Shine on

There's much to admire about the 'Davidov' cello of 1712, but Stradivari's fantastic varnish makes the most powerful impact, writes Roger Hargrave

Through countless outstanding recitals, classic recordings and radio, television and film appearances, the sound of the 'Davidov' cello is known to millions. Jacqueline du Pre played it for her short but spectacular career, and after her death it went to Yo Yo Ma, who has performed on it around the world. Nevertheless, although this particularly famous Stradivari instrument has also been exhibited and photographed on many occasions, its appearance is still less familiar than its sound.

While it might be argued that looks are unimportant in a musical instrument, this ignores the fact that tone is inextricably linked to an instrument's varnish, ground, design and construction. No classical maker ever produced fine sounding instruments without paying careful attention to these details and no modern maker can afford to overlook them. In fact, the slow but inevitable deterioration of such great masterpieces demands that we make serious attempts to examine and improve our understanding of them before it is too late.

It is this fundamental principle that encourages many violin makers to peruse instruments with a fervour not always appreciated by players. As a result of their enquiries a few modern makers are raising this ancient art to a level seldom seen since the time of the great Cremonese masters. But, just in case any latter day maestro is inclined to take him or herself too seriously Antonio Stradivari made this cello to give us all a lesson in humility.

This instrument represents both a challenge and an inspiration for any violin maker, but although there is much to admire, it is the initial impact of Stradivari's remarkable varnish that creates the greatest impression. Whereas most violins and violas suffer terribly from varnish depletion, cellos can retain massive quantities and consequently are often the best source of reference for varnish aficionados. This said, cello varnishes were frequently thickly applied and can appear soiled and dull. Not so the 'Davidov' varnish. In texture it is clear and clean and, despite its delicate, even lean, application, the colour is very intense. Indeed, although I examined it on a grey, overcast day, its translucent orange glow rose spectacularly to the occasion.

The arching is low, flat and strong. The front is slightly more distorted than the back, having sunk around the bridge area

Particularly on the back, where the wood is quarter sawn, the varnish accentuates the threedimensional structure of the flames. Occasionally it appears to be locked in the flames and creates a tiger striped pattern, but generally it seems to sit upon the celebrated Cremonese ground and where chipped and scratched it has formed the characteristic Stradivari profile. On the slab cut ribs the varnish has adhered slightly better, enhancing the crushed velvet appearance of the wood. This effect can be seen on some of Stradivari's slab cut violin and viola backs, such as the 'Gibson' viola. On both back and ribs where the ground is devoid of varnish the wood has remained typically clean and highly reflective. On the head, the ground of the end grain in the flutings has a milky yellow opalescence, which although often present on Stradivari's heads is usually less obvious on the violins and violas.

Even in subdued light the 'Davidov' varnish is unmistakably special, but for a few precious moments towards evening the sun broke into the airy studio and the cello blazed with light. Not only did it change colour, it changed in transparency and depth and like some fantastic natural hologram it presented a different image with each twist and turn.

The 'Davidov' was constructed around Stradivari's so called B mould. This mould was probably developed by the family in the first decade of the 18th century. Previously Stradivari's cellos were much larger and almost all of the 35 or so that have survived have since been reduced. About 20 instruments were made to the more manageable specifications of the B pattern; however, their outlines indicate that more than one B type mould may have been employed. Much later the Stradivari family made an even smaller model known now as the B Picola, but it never proved as successful as the normal B pattern, which became the standard design for almost every cello maker since the beginning of the 19th century.

As well as varying the cello bodies, Stradivari varied the size of their heads, the larger instruments having proportionally larger heads (and originally longer necks). As might be expected the 'Davidov' head is of the smaller size. Complementing the back wood, but not the ribs, the head was cut from well figured maple with an even, medium width flame. The growth rings are exceptionally fine, as fine as wood normally chosen for high quality bridges. Sadly, in its figured form such wood is now almost extinct and it is easy to understand why. Mountain grown maples of this quality often have a thousand or more

The belly's wider grown spruce with thin but wellpronounced winter lines is typically Cremonese

year rings each (some up to 2,000); consequently any tree germinated at the time the 'Davidov' wood was harvested will not reach maturity for at least another 700 years.

