

# Guitar Buyer's Guide

Guitarsonline.com.au

Compiled by Pierre Herrero

As I guitar importer and distributor. I travel to Spain every year to buy guitars. I have tested and imported thousands of guitars and visited some of the most important luthiers in the world. I am often asked what makes a good guitar?

Here are some of the best answers I have been able to find.

If you would like to come to our showroom in Melbourne and select your guitar personally from the hundreds in stock, please give me a call. Otherwise we are more than happy to refer you to a dealer or we can delivery nationwide that special guitar.

Regards,

**Pierre Herrero**

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*"Selecting the best guitars  
worldwide to bring superb tone and pleasure"*

## What I aim to Cover

1. What is a classical Guitar
2. How to choose the best guitar for you- Judging Quality 5 things to look/listen for when trying/buying a new guitar
3. Shopping for a guitar 5 steps to buying a new guitar
4. Recommended Guitars
5. Why upgrade? –which level of instrument is suitable for me?
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9. Left Handed Guitar Construction
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## What is a Classical Guitar

1) It is an instrument for the interpretation of a wide repertoire of original works and transcriptions composed over a long period of five centuries. This repertoire covers the Renaissance, Baroque, then the romantic period, and has been considerably enriched during the modern era by a flowering of works of diverse origins (Spain, rest of Europe, South America and North America and Australia).

(2) It is built in inspired by principles established in the middle of the 19th century by Antonio de Torres. It is created by a craftsman **luthier**, working **by hand** in order to achieve a high level of quality and sound.



(3) It is an instrument for the **performance** of the player to his **public**. The concert must be clear and audible in a concert hall from the front to back seats. It must allow the interpreter to issue a clear sound and convey "beauty" and transmit with fidelity the subtle expressive intentions of the executed works.

## **How to choose the best guitar for your child?**

Classical guitars come in all shapes, sizes and price ranges, from beginner instruments to concert. The difference comes down to the durability, tone and set up of the guitar. These affect the enjoyment and progress of the player in making music. We have often noticed children struggling with a bad instrument and over the years we have evaluated most of the brands in Australia, Spain and China ranging from the unplayable to the excellent value for money as beginner instruments. Today we import eight Spanish Luthiers, represent 6 Australian Luthiers as well as selling 3 Chinese makers to service entry level players.

## **Choosing your Guitar- Why upgrade? 5 things to look/listen for when trying/buying a new guitar-what do I look for?**

### **On Judging Guitar Quality** by Ron Fernández

For teaching and playing purposes it is convenient to identify 5 bases for judging quality of a classical or flamenco guitar. These are: materials, design, craftsmanship, playability and tone. By considering the merits of a guitar in at least these 5 areas, we are more likely to achieve a balanced appreciation of it. In the absence of such a holistic and multifaceted view of quality, guitar buyers sometimes get obsessed with a single small aspect of a guitar and miss the overall picture. For example, a player may have heard that good guitars have a "bookmatched" face or that "the closer the grain the better the sound" (as was recently proclaimed in a Japanese guitar advertisement) and then they fixate on such trivia.

**Materials.** Guitars may be separated into broad quality categories according to the materials used in them. Most basically, there are all-plywood guitars (such as many cheap guitars from Asia)--these range from \$90 to \$400 dollars; guitars with solid wood "tops" (i.e. soundboards) and laminated woods for backs and sides (these range from \$250 to \$2000); and all-solid wood guitars (these start at about \$1700 or \$2700).

For a guitar maker, a solid wood face (top) costs from about \$10.00 in quantity to \$100.00 depending on such things as the stiffness, color, straightness, and closeness of grain. Stiffness across the grain is usually highly prized. Laminated backs and sides range from \$8 to \$30. Solid wood backs and sides cost from \$20 for mahogany (in quantity), \$50 to \$100 for Indian Rosewood, \$80 to \$150 for Spanish Cypress, and \$400 to \$800 for choice Brazilian Rosewood (Brazilian Rosewood is very expensive because there are international restrictions on its exportation from Brazil, CITEC.). As a dealer of fine classical guitars recently pointed out to me, this information on wood prices will probably mislead many consumers because they will not appreciate various hidden costs. More specifically, it is essential to realize that after a premium piece of wood has been selected it must be properly dried and aged--this can take years. The process of properly drying wood will add considerably to basic wood costs. Also, it must be realized that even in the most carefully selected wood there will be hidden defects which may make the wood unusable for premium instruments.

Woods must be properly cut and dried to 6 to 8 moisture content (Alhambra dries to 5 in especially built temperature and humidity controlled drying rooms). Most woods for production guitars are kiln dried (A kiln is a special oven which controls humidity as it heats and dries the wood. If there is too little humidity while heating the wood it may crack). It takes about one month to kiln dry a 1-inch thick piece of a medium density wood such as mahogany, and a longer time to dry denser woods such as rosewood or ebony. Some artisan or custom guitar makers prefer to use air-dried woods because they claim the wood has a better sound. It can take several years to dry hardwoods for guitar backs. (The woods used by Felix Manzanero in Madrid are all over 30 years old.). The importance of dried wood (either kiln-dried or air-dried) can not be understated. If the wood is not dried before the guitar is constructed, then the guitar will not be stable. When the wood finally dries the result could be a warped neck or the appearance of cracks in the body or face.

Each part of a guitar requires a wood with certain specific characteristics. Experience has proven the suitability of European Spruce, Engelmann Spruce, Red Cedar and California Redwood for faces. Brazilian, Indian or Cocobolo Rosewoods, Cypress, Maple, and certain Mahoganies for backs & sides. Spanish Cedar or Cuban mahogany for necks. And, ebony or rosewood for fingerboards.

Machine Heads vary greatly in quality and price. Simple nickel machines cost in the range of \$5 to \$15 dollars per pair. Good quality brass or alloy machine go for \$50 to \$80. Hand engraved, gold plated machines such as Fustero machines, which are made in Spain, cost \$250 to \$300.

**Design.** Design concerns aesthetic issues and functional features. Aesthetic issues involve the proportions and shape of the guitar. For example, for classical guitars built on modern Spanish designs there is a 3 to 4 ratio of upper to lower bout, 2 to 3 ratio of the waist to the lower bout, 1 to 1 ratio from the 12th fret up to the 12th fret down. Beautiful guitars are designed in accordance with such hidden geometric principles. Body contours, head designs and rosette patterns are all evidence of underlying principles of classical design. Many of these classical principles are rooted in Greco-Roman ideas of beauty and proportions.

Functional features concern such things as: fan bracing verses X-bracing, dovetail neck-body assembly as opposed to Spanish Foot integrated neck-body assembly, neck relief vs flat fingerboard, domed top verses flat top, symmetrical fan bracing versus asymmetrical bracing, etc.

**Craftsmanship.** Craftsmanship involves the fine execution of woodworking tasks and finishing operations. In recent years the physical appearance of factory guitars has improved tremendously. It can be argued that modern machinery allows a level of physical perfection which rivals the execution of the best master craftsmen. The benefit of a factory system is that it can produce high quality copies of a good design at a lower cost than custom production. For example, a wood carving machine can produce in minutes a dozen identical shaped necks which would take an hour each to make by hand. In contrast, one advantage of custom, low production guitar making is that a master luthier can modify his design (e.g., the thickness of the top or placement of the braces) in accordance with his evaluation of a specific piece of wood. In this way he can theoretically get the best sound out of his particular pieces of wood.

The quality of wood working is sometimes not apparent to the untrained. Of course, such things as miscuts, saw marks, or misaligned joints are easily observable. Other things such as a V-joint head-neck assembly or a mitered as opposed to a butt end purfling joint at the base of the guitar are not so obvious or easily appreciated.

Most modern guitars have catalyzed acrylic or urethane finishes. These are very durable and do not harm the sound if they are not too thick. Such finishes can be done in less than 5 days in a factory. Guitars made 25 to 50 years ago most often have nitrocellulose finishes. "Nitro" lacquer finishes take several weeks to do right because of drying time and sanding between coats. (William Tapia taught me the method Jose Ramirez III taught him of doing a lacquer finish.). The most time consuming finish is a French polished finish of spirit varnish (which is mostly shellac)--such a finish takes about 30 hours over 4 to 8 weeks to complete. Each of these finishes looks different and each slightly affects the quality of the sound. Which is "best" is a matter of opinion. In any case, a fine French polished finish is the most expensive finish.

