

The London Guitar Academy – Guitar club podcast 1 - program notes

by Terry Relph-Knight, issue 1, 02/02/16

The sounds of the guitar – Part 1

A journey through the history of the guitar demonstrating the range of sounds now available to the modern guitarist.

It is interesting to note that each type of guitar is closely associated with a certain style of music, the particular characteristics of each guitar type being best suited to certain styles, and the sound of each type has become inextricably linked with the tonality of these styles.

Early guitars

The guitar started life in Europe around the late 16th century as a small bodied 4 or 5 course instrument, a simpler alternative to the lute. The neck was short, with a long body and the scale length was relatively long at around 27 inches. The sound hole was usually covered by a parchment rose.

These instruments, now referred to as the Baroque guitar

https://en.wikipedia.org/wiki/Baroque_guitar, were played at court, or in intimate domestic settings, often as an accompaniment to a singer. They were strung with gut strings in pairs, or courses. The use of courses – string pairs or triplets – was an attempt to increase volume, which was a problem for plucked string instruments of the time. In fact the search for volume runs throughout the history of the guitar and has lead to the electric guitar. This is not just in an attempt to be heard. The benefit of a louder guitar is not just that it can be loud, but that it has a wide dynamic range and is more responsive to a players touch.

The use of string courses has survived in two well known modern instruments; the mandolin (to be accurate the mandolin family) and the twelve string guitar.



A five course Baroque guitar from 1653 by Matteo Seelos. Image: Olav Nyhus, licensed under CCASA 3.0 unported

Various tunings were used for the Baroque guitar, most of them re-entrant

https://en.wikipedia.org/wiki/Reentrant_tuning like the Ukulele and 5 string Banjo today, where one or two of the lower courses were tuned high. Perhaps the closest modern instrument is the 4 string Tenor guitar. Fretting rarely extended much beyond the twelfth fret because the gut strings of the time would fail in their intonation https://en.wikipedia.org/wiki/Intonation_%28music%29 and also tended to lack sustain at the higher pitches. The frets themselves were moveable and of tied on gut, with a few frets on the body of glued on hardwood.

Re-entrant tuning still survives today in some stringed instruments such as the ukulele and the 5 string banjo. Re-entrant tunings were originally used because of the difficulty of making music strings that would cover a wide range of pitches.

In the 16th century most stringed instruments had only four strings or courses and the majority of stringed instruments even today have four strings (or courses). The violin family, the mandolin and mandocello, the bouzouki and the 4 string banjo, and are tuned in fifths. In fact the 6 strings of the modern guitar are one of the things that set it apart from other stringed instruments and it is significant that most guitar string sets switch from a plain string to a wound string for the fourth string. A plain fourth the same diameter as the wound fourth would be a really stiff piece of wire and would be unplayable. Even in gut or nylon it wouldn't work. It was the introduction of wound strings around 1659, with windings that could add mass while retaining a thin core for flexibility, that made modern string sets and modern instruments possible.

Back then string makers had a problem making strings that would cover a large range of pitches on the same scale length, particularly in making bass strings. One solution was to use re-entrant tuning, where instead of moving down in pitch with bass strings the instrument was instead strung with a lighter string, tuned to the same relative intervals as the 'upper' strings, but at a higher pitch. Another approach was to use an extended neck such as the neck of the arch lute and later on the harp guitar, where bass strings were added with a much longer scale than the melody strings.

Over time the early guitar mutated, at one time there were variants of the guitar that could be played with a bow (one of the reasons for a narrow waist, unlike the teardrop shape of the oud and the lute) or gained extra strings, such as the harp guitar. The guitar was made in a variety of sizes and pitches. Today, although the larger manufacturers make guitars in a range of body sizes, the pitch, tuning and the scale length are mostly standardised. Only odd echoes of the former variety remain in the form of the rarely seen terz guitar, the requinto, the Portuguese guitar and the baritone guitar. The harp guitar has also made something of a comeback through the interest in surviving and restored instruments.