Although of the smaller pattern, this head, like most Stradivari heads cut after 1700, is bold in appearance. The broad chamfers undoubtedly contribute to this strength of character, but the rest of the carving is also powerful. The chamfers were originally picked out in black, only a little of which now remains. This black lining would have added to the power of the head; however, the loss of this strengthening embellishment has to some extent been replaced by a ridge of thicker, redder varnish, which

LEFT a ridge of thicker, redder varnish has accumulated in the volutes of the scroll close to the chamfers
RIGHT on either side of the central spine the flutings are pronounced but not deep

has accumulated in the volutes of the scroll close to the chamfers. This ridge was created by years of polishing and handling.

Although generally retaining the flatter cut associated with Stradivari, the volutes of the scroll begin decisively and evenly soon after the D peg. They remain pronounced but not deep until, true to form, they deepen for the final half turn into the sting at the large round eye. Somewhat unusually for Stradivari, the sting creates a slight comma profile on both sides of the scroll. Although the volutes of Stradivari's heads are never as deeply worked as those of the Amati and Guarneri families, like the heavier chamfers they contribute to the bold appearance of the master's heads.

The turns of this scroll have a slight oval quality about them when viewed from the side. On the treble side this oval slopes back slightly away from the pegbox, whereas on the bass the opposite occurs. This characteristic is also associated with Stradivari's violin and viola heads. From the square shoulders the pegbox sweeps back and then turns gracefully into the scroll, creating the image so well fashioned in Cremona of some gradually unfurling organic form. Without interrupting the flow of the pegbox into the scroll, the throat curls neatly up under the first turn. The chamfer that tops the pegbox flawlessly follows the same path.

Viewed from the front the pegbox is typically broad, especially at the throat where it ends in a sharp, square cut mortise that angles steeply back, driving deep under the scroll to allow maximum clearance for the D string. Although narrow at the top, the walls are substantial and on the inside they increase markedly in thickness towards the bottom of the box, which is consequently much narrower. The top edges of the walls are chamfered on the outside only. Unlike the work of most of Stradivari's s Cremonese colleagues, the inside of the pegbox is cleanly finished.

Above the pegbox the front profile of the scroll flares down and outwards towards the throat. Its path is mimicked by the second turn. This front view is typical of Stradivari and in a similar form it can also be seen on his violin and viola heads. On either side of the central spine the flutings, like the volutes, are pronounced but not deep. As they turn into the throat these flutings are tightly curved at the edges but flatten noticeably at the base of the excavation. Although these flat bottomed curves are repeated on the back of the pegbox, the flutings become more rounded in section as they pass over the top of the head (at the narrowest point). Such curves characterise all Stradivari head flutings. Usually the special form of these flutings is most obvious at the chin where dirt and patina have collected in the tighter curves. On the 'Davidov' a minute craquelure marks the surface of these areas. Also on the back of the pegbox another varnish feature known as pinning can be observed, in which tiny pinholes caused by air bubbles appear in the varnished surface. This feature is relatively uncommon on Stradivari's instruments, but a renowned example of it can be seen on the 1741 'Vieuxtemps' violin by'del Gesus'.

Where the circle of the chin blends into the square shoulders of the pegbox, the stings that run into the flutings form straight rather than curved lines. The

LEFT the purfling mitres are beautifully crafted, the stings flat on the outside but curling tightly towards the tip on the inside
RIGHT a pinhole on the central spine marks the middle of the chin

chin itself is

a half circle the middle of which is marked by a pinhole on the central spine (this is not to be confused with the aforementioned pinning of the varnish). Two further pinholes are evident on this spine, one in the centre of the front profile and one on the back of the scroll, marking the point at which the pegbox begins to taper more markedly. These pinholes are the remains of Stradivari's preparatory drawing process (the method is described in Sacconi and other books). On several Stradivari cello heads many more pinholes can be detected. These are often set on an obvious scribe line running along the peak of the central spine. No such line is visible on this head.

Tool marks can be seen on virtually all Cremonese heads, even the cleanest of the Amati family. On some instruments, notably those of the Guarneri family, they are extremely obvious; on others they are so fine that it is virtually impossible to tell whether they stem from a gouge or a scraper. In this case and on most of Stradivari's heads tool marks are generally confined to the vertical surfaces of the turns (the bosses) and to some extent they can be seen in the flutings on the back of the pegbox. There are no visible tool marks on the flat surface of the volutes. Tool marks, by which connoisseurs often identify the hand of a particular maker, were probably not evident when most Cremonese instruments were initially varnished, even those carved in the wildest manner. Over the centuries, however, wear and patina have thrown these marks into relief. There is a slight dent in the lines of the pegbox profile, which appears to be the result of some mishap; possibly the head was clamped in a door or something similar.