**Playability.** How a guitar "feels" to play involves a variety of factors such as neck angle, presence /absence of neck relief, fret shape and smoothness, saddle height, and nut slot height.

While low action makes a guitar easy to play it does not help projection and sustain. Consequently, many concert performers with strong hands have their guitars set-up with actions which would be uncomfortable for a less experienced player. In contrast, while unamplified playing to a large audience may require high string action, low string action may be suitable for recording through a microphone or performing in intimate settings.

A set-up for good playing action minimally, involves adjusting the "bone" or saddle at the bridge so the gap between the bottom of the string and the top of the fret is about 4mm at the 12th fret for the 6th string and 3 or 3.2mm at the 12th fret for the 1st string for classical guitars. (Flamenco guitars are set about 3.2 to 3.5 for the 6th string and 2.7mm to 3.0 for the first string). Also, a check of the levelness of the frets by comparing each set of 3 frets, then, if necessary, recrown and polish them. In addition, contouring the ends of the frets by adding a second facet and then smoothing them.

**Tone.** Tone quality involves issues of projection, balance, sustain, clarity, etc. The ability to identify a good tone can take years to develop. The crucial sound test for a guitar is to listen across the room, not simply from behind the guitar. Is the entire sound projected? Are the trebles strong and clear? Are all parts balanced?

It is easy to get a big bass with a thin top. The trebles are the problem. Good tone demands enough wood density in the top--it cannot be too thin or too thick.

While many people can tell the difference between a good guitar and a bad one, there are few people who can tell the difference between a good guitar and a great one. The specialized knowledge required to evaluate quality and appraise value takes many years to obtain. Therefore, the 5 bases of quality mentioned above are only intended as initial topics to be considered.

Finally, it is important to point out that price is solely a matter of market demand not quality. Different people are attracted by different things. We know that quality by itself does not determine price because a guitar must have a label and a known maker to get the highest dollar. An unidentified guitar has limited market appeal. Also, average quality guitars may get very high prices because of a connection with a celebrity. Precise appraisal of a guitar is very difficult because contradictory evaluation standards can exist simultaneously. Nevertheless, in the long run quality and price are somewhat related through a maker's reputation and wide public recognition.

# Shopping for a Guitar

## 1. Setting Goals

What are your goals? Are you anticipating a serious hobby or majoring in music? If so, buy the best solid top guitar you can afford. An inexpensive guitar is a good choice if your goal is merely casual enjoyment for a semester or so (or if you're really stretched!). Do you need to be amplified for church or stage? If so, an acoustic-electric classical will afford maximize versatility. Before shopping, decide on a budget so the dealer can show you guitars in your price range.

## 2. Finding a Dealer

Go to a specialist classic guitar dealer. Besides carrying more models than a regular music store, they have real classic guitarists on staff, not rockers or non-players, to help you select the best guitar for your needs. Most importantly, the sales staff can play the guitars while you listen and pick the best sounding one. After the sale, they can make adjustments and repairs and recommend books and accessories. A good dealer will keep your best interests in mind as they want your repeat business and referrals. Check the list below for recommended dealers.

## 3. Trying Out a Guitar

Obviously, playability and sound differ between guitar models and brands. However, even individual instruments of the same make and model may differ considerably. Thus, the best way to select a guitar is to examine and play several models in your price range one after the other. It is helpful to bring an experienced friend to help you judge the construction, playing ease, intonation and sound quality (a good salesmen should be able to play for you as well). Learn from opinions that differ from yours. However, individual musicians value different things so you must be the ultimate judge of your guitar-to-be.

Each guitar is unique in feel due to variations in neck thickness and shape. If the neck is comfortable, the guitar will be easier to play. The string height above the fingerboard--the **action**--also influences playing ease. The action may vary according to personal taste and playing style. High action is difficult to play but allows buzz-free high volume playing. Low action is easy to play but buzzes during aggressive playing. A compromise between the two is best for most players. Fortunately, the action can be adjusted to suit your needs. If you are a steel-string player, remember that classical action is higher than steel-string action due to nylon's lower tension.

Listen carefully to the timbre (tone color) of the guitar. A balance between dark and bright is the most versatile. However, timbre preference is subject to taste and playing style. If your right hand technique is on the bright side, a dark sounding guitar will help balance your tone. If you play without nails, a brighter guitar will help bring out the upper frequencies.

Play single notes throughout the guitar's range and listen to how they sustain. Listen to the relationship of the bass notes to the treble. The bass should be firm with a long sustain. However,

the treble notes must be able to stand out in relation to the bass so you can project the melody. Finally, have someone play the instrument so you can judge the projection.

What's the difference in sound between a \$300 guitar and a \$3000 one? Budget guitars are less resonant and have a smaller tonal and dynamic range than expensive guitars.

#### **4. Workmanship**

Whether you are a beginning or advanced player, a quality guitar is crucial to your success and enjoyment. A fine instrument is easy to play, exudes workmanship, and sounds resonant and responsive. A quality instrument inspires you to practice and excel as a musician. Buy the best guitar you can afford and it will greatly enhance your learning and enjoyment.

Note the quality of workmanship in the seating and polish of the frets, the binding between the top and sides, and in the finish. However, in all fairness, you normally get what you pay for. Budget guitars cost less because cheap materials and lesser workmanship are used to trim costs. Budget guitars should be playable but will have numerous finish defects, unpolished frets, messy glue joints, unsanded bracing and poorly adjusted action (a good dealer will adjust the action if needed). Premium quality guitars will have a near perfect fit and finish of all components. Even the interior bracing will be neatly glued and sanded smooth!

Before purchasing a guitar, especially a used or budget instrument, confirm that the tuning heads turn smoothly and allow reasonable pitch control. Fortunately, cheap or broken turning heads are relatively easy and inexpensive to replace.

Soundboard and bridge checks are essential when buying used instruments. The strings exert 75 to 90 pounds of stress on the bridge and soundboard of a classic guitar. After a few years--especially in hot, humid climates--structural damage may occur. Check that the soundboard is not warped, and that the bridge is not lifting off.

#### **5. Price Ranges**

Professional classical guitarists play instruments handcrafted by individual makers, e.g., Fleta, Hauser. Depending on the maker's reputation, these guitars cost \$3,000 to \$20,000. Guitars made by a specialized group of builders in a small specialized workshop shop cost from \$2,500 to \$10,000 and will deliver many years of pleasurable playing.

Most beginners are looking for an inexpensive guitar. Buyer beware: most guitars retailing for under \$100 are disappointing junk. Don't throw your money away on a cheap toy, pay a little more and get a real guitar. Really cheap guitars have unacceptable compromises in design, materials and construction quality. Fortunately, there are many factory-made guitars costing from \$550 to \$1000 that make fine beginning instruments.

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## Recommended Classic Guitars

These models are excellent values in their respective price ranges. The Takamine, Hirade and Jasmine guitars carry lifetime warranties. The remainder carry one-year warranties.

### **Budget Quality • \$100-299**

Aria 20

Takamine 30

### **Good Quality • \$300-599**

Alhambra 1C

Camps Son Satin

### **High Quality • \$450-899**

Alhambra 2C

Prudencio Saez 2A

Prudencio Saez 4A

Azahar Mod 102

Camps Sinfonia

### **Premium Quality • \$900-1600**

Prudencio Saez 16

Prudencio Saez 31

Camps M6C

Alhambra 4P

Alhambra 7C

Prudencio Saez G9

\*Most popular classic; also available in an acoustic-electric version

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## **Recommended Strings**

D'Addario Pro Arté, EJ45 Normal or EJ46 Hard

D'Addario Pro Arté Composite, EJ45C Normal or EJ46C Hard

Luthier Blues

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## **Where to Buy in Melbourne**

Please see the updated dealer listing on [www.guitarsonline.com.au](http://www.guitarsonline.com.au) or contact us on 03 9395 5055

## Why Upgrade? Which instrument should a Classical Guitar Student Chose?

A guitar is an investment as both a work of art and in getting the most out the time spent practicing. Because is hand built and the cost of the tone woods is such a large part of the final cost the old maxim “you get what you pay for applies”. I was asked by a man who had become a classical guitar student as an adult what his choice of guitar should be.

Obviously it is difficult to generalise - people have different musical experience and talents as well as greatly differing budgets. As I did not know him well, I wanted to provide an answer that would suit a range of different possible circumstances.

"The fact is it is best to play an instrument that is a bit too good for you rather than one that is "just right". The better instrument stretches you, rewards you, and inspires you. But even if you have an unlimited budget, I still wouldn't suggest buying a \$7,500 concert instrument in your first 3 years.

