaf is laid on the fingerboard and arranged until it looks right to me. Just as no two leaves ever fall in the same pattern from a tree, my inlays are always unique and are done simply by eye with no pattern or template. Again, the heart – that leading – is the guide, and ensures the vibrancy and overall feel of the guitar stays unique and fresh. Every leaf is accurately marked and a precise channel is cut in the ebony for the individual leaves to fit into. The headstock logo is done in a similar fashion.

The fingerboard is then bound with ebony bindings and Paua shell purfling. The final fitting is done to the gluing surfaces of the fingerboard and neck, and a stainless steel double action truss rod is installed for strength – to ensure that the playability of the instrument will be perfect throughout the life of the guitar.
After the fingerboard is glued in place, I can now radius the playing surface with my curved sanding blocks. Which radius to use is a personal preference and different guitars call for different treatments. After radiusing, I draw the details of the leaf inlays with pencil, and then engrave the lines, followed by a filling of black epoxy. This gives the leaves their final detail and brings the design into focus.

I should add that, throughout the construction of the neck and its components, I am always listening to its tap tone. I choose and arrange the laminations in the neck based on their tone and grain pattern, as well as other factors. I make subtle adjustments to the neck throughout its construction to give it more, or less, of certain tonal attributes that will play into the overall outcome of the guitar’s sound.

It’s important for me to never stop thinking about the big picture of the guitar (the vision). Even if I am working on the smallest piece, I am still computing how it will fit into the whole. In this case, I need the neck to be part of the whole in measure and in tone.
For me the entire building process is the dynamic meeting and balancing of two different extremes. It’s macro and micro at the same time; it is science and art fused together into one. The underlying mathematical and geometrical framework of the design is the foundation for the artistic refinements that give body and substance to the constellations of numbers beneath the surface.

After the inlays are complete, the radius and shape of the fingerboard are finalized and prepared for fretting. The frets are chosen for desired width and height, and are then carefully cut to size and adjusted for installation. They are installed into the neck with a fret hammer and an arbor press for perfect seating and even contact with the radius of the playing surface of the fingerboard. The seating of the fret is another joint on the guitar, and each one must be solid, or it will result in the loss of string energy and tone.
NECK CARVING
Next, I grab my rasp to begin shaping the back of the neck. This is one of the most personal parts of the guitar for a player. I have to get this right or all the other work won’t really matter that much. All of my pre-planning and calculating pays off here because I can confidently shape the neck to a comfortable thickness and contour, knowing that the neck is sufficient in strength and stability, as well knowing it will geometrically mesh with the other critical angles of the guitar body’s architecture.

After several days of fussing over the neck shape and contour, I call it done for the time being and move back to the guitar body to begin the final tuning and scraping of the top and back before the neck is fit and glued in place. This is where the real voice of the guitar is being sculpted, and it’s extremely responsive to even the slightest adjustments I make on the top and back.

Another day or two of this fine tuning, and the neck is ready to fit. I carefully craft the dovetail joint with my chisels, and after much labor I reach the moment when I know the fit is just right. Then, after a few precautionary dry runs though the gluing procedure, I glue the neck in place – the body and neck become one.
I now spend nearly a week going over and over the guitar, listening, tapping, and singing inside the sound hole to take note of how it responds to my voice. Adjusting a little here and there, tweaking, finessing...I really take my time here.

During this phase I am very quiet and have no other sounds or music in the workshop. I have to be focused and sensitive to the subtle vibrations and interactions of the guitar’s various parts. I often sing different notes to the guitar and feel how the different parts are responding or not responding. Much of my listening is actually done with my hands as they lightly touch the wood’s surface and feel subtle vibrations in a different way than my ears can hear them. I don’t have a set formula. I just keep following that leading inside of me and seeking after that razor’s edge – the moment when everything lines up perfectly.
It’s a lot like running a marathon. Just about anyone can start a marathon race, but it takes a special kind of person to finish it, and an even more unique person to finish strong. That’s what has to be done here, finish strong. After what is sometimes months of work, I’m still willing to spend a whole day simply listening and tuning. And though at the end of the day it appears as if nothing was done to the guitar, it makes all the difference in the world when I tap the top and listen to the voice and how it has improved – how it’s become more rich, lyrical, and responsive. Sometimes just that last burst of effort and attention to detail can be the difference between good and great.

At this point I’m happy with the guitar, and the woodworking is completed; but I’m still not done. Actually, I have a long way to go. It’s time to prepare my finish!
The finish I use on all the guitars I make is a hand rubbed, French polished finish of shellac and oil. Technically, it’s a varnish because of the oil content, but is most commonly referred to simply as a French polish. My method is extremely labor intensive and I could write an entire book much longer and in-depth than this one on the subject; but for our purposes I’ll just touch on the basics.