A Gibson archtop harp guitar from the 1900s with 10 bass strings in addition to the six string guitar neck. Image: T. Relph-Knight, from the collection of Paul Brett.

One man at least, Dr Hiroko Niibori http://english.niibori.com/guitar/guitar_index_e.html, has tried to formalise a family of nylon strung guitars relative to the prime or 'standard' guitar (in the same way that the bowed string family includes the violin, the viola, the cello and the double bass). The Niibori family has the alto (tuned a fifth above prime), the bass (tuned a fourth below prime) and the contra guitar (tuned an octave below prime).

Torres and the classical nylon strung guitar



A Torres guitar from 1859. Museu de la Música de Barcelona collection. Image: CC BY-SA 3.0 license

The defining moment for the modern guitar was in the 19th century when Don Antonio de Torres Jurado https://en.wikipedia.org/wiki/Antonio_de_Torres_Jurado made his guitars for players such as Julian Arcas and Francisco Tarrega. These are recognisable as modern, gut/nylon strung, classical guitars with 6 single strings, larger bodies, a lower bout larger than the upper, fan bracing for the top and scale length of around 650mm. A variant of the classical nylon strung guitar is the flamenco guitar which is constructed for a brighter more percussive sound. These types of guitars are well known today.

Up until 1948 'classical' guitars were strung with trebles made from sheep gut and basses of silver-plated, copper wire wound around a silk filament core. After the II World War sheep, and therefore sheep gut, were in short supply, as mutton had been used to feed the troops and the sheep gut to make surgical sutures. DuPont had a new synthetic material – nylon – and Albert Augustine worked with Segovia, DuPont and Olinto Mari to develop nylon guitar strings. Olinto Mari was president of E.& O. Mari/La Bella Strings. LaBella <http://www.labella.com/> still make strings and Augustine brand strings <http://www.albertaugustine.com/> are also still available today.

The Flamenco guitar

Although the dictator Franco promoted Flamenco as a popular Spanish music form, a spectacle to attract tourists, at its root Flamenco was and to some extent still is, a sub-culture, a music of the gypsy people, with its heart in Andalusia in southern Spain.

Originally most gypsy Flamenco guitarists used the cheapest guitars, with a back and sides made from Spanish cypress, which was originally a readily available local timber, with a thin European spruce top and simple hardwood, friction tuning pegs. These instruments, by their nature, had a bright percussive sound, with short sustain, which over time has come to define the style.

The Flamenco guitar today is a distinct type of guitar that differs from the nylon strung 'classical' guitar in a number of ways. The body is not as deep and the general build is quite light. The action is generally set lower than a classical guitar. Nowadays instrument quality cypress is expensive and other woods, such as sandalwood or even maple, may be used for the back and sides. The neck is often made of cedar. Tapping plates or 'golpedor' may be fitted on either side of the sound hole to

protect the top of the guitar from the finger taps which are part of the style.

Flamenco negra guitars have also been developed with rosewood back and sides. The negra instruments have a slightly darker sound than the cypress wood and are perhaps a hybrid between classical and Flamenco. Since the emergence of the negra guitars the traditionally constructed Flamenco instruments are referred to as Flamenco 'blanca'.

Style displacement

Various artists have adopted the nylon strung classical guitar to play styles it is not usually associated with. In the later part of his career, the country music guitarist Chet Atkins almost exclusively played a nylon strung and of course Willie Nelson is famous for playing 'Trigger', a Martin nylon strung guitar.

www.rollingstone.com/music/videos/willie-nelson-rolling-stone-magazine-mastering-the-craft-trigger-20150211

Willie says that, for him, the great benefit of Trigger was that it had something of the gypsy jazz tone, allowing him to sound a little like Django.

Some luthiers have developed an archtop nylon strung guitar for jazz players. For example

<http://www.nyロンstringjazzguitar.com/index.html>.

The next podcast

Look out for the next podcast from the London Guitar Academy where we will be continuing the story of guitar with the adoption of steel strings and the rise of the American luthiers.