"I am not absolutely clear from your email how many years you have been playing so I will make a number of suggestions depending on the number of years and your budget -

Budget	Years playing				3 or more
	up to 1	Up to 2	Up to 3		
\$700	<a href="#">Alhambra 1 or 2C</a>	<a href="#">Alhambra 2C</a>			There is now a very wide choice of instruments available at a very wide range of prices
\$1.100	<a href="#">Alhambra 4P</a>	<a href="#">Alhambra 4P</a>	<a href="#">Alhambra 4P</a>		
\$1500	<a href="#">Alhambra 5P</a>	<a href="#">Alhambra 5P</a>	<a href="#">Alhambra 5P</a>		
	Alhambra 7C	Alhambra 7C			
	<a href="#">Prudencio Saez Model G-9</a>	<a href="#">Prudencio Saez Model G-9</a>			
\$2,000			<a href="#">Prudencio Saez Model 28 Rosewood</a>		
\$2700		<a href="#">Alhambra 7P</a>	<a href="#">Alhambra 7P</a>		
\$3500 and above			<a href="#">Alhambra 10P</a> Alhambra Professional		

"The better you play, the greater your choice of instruments. A good player with 3 or more years experience but with a limited budget will get great pleasure from a 7C for example. However if

their budget will stretch there are advanced/intermediate student instruments that would suit going on up through the \$2500 mark. And, the fact is, many adult students like to treat themselves to a really good quality semi-performance instrument and pay much more than this. However much money you have I still don't think that you will really get the most out of the more expensive instruments until you have had at least 3 years playing under your belt."

**For those looking for something really special we currently have over 30 Spanish and Australian hand made Luthier concert guitars in stock**

## **Taking Care of Your Guitar**

Guitars normally require very little maintenance. However, a little care in handling and storage will protect your investment for many years to come.

- Never expose your guitar to high heat and humidity. For example, don't leave your guitar in a hot car or in direct sunlight. Typical heat damage consists of warped soundboards and unglued (detached) bridges.
- Never lean the guitar on furniture or the wall. The guitar is unstable (the lower bout is round) and can easily fall and be damaged. Always store your guitar in a case or on a guitar stand.
- Wash your hands before playing. Dirt and oil will clog and corrode the strings and diminish considerably the sound and life of your strings.
- Handle the guitar only by the neck. Squeezing the top and body will damage the delicate soundboard bracing.
- Wipe your guitar off with a soft cotton or microfiber cloth after playing. Clean and polish your guitar occasionally with a light polish such as Martin Guitar Polish. Avoid heavy paste waxes as they eventually build up into a thick, vibration muffling coating.

## **When To Change Your Strings**

Track athletes don't run the 1000 meter with poorly designed or worn shoes. Why? Lousy shoes won't allow them to run their best. Although he or she may be in exquisite physical condition and boast the finest training, bad shoes will shoot them down in a heartbeat. To guitarists, strings are like the shoes of a track athlete. The finest instrument and player will sound like crap with cheap or worn strings. To get the most out of your instrument and your music, use quality strings and change them regularly.

"When should I change my strings?" is a question I hear constantly. Fortunately, there's a simple answer: change them when they sound bad. Fret and finger abrasion, sweat, oil, and dirt eventually cause a reduction in upper harmonics (treble response) and volume. In other words, the strings sound dead. At this point you'll see fret wear--black marks--on the strings and have difficulty tuning. If they're really terrible, the basses will be corroded and the trebles scratched (worn rough where you pluck

Guitarists that play all day wear out their strings in a week or less. Players with dirty and/or sweaty hands can kill the tone of fresh strings in a matter of minutes. However, the typical hobbyist that washes their hands before practice and plays an hour a day can expect a month of decent tone out of standard strings. Of course, you can leave them on for many months if you don't mind lifeless tone. *D'Addario Pro Arté Composites, Extended Play Coated*, last two or three times longer than standard strings.

## Traditional String Changing Method

Purchase a set of classical guitar strings, i.e., trebles of clear nylon and basses of nylon thread with metal wrap. Never use steel strings on a classical guitar or you'll severely damage your guitar. I recommend *D'Addario Pro Arté Composites, the Extended Play Coated* type (\$17-\$20). If you're on a tight budget, downgrade to the plain (non coated) *D'Addario Pro Arté Composites* (\$10-\$15). Both strings sound excellent, but the coating on the Extended Play Coated help keep finger sweat and goo from killing your strings. Both Extended Play versions come up to pitch faster and stretch less than nylon and gut.

### D'Addario Pro Arté Strings •



**String Winder** • This device is used to turn the tuning pegs and greatly speeds up string changes.

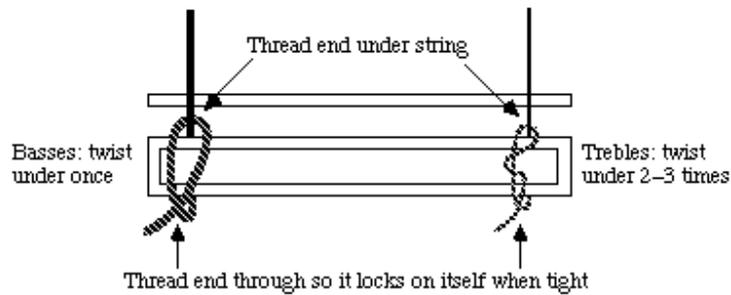


### Removing Strings

Use a string winder to unwind the strings. It's faster than winding by hand. Turn the winder counterclockwise to loosen the string and clockwise to tighten the string. Don't remove all the strings at once. Instead, remove and install one string at a time. Removing all the strings traumatizes the neck and sound board. How? The strings exert a total force of 75 to 90 pounds of tension on the sound board and neck. If you release all the tension, the wood flexes. After reinstalling the strings it takes several hours for the sound board to flex back to optimal shape. Thus, you'll notice a loss of volume and tone until the sound board returns to normal.

### Attaching The String To The Bridge

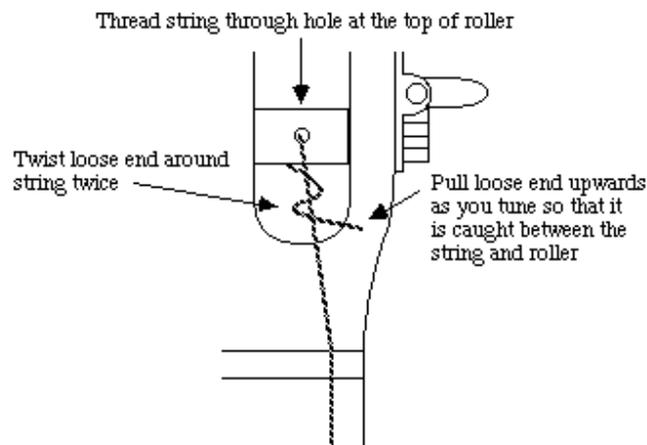
Once you have removed a string, attach the string to the bridge as illustrated in the diagram:



Thread the string through the bridge hole and loop it around itself. Insert the string under itself at the rear of the bridge (where the back holes are) so that it locks on itself when you tighten the string. Once threaded and looped, hold the string in place with your finger and take up the slack by pulling smartly on the string (pull towards the head stock).

### Attaching The String To The Tuning Heads

After the bridge tie is secure, attach the opposite end of the string to the tuning head roller as illustrated in the diagram:



Turn the tuning key until the string hole is centered in the roller (see diagram above). Thread the string through the hole on the top of the roller. Pull the end out the bottom and twist it around the string: twist once for basses and two or three times for trebles. Pull the loose end of the string upwards as you tighten the string (turn the tuning key clockwise) so the string is caught between the string and the roller, i.e., runs over itself. This procedure insures the string won't slip out when under tension. Finally, use the string winder to bring the string up to pitch by cranking clockwise. Keep a watchful eye on the bridge tie. If it begins to slip, slack the string and tie it again. Repeat the above procedure with the remaining five strings.

### Alternative Bridge Tie

This image illustrates my preferred method of securing the string to the bridge:



I tie a knot to secure the string to the bridge. The only requirement is that the knot is large enough not to pull through at pitch. You can be creative and tie little hearts and bows if you wish. The advantages of this method are fourfold:

- The string is better secured than the traditional tie and, thus, is less likely to slip.
- String tension is focused on the end of the bridge resulting in simpler string geometry.
- There is less wear to the bridge top and holes.
- Provided you tie a nice knot, it's more attractive than the traditional tie.

