AITCHISON MNATZAGANIAN

CELLO MAKERS RESTORERS & DEALERS

NEWS FOR CELLISTS SPRING 2015

Cello endpin feedback request

We are about to embark on a research project to explore the acoustical properties of cello endpins, in preparation for a future article on the subject. It would be wonderful to hear from you if you have recently experimented with endpins such as Mitsuki (Solipin), Bender, Bowed Acoustics, Bois D'Harmonie and Stahlhammer.

Cello courses, groups and societies

We're delighted to have heard from so many cellists with details of cello courses which can be found at: www.aitchisoncellos.com/events-and-links/cello-courses/ Please feel free to send us details of all future courses and if you run a regular cello group or society we will also gladly create a link to your site.

Cello fingerboards

In this issue we explore the complex three-dimensional form of the cello fingerboard and its close relationship with the bridge curve. A well designed and maintained fingerboard supports the cellist in multiple ways, ensuring good left hand support, comfortable string heights, precise intonation and good bowing clearances.

'Over time the fingerboard will wear into an orderly pattern of ripples'

Antonio Ungarini cello

Last year we received an intriguing cello for sale through the Cello Exchange. We were very struck by the instrument's distinctive, double purfled outline and unusually long and sinuous f-holes. The cello had been acquired as the work of a little known 19th century Italian maker, Giovanni Batista Chiodi, so the first step was to consult Eric Blot, the world's expert in modern Italian violin making.

We took the cello to show Mr Blot in Cremona in late January. He decided that it was considerably older than the label suggested and drew our attention to a cello by Antonio Ungarini featured in '*The Makers of Central Italy*' by Florian Leonhard. He urged us to consult Mr Leonhard about the instrument as he had spent ten years researching the makers of Marche and Umbria.

Encouraged and intrigued, we made our way back home from Cremona through a spectacularly heavy fall of snow. The following month we visited Mr Leonhard; he was pleased to see the cello and agreed that is a very good and characteristic example of the work of Antonio Ungarini (1696-1771) who worked in Fabriano, a village in the Marche region of Italy.

While their Cremonese contemporaries enjoyed international recognition, 18th century central Italian makers worked for a local clientele using local materials, often creating their own styles and techniques, but nonetheless with impressive artistic and tonal results. There are signs of Brescian influence in this cello's long, serpentine f-holes and the distinctive undercutting of the volute in the scroll. The cello's tone is full of beauty and character and the classical varnish is of very high quality. More information and photographs of the cello can be found online at www.aitchisoncellos.com

New slim Krentz wolf note modulator

Good news for cellists with narrow f-holes who would like to try the innovative Krentz modulator: Krentz has just brought out a new 14mm diameter slim alternative to the standard 16mm modulator. We have several slim versions in stock as well as the standard product. They cost £95 plus £10 for postage via Special Delivery.

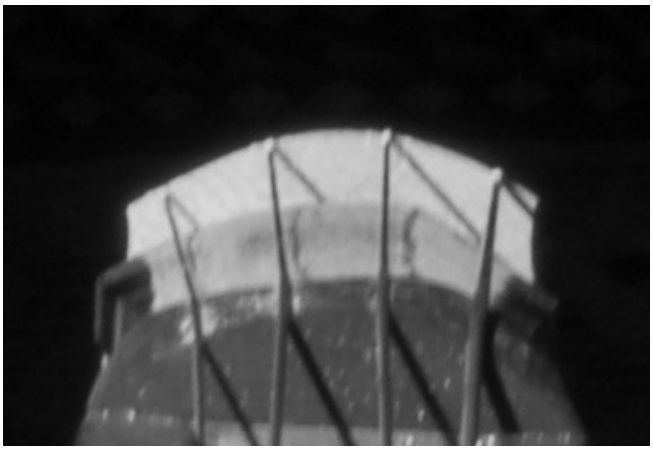
FINGERBOARDS AND BRIDGE CURVES

The cello fingerboard is a remarkably complex three-dimensional form. The ideal fingerboard is slightly hollowed along its length (known as the 'fingerboard scoop') to allow the stopped strings to sound cleanly without buzzing in lower positions, but not so concave that it is hard work to stop the strings in 4th, 5th and 6th positions. The profile of the ideal fingerboard should also match the bridge curve to create an even progression of string clearances from A to C.