There is a tiny bug, called a lac bug or beetle (Laccifer lacca), that is about the size of an apple seed. This bug infests trees indigenous to Thailand and India. They drink the sap of a tree and then secret a resinous shell over themselves in which they lay and incubate eggs. This shell is then harvested from the tree as “Sticklac,” and later refined to be what we know as shellac. It comes in several different forms: Seedlac (the most basic form, which still has a lot of bug parts and sticks in it that I filter out prior to use), Button Lac (which is Seedlac that has been heated and squeezed through cotton bags into button like drips), and Flake Lac (the most purified, typically through industrial methods, and is most commonly used by many French polishers). I use all types of shellac in order to achieve different shading effects and to match woods of slightly different colors.
shellac
Shellac is a very simple, raw organic material that possesses many mysterious qualities that cannot be matched by any manmade finishes. I look through my different shellacs and select which color and type I want for a particular guitar and dissolve it in pure alcohol. I then filter it and adjust the color to be what I have envisioned for the guitar. Slowly, I apply this finish, rubbing it with the addition of several oils to the guitar surface with a cotton pad in the same tradition that has been handed down for hundreds, or maybe even thousands, of years.

The resulting finish has an astonishing effect on the sound of the guitar. Usually people describe it as sounding open, free, uncompressed, woody, etc... The shellac has a unique way of letting the true voice of the wood come through in a dazzling way, in addition its visual richness and depth. Not surprisingly, comparing a properly French polished shellac finish to a Nitrocellulose finish is like comparing real diamonds to lab made ones. The natural way the shellac refracts the light is something very special, and even though it adds a month or more to the building time of my guitars, it's worth every ounce of effort when I behold the final product. I should add that a shellac varnish finish like the one I use is a bit more delicate than nitro, but its ease of repair and the added value in tone and beauty of the guitar is well worth a little extra care.

For this guitar I chose a darker colored seedlac from Thailand to subtly add some warmth to the light colored maple and spruce and to ease the contrast a bit between the dark ebony bindings and other woods. The guitar was still very new when the photos were taken for this book, but in about a year the maple and spruce will oxidize to a darker brown and will achieve the perfect color for our vision. This oxidation and aging is factored in when I am choosing my colors for the guitar.
The tailpiece, pick guard, and bridge of an archtop guitar are the last components to be installed; though, as with every aspect of the instrument, they must be considered from the start, as they are critical parts of the overall outcome of the guitars look and sound.

I pay close attention to the grain and cut of the ebony I use, as I do with just about every part of the guitar. I like to cut my bridge and other parts from the same piece of ebony, so I start with a big chunk. I get a perfect match this way, and have more control over the look and grain orientation. I like to make sure the wooden parts were next to one another in the living tree in order to keep things as consistent as I can, structurally and tonally.

When using custom string spacing and neck widths, as I did on this guitar, the tailpiece design has to be calculated to ensure that its dimensions and string holes are in proper alignment with the string spacing and other elements of the guitar’s design.
the natura elite archtop guitar
Lastly, some fret work. I use a very labor intensive method, which achieves a beautiful and even playing surface and requires many different specialized grades of abrasive cloths and papers – all done by hand. This is important to me, and is the last sprint at the end of the race. I have to save some energy for this, and really put my heart into it. I want my customer to be able to pick up the guitar for the first time and enjoy a comfortable, perfect playing experience.
the last steps
The electronics are installed, and the setup is finished. The guitar is left for a few days to settle, and then the final intonation and tweaks are made. These last tweaks are extremely important to getting the absolute best voice from the guitar. The intonation must be absolutely impeccable, and the delicate balance of the neck adjustments, bridge height, tailpiece angle, as well as other factors must be flawless. This takes great mental discipline because the customer is waiting for the guitar, and everything inside you wants to just get it done. That’s when I take a deep breath, remember that I’m approaching the finish line of the race, dig deep inside, remind myself what this is all about and who it’s all about, and spend as much time as it takes until that same small voice inside that has guided me this far tells me, “It’s done.”

After I cross that finish line in an exhausted bliss, I typically play the A section of Corcovado or some other jazz tune a few times, letting the instrument’s warm soothing voice wrap around me as I enjoy the fruit of my labors and dream of that thrilling moment when my customer will get to hold this guitar in his hands and play it for the first time.
bio

Tom Bills loves his craft. He passionately strives to push the envelope on every guitar, creating truly unique and original instruments through a harmonious collaboration of player and maker. Tom fell in love with the guitar when he saw and heard one for the first time at age 17. While studying jazz in college he made himself an archtop guitar because he was unable to afford one. After seeing Tom’s first guitar, many of the top players and collectors in St. Louis began asking him to build them one of their own. Bills began building guitars full time upon graduation from Webster University with a Bachelors of Music degree in Jazz Studies / Audio Technology in 1999. Though mostly self taught, Tom has been greatly helped and guided by such highly esteemed luthiers as Eugene Clark, Gila Eban, Boaz Elkyam, John Buscarino and others. Tom currently hand crafts a limited number of exquisite archtop, nylon string, and steel string guitars with extreme attention to detail and the highest standards of excellence. His guitars are sought after by top players and collectors alike all over the world and are internationally known for their workmanship, warm lyrical voice, playability, and responsive power.

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acknowledgments

I would like to especially thank Roberto Pagnotta for his continued support, encouragement, guidance, and friendship - all of which I deeply cherish. I am truly grateful and honored to have been able to create this guitar for him.

credits

written by tom bills

the natura elite archtop guitar