To secure the bottom four strings, I begin with a half hitch knot. Keeping the knot loose, I thread the end through again, leaving enough slack to form a loop. Finally, I pull the string towards the head stock to tighten the knot. For the first and second strings, I loop through twice to make the knot big enough not to pull through under tension.

### **Beads as String Gaskets**

Some guitarists use glass beads as gaskets and claim they enhance treble response. In the image below I used jade beads purchased in Honolulu's Chinatown. However, I've also had good results with plastic and glass beads. Try to buy beads with the smallest hole diameter the string will pass through. Of course, you must make sure the knot is large enough lest the string slip through.



### **Making Your Strings Last**

Many students have commented that their instrument sounds great with new strings but quickly loses its sparkle. There are four main factors that influence string life: string quality, personal hygiene, technique and frequency of playing. String quality and personal hygiene are the easiest factors to control. *D'Addario Pro Arté Composites, Extended Play Coated*, last two or three times longer than standard strings. They're worth paying twice as much to preserve tonal response and avoid frequent string changes. Washing your hands before playing also has a major impact on string life. Dirty and sweaty mitts can kill fresh strings in mere minutes! Also, it is helpful to wipe your strings down with a micro fiber cloth. Micro fiber picks up sweat and oil better than any other fabric.

Poor technique, e.g., heavy finger pressure, causes rapid string and fret wear. I've seen the metal wrap tear off a D string after a couple hours of twanging by a heavy fingered student. A light touch--the least amount of pressure to hold the string down--is not only good for your strings and frets, but is better for your body and music. If you'd like to know more about proper left hand pressure, click [here](#).

Finally, the more you play, the faster you wear out your strings. That's a fact of life. Live with it. However, the enjoyment of beautiful tone and wide dynamic response is worth a string change every month or even every week.

Good luck with your next string change! 1/22/2003 • Revised 6/28/2005

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### **III) The Traditional Spanish Method of Classical Guitar Construction**

What is considered traditional Spanish guitar construction is a complex topic. I have summarized 4 of its most important elements.

1. The Spanish Method is characterized by an integrated neck-body construction. Such construction displays an extension of the neck--called the "foot"--inside the soundbox which is glued to the interior back of the guitar. This design makes the neck-body connection very strong and ensures a powerful sound. The presence of a Spanish "foot" shows that the guitar was built by the Spanish Method not by the dovetail method which simply adds the neck to a completely assembled soundbox.



**Here is a roughly cut neck. The finger indicates the portion of the neck called the "Spanish Foot".**



**Here we see the "Spanish Foot" inside of an assembled guitar.**

2. The Spanish Method uses fan bracing as opposed to X-bracing or ladder bracing. Steel string guitars generally use an X-bracing to withstand the tension of the steel string which are 2-1/2 to 3 times higher tension than the nylon strings used on a classical guitar. Ladder bracing is currently used on cheap Asia plywood guitars. In the early 19th century ladder bracing was used on the guitars of the day which were considerably smaller in size.



**This is a photo of a flamenco soundboard. It has a very typical 5-strut face bracing. My finger is touching the "contra puente" which is a thin, wide brace which stiffens the area below the bridge.**

3. The Spanish Method uses a domed soundboard (especially the lower bout). You can see the slight dome across the lower bout of the guitar by setting the edge of a straight piece of paper or cardboard on the soundboard. Without such a domed top the guitar will not be as loud or project as strongly.



**The dome in this top is evidenced when you put a ruler across the lower bout.**

4. The Spanish method uses a "plantilla" (which is simply a template of one-half of the guitar face) to establish the outline of the soundboard. Then, the braces are glued onto the soundboard while it is held in a scooped-out work board called a solera. By gluing the braces to the soundboard while in the solera the luthier is able to construct a domed soundboard. Finally, the face, sides, neck and back are put together on an assembly board called a **molde** or patron.



**Here is a hard to see clear plastic plantilla (1/2 template of a soundboard).**



**This is a "solera" which is used to assemble the soundboard. The large lower area is slightly scooped out so a dome can be built into the soundboard.**



**Here we see how deep the scooped-out section is of the solera. The ruler shows that the solera gradually deepens to about 3mm.**

### **Classical vs. Flamenco Guitar Construction**

Most books say that a flamenco guitar is made of cypress, has wooden pegs and a tap plate on the face. This is too simplistic.

Compared to modern classical guitars, modern flamenco guitars generally have: shallower bodies, no neck relief (and sometimes negative neck relief before string tension), a thinner top, little or no doming of the top, a neck with more inclination, thinner bracing (and/or less bracing), a lower saddle, lower frets, and lower string height at the bridge and 12th fret. These features contribute to a less sustaining, more percussive sound with some string "buzz", and an "easy" action.

Nearly all modern classical and flamenco guitars are derived directly from Antonio Torres' work a century ago in southern Spain (See Jose Romanillos' wonderful book, Antonio de Torres: GuitarMaker--His Life and Work, 1997). His guitars were distinguished from earlier guitars by a combination of features including: fan bracing (various types, including the "Bouche" bracing), 650mm scale length, refined not ostentatious ornamentation, domed soundboard, deeper and wider body, and modern proportions (e.g., 3 to 4 ratio of upper to lower bout).

In the last century, guitarmakers in Spain did not distinguish between classical and flamenco guitars. In crudest terms, there were simply cheap guitars and fine guitars. In the late 19th century the opposing concepts of Sevillanas and Concierto were used to convey a distinction between commonplace and expensive guitars.

In his article, "Cultural Origins of the Modern Guitar," (Soundboard, Fall 1997) Richard Bruné has argued that the modern flamenco guitar is closer to the 19th century guitar developed by Torres than modern 20th century classical guitars. In his very interesting and persuasive article he turns conventional thinking on its head and suggests that the flamenco guitar is not a specialized version of the classical guitar but vice versa, that the modern classical guitar is derived from an earlier flamenco-type instrument. Read this article it is very good.

Today, flamenco guitars are being made of cypress, rosewood ("black flamencos"), maple, sycamore or mukali. While classical guitars are traditionally made of rosewood, we find that both cypress and maple have been used for guitars intended for classical players made by great makers (e.g. Miguel Rodriguez of Cordoba and Antonio Torres). So, while flamenco guitars have generally been associated with light golden colored woods the real differences between modern flamencos and classicals are in design and construction.

Two additional remarks. In recent years, world class performers have embraced "flamencas negras", so-called "black flamencos" which are made of rosewood. Such guitars usually have more sustain than cypress guitars because the rosewood is stiffer and denser. The other point is that many players of jazz and popular music have discovered that flamenco guitars are very suited to their styles because of their fast action and percussive quality

### "Handmade" vs "Factory made"

Here are a few points which deal with the issue of "what is a handmade guitar".

In Spain, the most relevant distinction is between **guitarras de artesanía** (artisan guitars or **guitarras de fábrica** (factory guitars), not what is a "handmade" guitar.

Typically, we find that artisan guitars or master luthier guitars are signed and dated. In contrast, "estudio", production (factory) and apprentice guitars are not normally signed and dated.

Traditionally all aspects of guitar production were governed by the vihuela guilds (from 12th to the early 19th century). These old guilds had the force of law behind them. The guilds determined who could make instruments, what they were sold for, the acceptable quality standards, etc. Today, no such guilds exist, only voluntary luthiers' associations and workers' unions.

Currently guitar production in Spain is organized in 3 basic ways:

**Independent Artisan Workshops.** In such shops, the master artisan has full control over design, manufacture of all parts and assembly. Each instrument is an original--it is a one of a kind. Thicknesses of soundboard, types and number of bracings are determined by the artisan according to his evaluation of the properties of the particular pieces of wood. Guitar parts are made in small quantities. The master works alone or with an apprentice, offspring or sometimes a partner. There is little division of labor compared with the factory method. Woods are air-dried for many years. Production is 12 to 30 guitars a year. Examples of world class makers in Spain are Felix Manzanero, Archangel Fernandez, Marcelino Barbero, Miguel Rodriguez of Cordoba, Manuel Reyes of Cordoba, Ignacio Fleta, Antonio Marin Montero, and many others.

**Factory System.** This produces a committee guitar. These can be of high quality. This system produces numerous copies from the same guitar plan. Many people make the parts and many people assemble the parts. Woods are air-dried and kiln dried. The bracings and thicknesses of parts are standardized and are not altered to respond to the individual characteristics of the specific pieces of wood.