A well designed fingerboard will allow a little extra width and horizontal support to the player's hand outside the A string, so that the cellist does not feel that he/she is about to 'fall off' the treble side of the fingerboard. The Romberg (the flat section of the fingerboard beneath the C string) has also evolved to provide security to the left hand on the C string.

A lot of work and intelligent thought takes place behind the scenes while designing and maintaining fingerboards to ensure that everything feels right and works well for the player. An important factor – and one which is not universally appreciated - is that the fingerboard must match up with the bridge curve, which itself is determined by the player's string choice and playing style.

Bridge curve criteria: The bridge curve should allow for good bowing clearance across the strings and should be adapted to suit the string choice (e.g. gut as opposed to metal core strings) and the playing style of the cellist, as some players require more bowing clearance than others, particularly if they bow heavily.



This image taken at a very low angle down the fingerboard shows the close relationship which should exist between the profiles of the bridge and fingerboard.

Fingerboard profile problems: If the profile of the fingerboard does not match the bridge curve, this can leave neighbouring strings with radically different heights above the fingerboard surface. If one string is disproportionately higher above the fingerboard than its neighbour, it will have to stretch more when stopped and will have a correspondingly higher pitch than its neighbour. As well as making it difficult to tune stopped fifths across the strings,* this scenario can feel off-putting to the player during string crossings. If there are significant differences in action height, the fingers have to make uneven degrees of effort on the different strings.

If uneven string heights are caused by a mismatch between bridge and fingerboard profile, this will also create bowing clearance problems when playing in high positions. For example, a common problem with poor bridge curve design is when playing in thumb position on the D string; if you don't want to play too close to the bridge, the string may not be high enough to give you sufficient clearance from the A and G strings to bow the D string cleanly.

The standard string heights for metal strings (measured from the surface of the fingerboard to the centre of the string) are approximately 6mm for the A, 7mm for the D, 8mm for the G and 8.5mm for the C. Ideally, string heights, bridge and fingerboard curves and the amount of fingerboard scoop should all be adjusted to suit the owner's bowing style and left hand strength.

* Problems in tuning stopped fifths can also be caused by string selection. Strings increase very slightly in length as you press them down with your fingers. Tuning problems arise if one string is less elastic than its neighbour, in which case its pitch will become more elevated than its more flexible neighbour as you press both strings down. The solution in this case is to ensure that both strings have similar elasticity. For this reason it is usually best to use the same string families for A/D and C/G pairings (e.g. Larsen A and D with Spirocore G and C).

Bridge curve design and history, and its influence on the fingerboard: If all four cello strings were made from exactly the same materials and performed identically, the ideal bridge shape would be a completely symmetrical arc (i.e. a section of a perfect

circle) with slightly flatter sections outside the A and C strings to prevent the outside strings slipping sideways off the bridge. However, the four cello strings do not all behave in the same way. The lower strings have more mass than the upper strings and require a greater bow force (more pressure) to make them speak and therefore need more bowing clearance than the upper strings.

Historically, bridge curve and fingerboard profile styles have evolved in line with developments in string manufacture and playing style. Seventy years ago, cello bridges were made for a combination of plain gut A and D strings and metal wound gut G and C strings; these bridges were therefore cut with a relatively flat and asymmetric curve. The overall curve was shallow because - unlike metal core strings - gut core strings do not respond to or require heavy bow pressure. The curve was more asymmetric (flatter under the D string) than the modern bridge because the metal wound G string required much more bowing clearance than the plain gut D.

