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## **A Short History**

*Whilst this is written specifically for use when selecting a cello, much of the advice of course is applicable to the Violin and Viola.*

The cello, also known as the violoncello is the second-most popular instrument of the violin family of instruments. It is actually the lowest in range of that family, contrary to the popular belief that the double bass is the lowest of the violin family. The double bass actually belongs to the older family viols and is tuned in fourths rather than in fifths, which is the standard tuning of the violin family. The cello is a fairly difficult, but not impossible, instrument to master. Unlike the violin, the cello is played vertically and presents some problems for the new player as the bow works against gravity – unlike the violin and viola, which are played under the chin, hence, the bow is facilitated by gravity.

The length of the string requires some acquired strength to push the strings to the fingerboard firmly. In the higher positions, the thumb functions as the nut to stop the strings, enabling the four remaining fingers to be used for fingering notes. Note spacing on the strings can present quite a challenge to a person with short fingers. The cello has a wonderful range of repertoire, including solo works, chamber music and important orchestral parts. Cellists are always in demand as professional and amateur players. There are important concertos by Vivaldi, Haydn, Boccherini, Dvorak, Schuman, Saint Saens and Elgar. J.S. Bach wrote six unaccompanied suites for solo cello.

Cellos are built in a variety of fractional sizes to accommodate young players. One can readily find an instrument scaled down to 1/8 size for those who want to introduce a youngster at a very early age. These fractional sizes are popular in Suzuki programs, with some players starting as early as four to five years of age.

The cello is the result of a very long process of evolution beginning in the 1500s. In modern history, it is believed that its derivation is from the ancient viola da gamba and then on to the classic Italian and German schools of the 17th and 18th centuries. Final development and standardization of the body shape and size was formulated during that golden age in Italy and Germany. Certainly the name Stradivari is known to all as the quintessential violinmaker; however, Antonio Stradivari built a number of cellos, of which only a few exist today. Other makers of that era were the Amati family of Cremona, Domenico Montagnana of Venice, Matteo Goffriller, also of Venice – just to name a few. Those which exist are coveted by concert cellists and are valued works of art and very expensive to acquire.

As music developed through the 17th and 18th centuries, instruments with greater volume were required to accommodate larger instrumental ensembles, greater sound projection and rising standards of pitch. Since the ancient viols could not produce the volume of sound, the instruments of the violin family became the choice of composers of that era and the family of viols was obsolete by the French Revolution.

## **How To Buy A Cello**

### **Construction**

Commercially produced cello construction varies in terms of quality. Basic beginner cellos are usually made of laminated wood – also known as plywood. They can be made inexpensively as the tops and back can be pressed into shape during the lamination process. These instruments are popular with school music services and with rental schemes for the simple reason that they are fairly strong, don't crack easily and can withstand somewhat rough handling. Laminated cellos are best strung with steel core strings. This type of cello has a limited plate resonance and requires the extra tension created by steel core strings to get the plates vibrating. JPB Music will never knowingly sell any laminated instruments, as the sound compromise is too great. The next higher grade of cello has top and back plates of solid wood, which is pressed into shape. These cellos are

known as pressed instruments and are a bit more expensive to manufacture, but not as costly as the highest grade of cello which is "carved." Pressed instruments make a good step up for intermediate study. This type of instrument will produce good results using either steel core strings or stranded nylon core (perlon) strings.

When it comes time to invest in a serious cello, a carved instrument is a reliable option. This type of construction consists of solid wood top and back, which has its arching carved into the wood. These tops and backs start as thick planks of wood and are planed and carved into shape. Carved instruments are "graduated," which means that the top and back are not of one thickness; rather the plate is the thickest under the bridge and gradually is thinned out toward the edges. This type of construction increases the plate resonance and gives a much better sound. A good carved cello takes longer to make, uses more expensive materials and is therefore the most expensive to purchase.

Over the last few years, some excellent carved cellos have been coming to the U.K. from overseas. Some of these models can be quite reasonable in price and even ones with rather attractive wood are affordable. The lower-cost cellos that are fitted with black stained pegs, fingerboard and tailpiece can be very problematic as the stained white wood is not dimensionally stable, causing the pegs to slip and the fingerboard to warp and twist, resulting in buzzing and improper string-to-fingerboard height. The cost of replacing these items could easily exceed the value of the instrument and it might be best to consider an upgraded cello.

Ebony has always been the standard wood for pegs, fingerboards and tailpieces. Higher grade cellos may be fitted with ebony pegs or rosewood or a yellowish-brown stained hardwood, which is sometimes called boxwood. Boxwood is a very high-grade close grain wood, which is used for pegs on very expensive master instruments. Some versions of these so-called boxwood are not boxwood at all, rather they are datewood or Pearwood, which is not as dense as boxwood but they work and look great.

A point to be aware of with a new instrument, is that it will need 'playing in'. The woods are under a degree of tension from the work undertaken during manufacture. These 'tensions' need to be relaxed, which a fair degree of playing can only resolve. It is impossible to quantify how long it will take, but generally an instrument played hard for say 3 months, will probably get to within say 70% of its final playing sound. A new 'Playing-In' device, called the 'ToneRight', available from us can be used to speed up the 'playing in' process. In fact some Professional players put them on their instruments every night!

It is therefore fair to say that when purchasing a new instrument, that it will improve drastically, become more resonant, and more open.