**Journeyman System.** This is a hybrid of the artisan and factory methods. In this system parts are manufactured by a number of people but a single experienced craftsman does all of the crucial assembly operations and modifies the thicknesses of parts according to his intuition. Finishing and fretting are typically done by a number of people in the factory.

Nowadays around Valencia, Spain aspects of the factory and journeyman system are combined in what are called **artisan factories**. In such situations certain guitar models are made by committees in the standard "factory" system while other more expensive, all-solid models are made by skilled workers who do the crucial assembly supported by factory workers who make the parts. Alhambra, Ramirez and Vicente Sanchis Guitars are made in artisan factories.

## Classical construction of a concert guitar (In detail)

### Fundamental principles

Compared to the violin or piano the guitar in a concert hall that is limited both in sound that power range, the guitar must compensate its intrinsic volume by a strong capacity of expression and the evocative power of his color palette. Good separation of registries, a precise "sympathetic" vibration and harmonic wealth are therefore essential elements to endow musical phrasing with clarity while evoking the lyrical extrapolation and stir up the imagination. The strongest instruments of the best luthiers deliver clear and homogeneous, rich and evocative sound design and talk about how beautiful and convincing in our sense.

A large number of factors interplay in the formation of the "character" of an instrument and the complex "system" and by the interaction of the different components of a classical guitar.

No guitar is able to present all the qualities that a player could possibly desire. By contrast, it is also interesting to see how instruments manufactured of different wood species by the same luthier and apparently different principles of construction sound in a similar way and convey the personality of their luthier, revealing the existence of paths taken implied and the preference for one type of sound over another. Therefore the task in evaluating guitars is about finding a maker whose "vision" and resulting instrument is closest to the player's needs and own style. At advanced level a good guitar will reward practice and hard work and a partnership will develop as the interpreter comes to know and understand how to get the best out of the instrument.

The study of the achievements of the 6 generations of luthiers of the Spanish tradition founded by Antonio Torres proves that beyond the mystique that many luthiers have tended to maintain, however some basic principles govern the acoustic qualities of the instrument.

The modern guitar in its current form and its principles of construction was set by Antonio de Torres Jurado. Whose body of work consists of little more than 300 instruments (less than 100 have reached us) has quickly established the basic elements that persist until today:

- Increasing the area of the soundboard and thinning techniques
- Fan bracing arranged for strengthening the top featuring crossbars
- extension of the neck and assembling with Spanish heel
- elongation of the diapason approximately 65 cm
- Bridge form to nut on which the strings are knotted
- Development of principles of Assembly of various items
- abandonment of the elements of decoration on the vibrating surface
- construction and Assembly method

An attempt to understand intuitively, it is important first to note that the harmonic top (with its internal structure) and characterized by its coefficients of longitudinal and transverse flexibility, set as a membrane on the rigid body of the instrument is to recover through the bridge maximum vibration energy released by the strings, to amplify it without warping. The coupling of the top with the body of the instrument and "breathing" through the opening, alters and accentuates the harmonic response of the system strings/bridge/top (especially at the bottom of the spectrum). In addition, the rigidity of the Assembly channel-caisse is used to avoid too high energy loss through the neck and the "drain" of the sound by the end of the instrument. Without forgetting that the instrument is in need of the surrounding air to deliver sound to the listener. We have therefore have 4 essential couplings:

- Coupling of strings and the bridge;
- Coupling of the bridge and the top;
- Coupling of the top and the breakthrough through the opening;
- Coupling device and the space environment.

The only model relatively complete (although very simplified) work devoted to the study of this complex system 2002 – is relatively recent date (Grégoire Dervaux thesis), and still does not account for many fundamental factors such as the internal structure, the quality of the wood, the secondary vibrations to other components of the Fund, different forms and dimensions of the instrument etc. It is therefore excluded account exhaustively and draw conclusions from the "scientific" of an instrument review, which explains and justifies fully the empirical approach and experimentation by small not luthiers.

After a decade of crisis, which will end with by the loss of the monopoly exerted the Ramirez on this industry and the shortness of its model. L "impressive increase in volumes produced (up to 1000 instruments in concert a year) had resulted in a loss of control over quality and resulted in the degradation of its brand image."

We are witnessing yet since the end of the 1980s to a very significant revival marked as much by innovation (Gilbert, Humphrey, Smallman, Dammann), return to the sources (Rubio, Romanillos, Elliott) and the concécration of a few rare "unclassifiable" (Friederich, Ruck).

In any case, the offer became everything simply bloated (see section Luthiers) and there are now hundreds of worthy of the name luthiers. Indeed, no exhaustive list identifying them does exist to this day, I proposed to my broad knowledge in the matter.

Enlargement of the offer is obvious effect to generate a strong need for differentiation among luthiers. The more creative and enterprising invent a new system that is designed to revolutionize

the reference model (established by Torres), and then develop their image in enrolling or more simply partnering with guitarists very prominent in the idea of leaving a name to their posterity or to school.

It is far too early to guess which of these innovations will pass to the next generation, the most promising channels at this stage appear to me as follows:

- Bridge hollowed (Gilbert)
- raised fretboard (Humphrey)
- thinned down harmonic top supported by a dense barrage (Smallman)
- Lattice trellis (Smallman, Humphrey, Fischer,...)
- composite materials (Smallmann, Dammann)
- arched bottom (Smallman, Pappalardo)
- Sound Ports on sides (Ruck, Hill, Thurman)

Replacement capricious material what is outright wood did not at this stage to obtain the appropriate sound qualities. Also, in view of the diversity of the innovations proposed by the community of luthiers, is it difficult to say that the paradigm shift that some have in turn announced with so much conviction will really take place. However, innovations "of the day" bring each interesting improvements to such and such aspect of the instrument and allow their creators to express themselves with originality and thus us Marvel!

And yet some luthiers intuitive and exceptional still continue to perpetuate the tradition, appropriating and reinterpreting infinite model Torres apparently timeless, reviewed, corrected and improved.

In conclusion, at the dawn of the twenty-first century, it can be said that absent formal evidence to the contrary, a man of genius succeeded 150 years ago in discovering almost instantly and without resistance, the magic formula of this beautiful instrument. This find represents a sum of details which put end to end are an almost perfect balance.

A new universal revolution of this instrument ever take place?

Classic guitar: basic elements of construction

The parameters that we are going to indicate are important, none alone can offset the lack of other.

(1) Mechanical capabilities of the soundboard equipped with its Bracing (coefficients of

flexibility, performance, timeliness of transient response, depreciation).

(2) Choice of materials and optimal adjustment of the top and its bracing to optimize its response (regularity of the response curve, dynamic, harmonic wealth, sensitivity).

(3) Configuration and location of the bridge to ensure better transmission of vibrational energy of the strings to the soundboard.

(4) Stiffness of non-vibratory parties (top, bottom, ribs and neck).

(5) Volume of the cavity formed by the caisse and surface of the mouth.

(6) Resonance frequencies and their compatibility: top, floor, cavity.

And finally, we should not neglect the impact on the power and the stamp of quality strings carefully matched to the instrument. Strings may not remedy defects or transform a substantive instrument Foundation, but they can play an important role in the development or mitigation of some of its features.

### **Importance of playing style**

It must of course take account of the impact of the right hand playing technique, guitarist angle of attack of the strings, fondness for the game from or buté sensitivity light or supported, variations in the position of the point of attack, accent, nuances, speed, etc. are important factors on the final sound rendering. This explains why the professional performers tend to select instruments that not only fit their morphology and their tastes, but also highlight their personal way of playing, and are in phase with their sound choice.

## **Guitar Styles and Construction**

Classic guitar: different Internal Structures

*The bracing as part of a whole*

An experienced luthier delivers an architectural vision of mechanical system consisting of the bridge seeking more or less the soundboard with the couple to which it is submitted by the action strings, top that is itself strengthened and controlled by its Bracing. It will showcase its acoustic qualities, and balances his harmonic response by good interaction with the resonance of the instrument Fund. The Bracing fixed under the soundboard is often seen as the "signature" of the violin maker, to the detriment sometimes less apparent considerations.

In fact, the properties of the material used for the soundboard (density, longitudinal and transverse elasticities), its thickness, its eventual graduation (variation of thick, thicker at the

Center, less thick at the edges - practical inherited Torres but fallen into disuse) and its vibrant area are quite essential factors. The choice of these parameters is in the heart of the know-how of a luthier of talent, whose profession is based in part on its ability to select and assess a pair of wooden plates it will collate and, as the tailor of diamonds, will work to make the best possible.