With the advent of metal core strings which required heavier bowing pressure than gut strings, the bridge curve has become more highly arched to allow for more string clearance on both the D and G strings. Modern bridges also tend to be more symmetrical than earlier bridges because most modern top strings have the same basic construction as the bottom strings. In fact, some violin making workshops now make completely symmetrical bridge curves which give equal clearance to the D and G strings, but we prefer to use a slightly asymmetric bridge curve - which recognises that the D string still requires less bowing pressure than the G - unless a player specifically requires a more symmetrical arrangement to suit their bowing style.

Old fingerboard, new bridge: Due to the relatively recent developments in bridge profile, a luthier cutting a bridge for a cello with a seventy year old fingerboard which has a rather flat, slightly asymmetrical profile by modern standards may have to adapt the old fingerboard to the current, more highly arched and more symmetrical modern bridge curve. The success of the procedure will depend on how much wood there is left to work with in the old fingerboard. We recently sold a fine old English cello to a player who found there was too much string clearance on the D, making it hard work for her in high positions. The solution was to re-shape the lower section of the treble side of the fingerboard, bringing it closer to the bridge curve. Fortunately there was enough wood in the fingerboard for this procedure and the cellist found it a big improvement.

Fingerboard length: The length of a fingerboard should be 85% of the string length. Quite often luthiers are asked to ensure that a certain high note (e.g. top E for the Elgar cello concerto) can be played on the board. Some players using higher notes than this, particularly in contemporary repertoire, might want extra-long fingerboards but others find technical solutions to stop the string in mid-air and do not rely on having a long fingerboard.

Fingerboard maintenance: Although ebony is a very hard wearing wood, over time the fingerboard will naturally wear into an orderly pattern of ripples, corresponding to each place at which the string is stopped by the fingers of the left hand. Directly underneath each string there is also usually a groove worn into the fingerboard. These ripples and grooves need to be smoothed out from time to time by a luthier (a process called 'shooting' or 'truing') otherwise the strings will start to buzz and jar against the bumps in the board when the string is stopped by the player. How often your fingerboard needs truing depends on string choice, left hand strength and how hard-wearing the ebony of your fingerboard is.

Occasionally, the fingerboard can become partly unglued from the neck. This can cause a buzz and an increase in string heights as the unglued neck and fingerboard warp under the tension of the strings. It is very important to get the board re-glued to the neck by a professional luthier as soon as possible, as the neck will warp further without the fingerboard's support. Great care needs to be taken to remove all warping in fingerboard and neck during the gluing process.

Over the years, fingerboards are gradually worn down by truing and in the end will become too thin and have to be replaced. We try to keep fine old fingerboards going for as long as possible, as the quality of the ebony can be so high that they can maintain their stiffness even when worn very thin. However, if your fingerboard feels like a springy diving board when you play in the highest positions and no longer has the rigidity to support the weight of your left hand, it's time to consider a new board. We recommend going to a very experienced luthier for this job as there may be a complex array of set-up decisions to make. It's also well worth asking your luthier to use their best well-seasoned ebony for your new fingerboard.

SELECTED CELLOS AND BOWS

ANTONIO UNGARINI CELLO c.1750

L.O.B: 30″ (762mm) String length: 27¼″ (690 mm)
Price: £125,000

A fine example of the work of Antonio Ungarini (c1696-1771) made in Fabriano, central Italy. Florian Leonhard certificate.

BENJAMIN BANKS CELLO c.1780

L.O.B: 29⅛″ (740mm) String length: 27″ (686mm)
Price: £78,000

A magnificent Banks cello in very good condition, with beautiful red brown varnish and a deep, complex and powerful tone. Hill certificate.

HENRY LOCKEY HILL CELLO 1827

L.O.B.: 29¼″ (742mm) String length: 26½″ (674mm)
Price: £tbc

A beautiful example of this famous maker's work in very good condition with a colourful, expressive sound and excellent projection.