## **What To Look For**

Before making a purchase of a new instrument, it is wise to check out a few details of construction and condition. If a carved instrument is being considered, look over the top and back to see if there are any cracks. Sometimes cracks are hairline and will appear as a faint white line running in the direction of the grain on the top. Check to see if the plate-to-rib seams are tightly glued. This is easily done by tapping lightly around the edge of the instrument with the index finger bent as if gently knocking on a door. An open seam will make a clicking sound as if something is loose. This is not a serious problem, however it should be glued so that the instrument does not suffer a loss of sound. A gun barrel view down the neck with the eye centred at the top of the scroll will reveal the squareness of the neck position. The fingerboard at this view should appear exactly between the two F holes. If it leans toward one hole or the other, the neck is not squarely set and the instrument will not be able to be played in tune as the fifths across the strings will not be true. The bridge and nut should have sufficient height so that the strings do not vibrate against the fingerboard during forte passages. The curvature of the bridge should be sufficient so that the bow doesn't catch two strings at once while being drawn. Also, the curvature should not be too extreme as to make the bow arm or wrist travel excessively to cross strings. Pegs should be checked to see that they turn smoothly and stay put. It is a good idea to have four string adjusters on the tailpiece, either as an integrated part of the tailpiece or as four separate adjusters installed on an ebony tailpiece. However there is an audible compromise with such adjusting tailpieces, which many discerning players are uncomfortable with. Some players prefer to have adjusters only on the upper one or two strings, especially where nylon (perlon) or Gut strings are used for the two lowest strings (G and C). All of the checks are standard practice at JPB Music.

## **The Endpin**

The endpin on a cello serves a similar function as the chin rest on a violin: it helps to support the instrument. The endpin rod should not be too short (so as to impede the height adjustment of the instrument) so that it can be played comfortably and with correct position of both the left hand and the bow arm. A rod of 18 to 22

inches is ideal for most players. This length allows for good height flexibility. Some cellos are now imported with very long endpin rods so that the instrument can be placed in a more horizontal position. These very long endpin rods can cause unwanted vibrations inside the cello from the un-extended portion. If considering an extra long endpin rod, test the instrument throughout its range to see if any sympathetic vibration is being produced by the endpin. The endpin rod should also be anchored to the wooden portion from inside the cello so that the rod does not fall out of its mounting when the rod is being extended. This may seem to be a minor point; however, if the player uses a sharpened point at the end of the rod to steady the cello on the floor, that sharp point can be dangerous if the endpin rod falls out of the cello onto the player's foot. If replacing an endpin on its own, by necessity it is not possible to 'anchor it in', without replacing the whole endpin unit, which largely defeats the object.

## **The Bow**

Selecting the right bow can make a big difference in the sound of a cello, and also in the way a person plays upon the instrument. When selecting a beginner's cello, a bow is usually supplied. These low-end bows are sometimes quite problematic. They are generally considered by the Instrument manufacturer as a 'make-weight'. Where the bow is of an inadequate standard, we, at JPB will automatically substitute the bow for a better Brazilwood bow, for no additional cost. Fibreglass bows, or equivalent, are sometimes suggested for beginners, as they are more forgiving to knocks than wooden bows. Their performance however often leads a lot to be desired. Any bow should only have genuine horsehair, as anything else does not work adequately.

When a more advanced bow is required, there are a number of possibilities from a higher-grade brazilwood to a professional grade pernambuco wood bow. Also, as of the last few years, a number of carbon fibre bows have appeared on the market from several manufacturers. These are also quite reliable and are liked by many players, although some brands can be pricey. The bow must feel comfortable in the hand and not too heavy at the tip. Remember, the cellist is bowing against gravity, and extra weight anywhere on the bow makes maintaining a straight bow stroke much more difficult.

## **Considering A Used Cello**

The same rules apply for the selection of a used cello. However, the buyer must be aware of prior repairs and how they were accomplished. Usually an older cello will have had some visible repair work. A crack on the top is not unusual in an older instrument and, if repaired well and properly, it should be of no concern as long as it has not affected the sound of the instrument. Cracks on the top plate should be repaired with small cleats placed along the crack on the underside of the top.

This requires the top of the instrument to be removed and is a procedure for only a professional violin-maker (luthier). A repaired crack should be perfectly level and the only remnant, if any, should be a dark line along the grain. The two edges of the crack must be perfectly level to the touch. A crack that is not level has not been properly repaired. Because of their size, cellos often have cracked ribs. The same standard applies to rib cracks with regard to being perfectly level. The "angle of projection" or "neck angle" tends to change with age. The aging process usually causes the neck and fingerboard to slowly fall toward the top plate thus lowering the projection. To fix this, the bridge will have to be lowered to readjust the distance between the strings and fingerboard so they are properly proportioned. If the neck falls too low, it will come to a point where the bridge cannot be lowered any further and an expensive "neck reset" will be required. When considering a used cello, be sure that the neck angle is within reason. Look at the bridge: If the top of the bridge where the strings rest is almost on top of the heart-shaped cut out in the centre of the bridge, the neck angle is too low. A used older cello can be quite a joy to play as it has had its voice developed, but it must be a good strong instrument with any repairs necessary done properly. An old instrument that has had a fair amount of restoration, will to a limited extent suffer from the need to be 'played in', as with a new instrument. The resulting improvement over time is dependant on the level of work undertaken. Again use of the 'ToneRight'®, can shorten the time needed.

An older cello in poor condition and with poorly done repairs will probably spend more time in the workshop than making music. Your investment in a cello could well be a considerable one. Having some knowledge of what to look for will greatly help protect that investment.

This is one of a series of Instruction sheets prepared by JPB Music to help players gain a better understanding. We write these to assist, but if you are still unsure, please either phone for more advice, or ask your teacher for help.