Are we good, a Bracing is not reduced to a purely graphical *schema* of bars arranged in a particular order. Because again there as well, several important elements fit simultaneously into account:

- Number and arrangement of the bars (the schema or drawing itself)
- Thickness and height (affecting resistance to torsion following their length)
- Tilt bar (control +/- grand of elasticity 2 directions)
- Bars straight or curved (for pré-contraindre top)
- Existence or non-plates reinforcement or crossbars
- Precise positioning of the elements of the Bracing
- Type of wood used for Bracing (Cedar Cedar or spruce on Cedar top)

In the end, not only can 2 apparently similar internal patterns lead to quite different acoustic characteristics, but is more surprising still, a very similar sound rendering can be obtained through systems of Bracings without resemblance. In other words, he did is not unique to achieve solution the sound result desired and only the coupling of the characteristics of the top to those of the Bracing to determine to a large extent acoustic instrument qualifications provided that the rest follow well (volume and stiffness of the neck).

Nevertheless, as a guide, here are 6 different patterns of Bracings:



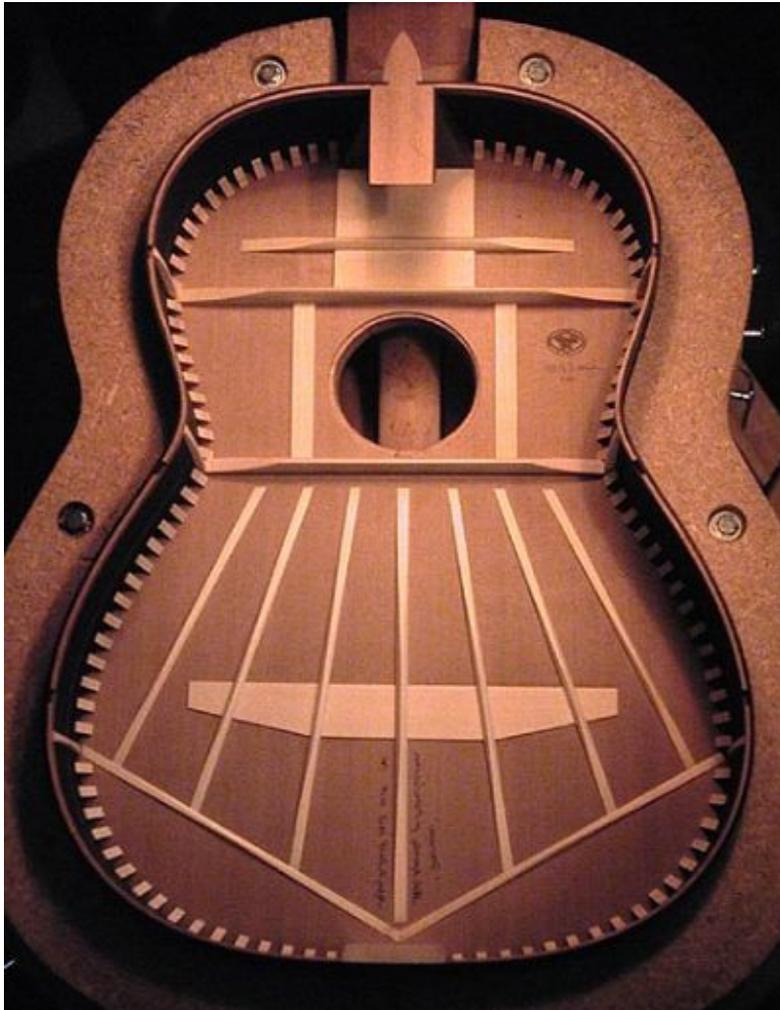
(1) Bracing in range open to 5 or 7 bars, it is the Torres Bracing par excellence. It was heavily used by many generations of Spanish luthiers who followed him.



(1A) Evolution modern in the previous schema by opening passages in lower harmonic bar and add a plate of reinforcement under the bridge.



(2) Said alternative Bracing closed also introduced by Torres. He also was greatly used without notable changes by the Spanish luthiers who followed him.



(2A) closed Bracing improved Hauser by addition of a plate of reinforcement under the bridge.



(3) Bracing "parallel" to the grain and crossbar oblique (Hernandez y Aguado). This Bracing increases the sensitivity of the top by relaxing. Dipping the acute bar to control the response in the top of the spectrum.



(4) Asymmetric Bracing imagined by the Dr.Kasha in the 1970s to increase its effectiveness. The great complexity of its realization under the actual results obtained was right of him. It is much more used by the last square of its defenders across the Atlantic.

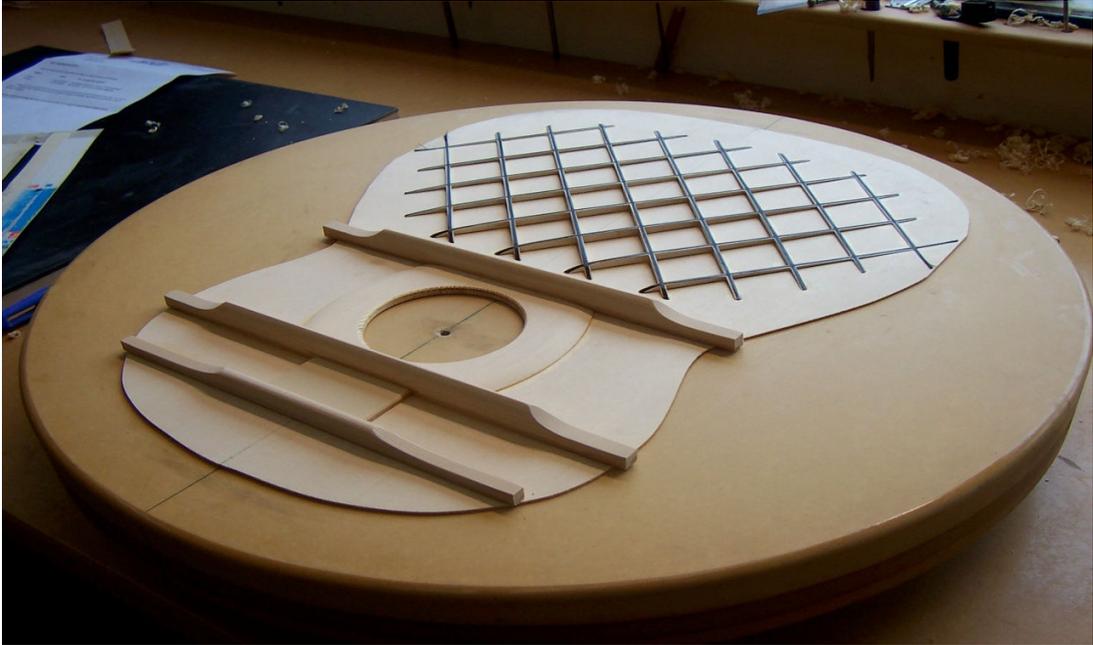


(5) Principle of radial Bracing used in particular by Humphrey for his first guitars "Millenium".