JOSEPH HILL CELLO 1770

L.O.B: 29⅛″ (740mm) String Length 26¾″ (677mm)
Price: £47,500

An exquisite cello in exceptionally good condition with a one-piece maple back and beautiful varnish. The tone is clear, expressive and powerful. Hill certificate.

CIRCLE OF ARTHUR BETTS CELLO c.1840

L.O.B.: 29″ (738mm) String length: 27⅛″ (690mm)
Price: £45,000

A strong and handsome example of this school of making in excellent condition with a rich, deep and powerful tone.

GEORGES ADOLPHE CHANOT 1895

L.O.B: 29¾" (755mm) String length: 27½" (698mm)
Price: £35,000

A handsome, powerful and expressive instrument in excellent condition with fine golden brown varnish. Labelled internally and inscribed at the endpin.

HENRY JAY CELLO c.1760

L.O.B: 29½" (751mm) String length: 27" (685mm)
Price: £35,000

An attractive cello by Henry Jay in very good condition with a rich, refined sound and beautiful transparent golden brown varnish. Restored in our workshop.

WAMSLEY SCHOOL CELLO c.1750

L.O.B: 28″ (712mm) String length: 26¾″ (680mm)
Price: £33,000

This petite cello is a very nice example of the Wamsley School and is in good playing condition. Hill receipt.

COLIN IRVING CELLO 2005

L.O.B: 29½" (750mm) String length: 27⅜" (696mm)
Price: £24,000

A strong and handsome cello with a powerful, deep tone and good response.

MICHAEL KEARNS CELLO 1998

L.O.B: 29½″ (750mm) String length: 27½″ (698mm)
Price: £16,000

This elegant cello is in excellent condition and has a quick, balanced response and even tone.

FURBER SCHOOL CELLO c.1820

L.O.B: 29⅛" (740mm) String Length 26¾″ (677mm)
Price: £12,500

A very beautiful sounding English cello of the Furber School with painted-on purfling.

MIRECOURT CELLO c.1910

L.O.B: 30¼" (770mm) String length: 27" (685mm)
Price: £9,000

NEUNER & HORNSTEINER CELLO c.1880

L.O.B: 29½" (748mm) String length: 27¼" (694mm)
Price: £7,500

Selected Cello Bows

C N Bazin	74.0	S	**£5,500**
John Clutterbuck	81.9	G/T	**£4,750**
Charles Ervin	80.0	G	**£4,510**
Steve Salchow	81.3	S	**£4,170**
Garner Wilson	81.2	G/T	**£3,950**
Albert Nürnberger	76.4	S	**£3,750**
Christian Wanka	82.5	G	**£3,680**
Paul Sadka	79.5	S	**£3,500**
Thomas Goering	84.6	S	**£3,260**
H R Pfretzschner	84.0	S	**£3,250**
John Aniano	81.4	S	**£3,170**
Mark Drehmann	81.0	S	**£3,000**
Roger Zabinski	83.3	S	**£2,980**
Martin Beilke	81.9	S	**£2,750**
Richard Grünke	82.9	S	**£2,750**
Bernd Etzler	81.0	S	**£2,750**
Emmanuel Begin	79.5	S	**£2,730**
Robert Pierce	81.8	S	**£2,650**
Klaus Grünke	80.7	S	**£2,600**
Heinz Dölling	91.0	S	**£2,500**
Gunther A Paulus	81.5	S	**£2,500**
Victor Bernard	81.0	S	**£2,400**
Andrew McGill	80.0	S	**£2,400**
Stephen Bristow	83.3	G/T	**£2,400**
Eric Gagné	81.7	S	**£2,270**
Richard Wilson	82.2	S	**£2,000**
Christian Wanka	80.2	S	**£1,970**
J S Rameau	76.7	S	**£1,500**
Luan Ruy	79.7	S	**£960**