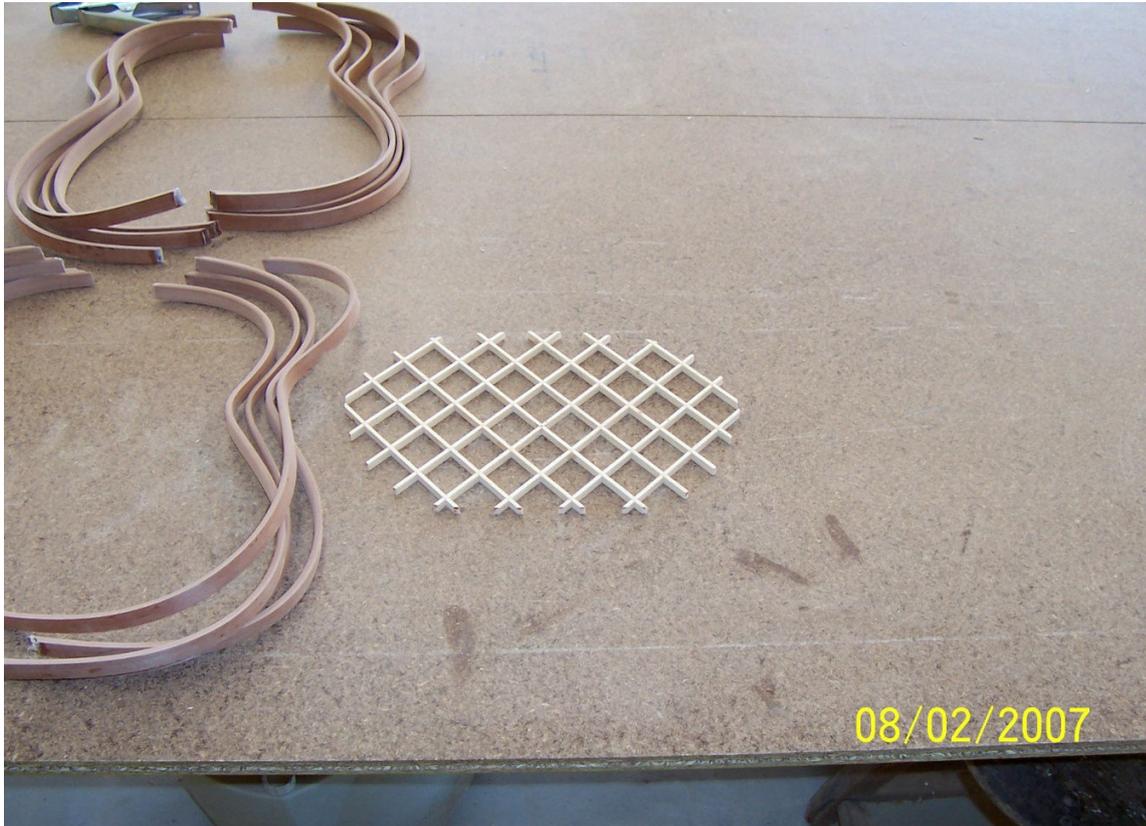


(6) The Smallman Bracing. An imposing framework supports an ultra-slim top of which the lower part is with trellis composite wood / balsa or graphite.

**Lattice 8x8 Spruce top**



## Linings



## Fitting the lining



**Neck  
Pocket**



**Neck Tenon**



1)The Rio rosewood gives a much warmer and brighter sound than Indian rosewood. Even if the floor vibrates a bit, the influence of this on the sonority of the instrument is second-order or even more often barely perceptible.

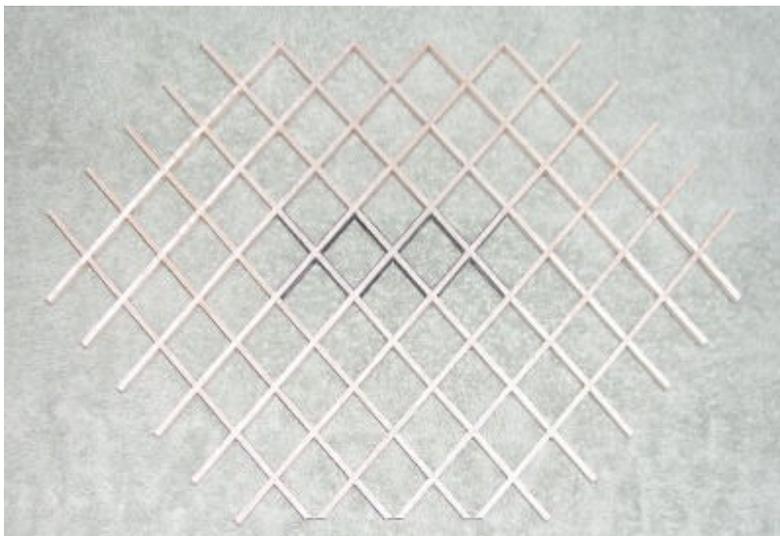


(2) The Polish buffer improves the sound qualities of the instrument. The chemical composition of the varnish or the method with which it is applied have enough little importance for sound if the opening is well done. On the other hand, a too compact and thick varnish play a role restrictive vis à vis of the vibration of the top in the adding and the rigidifying. It remains that the lacquer, thicker, produces an effect rigidifying on the top and that it follows an attack very slightly with a rebound in acute harmonics restraint. However, it is clear that the varnish to the buffer poorly withstand the test of time and proves little practice, which led many luthier to finement to abandon it.



(3) (66 Cm) long scale guitars are more powerful at the cost of a greater difficulty to play. It is a myth that has been maintained in the 1970s as a by-product of the Ramirez/Ségovia collaboration. At present, no guitar, best-performing included, exceeds 655 mm pitch, except special and express of the final client order. For my part, I see no difference noticeable in delivery in the fact that there is 1 cm more or less distributed on the scale. In contrast, inclination, width and thickness of the neck have their importance in ease of playing.

(4) The lattice bracing (lattice) produced the most powerful guitars but with very different sound characteristics to the guitar of Spanish tradition. It is in fact the combination of a very thin top supported by a bracing (using materials such as synthetic fibre of carbon or balsa) lightweight trellis and an interior rigid framework, building very heavy and rigid of the sound box, this system was originally designed by luthier Greg Smallman. Only the combination of all these elements significantly alters sound delivery. To be convinced, it is sufficient to test a guitar equipped with a lattice bracing trellis that do not have other characteristics (examples: Manuel Rodriguez, Paul Fisher, Henner Hagenlocher,...). But this system is not even necessary to achieve a very strong projection, even if it is true that the guitars built following its principles provide this particularly concentrated characteristic sound and substantial volume in all registries, it is at the price of a tonality, of course we are all free to like it or not. In this regard I recommend if you are interested consulting the notes the construction notes of the violin maker American Dave Schramm, one of the best specialists in this type of Bracing ([here](#))).





(5) For a warm, deep and colourful sound take a cedar top and focus on spruce for more clear and bright sound. This is actually true at the beginning of "career" of the instrument when comparing two guitars a luthier, all things being equal, because Cedar is mechanically more flexible than the spruce and more conducive to the return of the low medium and the low frequencies. In reality, it often note and somewhat paradoxical manner more resemblance between two guitars respectively in Cedar and spruce same luthier, once the first years of actual use, as almost identical in appearance guitars manufactured by various luthiers. Moreover, some of the best instrument makers have the option of completely muddying by obtaining spruce of the sounds that you attribute to at the outset to the cedar and vice versa. Should also be remembered that the effect of the Bracing that fundamentally

transforms the mechanical properties of the top is fundamental. It is still a difference all things being equal often rendered tenuous and subtle: more presence (by intake of low frequencies) offered by the Cedar, against the acute more concentrated and penetrating proposed by Norway spruce.

<http://www.guitareconcert.com/16901/27390.html>

## The fundamental sonic characteristic

In choosing a guitar concert, the determination of what is research based on personal inclinations all, his playing and his repertoire of choice is an essential step. In this way the problem of positioning your choice of instrument is the only rational approach valid in the matter.

The offer, as discussed in the section "Luthiers" is almost bloated. Without proper consideration well in advance and focus the musical characteristics required, this research, although final exciting become a huge obstacle course, or more often, a sad lottery ...

I was struck by the extreme poverty analysis grids implied, against which even the most professional guitarists consider the qualities of an instrument. Found in order, projection, sustain, balance, separation records, "heat" and the list stops there in the best case is extended by the criteria belonging to the next page ( other criteria ) criteria that are my humble opinion less important).

I propose an approach of categorizing the instrument, according to note 16 + 4 (stamp) criteria. In reality, these criteria can be grouped according to six families, identified by color codes:  
 Beige: aggressiveness of the instrument

- Canary: sound texture and substance
- Egg yolk: sound presence
- Orange: sound power
- Rose: fidelity response
- Mauve natural timbre

My evaluation grid:

Critère / Degré	★ ★ ★			Commentaire
	★	★★	★★★	
<b>Attaque</b>	retenue	instantanée	explosive	rapidité de réaction à la sollicitation
<b>Percussion</b>	ronde	martelée	acérée	façon harpe, piano ou clavecin
<b>Dynamique</b>	limitée	nerveuse	débridée	fonction type de jeu - léger ou appuyé
<b>Corps</b>	sèche	consistante	épaisse	pure question de goût
<b>Structure</b>	délicate	charpentée	imposante	occupation de l'espace sonore
<b>Définition</b>	composite	harmonique	concentrée	fonction du répertoire
<b>Longueur</b>	courte - vite amortie	moyenne	soutenue	facilité vibrato, liaisons
<b>Amplitude</b>	comprimée	ouverte	panoramique	Linéarité ou perspective
<b>Profondeur</b>	directe / franche	réverbérante	caverneuse	enregistrement +/- facilité
<b>Volume</b>	limité	élevé	important	énergie sonore émise
<b>Projection</b>	intime	forte	pénétrante	s'entend +/- de loin
<b>Régularité</b>	résonnances	lisse	uniforme	compensation main droite +/- nécessaire
<b>Balance</b>	un registre dominant (G/M/A)	plutôt équilibrée	équilibre parfait	dépend du répertoire et du goût personnel
<b>Clarté</b>	fondue	détachée	analytique	harmonie ou contrepoint
<b>Brillance</b>	mate / sourde	lumineuse	rutilante	goût et répertoire
<b>Palette</b>	typée (peu de couleur)	variée	versatile	style de jeu sobre ou contrasté
<b>Timbre</b>	métallique (clavecin)	neutre (piano)	chaleureuse (cordes)	pure affaire de goût
<b>Aigus</b>	acidulés (luth)	cristallins (clochettes)	sucrés ou crémeux	
<b>Mediums</b>	nasals (clarinette)	neutres (hautbois)	suavés (saxo)	
<b>Graves</b>	rauques (trombone)	sombres (basson)	veloutés (violoncelle)	

## Assessment approach to choose a guitar concert

The proposed approach may seem somewhat excessive and tedious. However, it should be noted that it is enough to eliminate the above table the boxes to its prohibitive for you to determine the acceptable areas. Knowing that your ideal instrument has probably never been built, some instruments will however not compatible with your expectations at the outset, your playing style or your personality. It is therefore important to know how to quickly remove following a disciplined approach. As to have an instrument in profound harmony with you (at some point) will help you achieve an artistic expression natural minimizing the expense of technical efforts to cons-balance the natural characteristics of your instrument. Of course if your playing or your favorite repertoire were to change over time, you will have to change the style of instrument.

Personally, fault or failing probably wanted me decide on my sound Features "ideal", and having probably not a conventional technique of playing, I found myself at the head of a large collection of instruments all very different and that I am deeply attached. I doubt many of my readers have the desire to share my fate ...

Order to exercise this right, I classerai this method in a page in the next section different approaches to sound. I will and I & II Hauser, Fleta I, III Ramirez, Miguel Rodriguez Jr., Bernabe, Friederich, Ruck, Gilbert, Fisher, Humphrey, and Smallman Dammann. I will also come to a page in a list discography allowing you to "do" the ear

### Les différents styles en matière sonore

#### Remarques liminaires

It would be hard to find a sound instrument for the "ideal" single desired by musicians and pursued by luthiers. In reality, each maker, at a given moment of his career will find some sound characteristics according to their tastes and those of its customers. For the most part, luthiers are changing over time and their construction concepts and instruments of different ages tend to "sound" differently. It is not uncommon to see the craftsman take 2 or 3 parallel construction drawings to enrich its offer and reach a wider audience.

#### Caractéristiques sonores de quelques signatures-phares

We will indicate to some of the most famous luthiers how their instruments sound average nonbstant differences often quite sensitive instrument to another. These observations are the result of careful listening to multiple recordings featuring these instruments.

- A.Torres: soft, loose, fragile, singing, full of charm and mystery
- S.Hernandez dynamic, abrasive, profoundly Iberian
- H.Hauser: punchy and sharp, austere, direct, versatile, brilliant
- I.Fleta: clear and direct, authoritative, warm, balanced, versatile

- J.Ramirez: sweet, melodious, charming, powerful, romantic
- Mi.Rodriguez: contrasting, deep, soft, warm, lyrical
- J.Romanillos: near Hauser, heat and control over
- D.Friederich: colorful, elegant, versatile, direct, refined and subtle
- R.Ruck: neutral, direct, powerful, balanced, versatile
- J.Gilbert: spicy, haunting, powerful, opulent
- K.Panhuysen: nervous, neutral, colorful, full of rising, imposing and austere
- T.Humphrey: nervous, powerful, neutral, surgical precision
- G.Smallman: nervous, colorful, balanced sustain remarkable, as amplified
- M.Dammann: low ubiquitous, ultra powerful, edgy, hot

### Analyse des sonorités de quelques signatures illustres

- Beyond the brief description of the styles adopted by luthiers presented to the previous page, it is interesting to extend the analysis by applying the grid proposed in the previous section. This allows to compare these instruments in a rigorous and precise. In order to avoid biases and through various made by both of her taken by the electronic post-recording, I required to listen to many recordings and, whenever it was possible by several different performers instrument .
-

Luthiers	Torres	Hauser I	Fleta I	Ramirez	Rodriguez	Bernabe	Friederich	Ruck	Gilbert	Fischer	Panhuysen	Humphrey	Smallman	Dammann
Attaque	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Percussion	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Dynamique	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Corps	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Structure	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Définition	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Longueur	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Amplitude	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Profondeur	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Volume	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Projection	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Régularité	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Balance	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Clarté	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Brillance	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Palette	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Timbre	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Aigus	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Mediums	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Graves	★	★	★	★	★	★	★	★	★	★	★	★	★	★

## Mon classement des Luthiers

- I took the chance to indulge in the risky task of not only identify but also to rank the most famous luthiers. The table below shows the tests that I've done personally and directly, or if the listening several CD recordings. Only a few biases resulting from the single character or indirect evidence.
- It is very important to note that a luthier:
  - 1) Made evolve its principles of construction and resulting tone over time.
  - 2) Product quality instruments nonuniform. Some "boxent" in the top category, others are below average quality.
  - 3) I do not know very many people who put their disposal failures.
  - 4) My assessment is fairly objective and I could qualify to excellent productions that you may consider as unsatisfactory from your point of view. In fact, everyone has their own technique of playing many instruments and "not sound" to you this simple fact.
- So I made the choice to position each maker having in mind its instruments "median" knowing that the quality of a particular instrument could be located in both the level considered as well as the two adjacent levels.

Category	Price (€)	Luthier	Country	Table	Comment
Excluding Category 40000-1500000		Antonio Torres	ESP	E	

## What Makes a Guitar Left-Handed?

We were asked whether any of the guitars we sell could be supplied in left handed versions.. The bigger question is what has to be changed from the "standard" right-handed guitar to make it suitable for left-handed use?

Obviously the strings are the "other" way around and to maintain symmetry of action when tuning the machine heads are reversed.. Then one or more of the following -

- the saddle is reversed/replaced
- there is a different bridge
- the saddle is reversed/replaced
- there is a different soundboard bracing

Just how many of these changes are required depends on the design of the guitar. A guitar is rarely symmetrical from treble to bass.

The strings are of different diameters and this needs to be accommodated in the depth of the grooves in the nut and in the slope of the saddle

Intonation issues are addressed by angling the saddle in the bridge and/or by having a compensated saddle. Occasionally a luthier will fit a compensated nut. To angle the saddle means having a slot cut in the bridge at an angle and it is this that can mean alternative bridges for left- and right-handed versions.

Finally there is the issue of asymmetric bracing under the soundboard where different weights of wood or different patterns are used for bass and treble. In such cases and left-handed guitar has a different soundboard to a right-handed one. So has to built especially, in most cases specially built left handed guitars are no more expensive.

## Classical Guitars and Flamenco Guitars

Classical guitars and flamenco guitars are different instruments both in terms of construction and materials. These differences lead to the differences in sound quality and playing characteristics of the 2 types of instrument.

The main differences are:

1. Different bracing patterns under the soundboard.
2. Flamenco guitars tend to be narrower.
3. Strings action is set much lower in flamenco models. This is done by lowering the bridge, nut and the saddle, and also by using a different angle to join the neck with the the body making the strings run more parallel to the neck and soundboard than they do in a typical classical guitar.
4. Because the action is lower, string buzzing is normal to a certain extent with a flamenco guitar. This would be totally unwanted with a classical model.
5. In a flamenco guitar Spanish solid cypress is traditionally used for back and sides and German spruce for the soundboard. In a classical guitar Indian rosewood is the wood of choice for back and sides and German spruce or cedar is used for the soundboard.
6. The Flamenco guitar has a large "tap plate" or "golpeador" to protect the soundboard from the characteristic percussive hitting (tapping???) of the soundboard with the player's nails In recent years, the "flamenca Negra" (with its Indian rosewood back and sides) has become increasingly popular . This type of flamenco guitar has been adopted by a number of famous Spanish flamenco players. There is also the practical reason that that cypress wood has become more difficult to obtain and as a consequence more expensive.

After :Guitarras Alhambra Date: 30/07/2003