Although the'Davidov's ribs are slab cut, they are beautifully worked and, unusually for a cello, show little sign of having warped. Only the upper bass rib has some cracking. This rib also has a slightly finer flame. Because the ribs are so well preserved there are still large quantities of varnish present. In the central bouts the varnish cover is almost a hundred per cent, with only minimal scratching. In places the rib varnish has an extremely delicate craquelure. Traces of Stradivari's scraper have been highlighted by the intense colour and thin nature of the varnish. Originally the bottom ribs were probably made from one piece, but they are now separated at the endpin by two lines of purfling with a 2.5mm maple strip inserted between them. The canvas reenforcement that Stradivari usually applied to the inside of his cello ribs has been removed. The overhangs of the back edge are still extremely even, but although this is generally a feature of clean Cremonese work, judging by the insert in the bottom rib some later restorer may have refitted the ribs with Stradivarian accuracy.

The two piece back, like the head, is of extremely fine growth and, unlike the ribs, is exactly quarter sawn. The flames, which descend slightly from the joint, are well pronounced and very even. However, as if to prove the natural origin of the material, a single rogue flame slashes across the upper half of the lower bouts on the treble side.

The back arching is low, flat and extremely strong. Barely more than 25mm in height, it spreads out to a very shallow fluting and a low edge. The deepest point of the fluting is centred along the line of the

purfling and in places where the edge has been worn down to the level of the purfling, it has disappeared entirely. (This is most conspicuous on the centre bout edging on the treble side.) As can be discerned from the poster drawing, the back arch is slightly distorted, a feature accentuated by the peculiarly flat nature of the arch. The highest point of the arch, both lengthways and crossways, is centred upon the position of the soundpost.

The corners are strong and by Cremonese standards fairly wide; nevertheless, both corners and edges appear delicate. For a Stradivari cello the purfling sits close to the edge at around 4mm. The purfling mitres are beautifully crafted, with stings have that peculiar Stradivarian characteristic of being flat on the outside while curling tightly towards the tip on the inside. Although the width, colour and quality of Stradivari's purfling varied in different periods, unlike many modern makers he used the same purfling for violins, violas and cellos. The 'Davidov' purfling blacks were well stained and they have retained their colour even where the surrounding wood has turned grey through sweat, dirt and wear. Traditionally the blacks are said to be stained pear wood. The white strips have fine splits, which many take to be a sign of poplar, but occasionally they have a hard, yellowish sheen. No serious scientific analysis has been made of the purfling wood used by Stradivari or any other Cremonese maker, and it may well be that all three strips were prepared from the same material. The 'Davidov' strips were certainly accurately prepared and although the whites appear slightly thicker this may be an optical illusion since under the calibrated lens they measure about the same as the blacks.

The 'Davidov' belly displays the Cremonese love of a wider grown spruce with thin but wellpronounced winter lines, especially for their cellos. Stradivari did experiment with ultra fine belly wood, mainly in the 1690s, but he later rejected this idea. The belly rings are altogether wider than those of the back; even in the centre they are rarely less than two millimetres apart and they begin to widen upon reaching the f holes.

Compliant with the back, the belly arch is comparatively low and flat and it remains full out to the shallow purfling channel. However, the belly is somewhat more distorted and has sunk slightly around the bridge area. Even so, the belly maintains strength through its form. In particular it remains strong and straight in the most vulnerable areas, beneath the tailpiece and fingerboard and in the cross arch above the f holes.

On the back, a single rogue flame slashes across the upper half of the lower bouts on the treble side

The f holes are outstanding. Their narrow, sharply curving bodies are cut in the Cremonese manner, with the knife held at right angles to the surface of the arching. Nevertheless, because of the flatness of

the arching, the bodies of the holes are noticeably less over and undercut than normal for Stradivari. At the top and bottom the bodies curl around, terminating in bold, perfectly round circles with welldefined wings. The upper wings converge slightly, echoing the style of Nicolo Amati. However, in contrast to Amati instruments, the wing points occur a little before the centre of the top arc. Normally Stradivari's wing points are fixed exactly at the apex of the top and bottom curves. This unusual detail is repeated, although less obviously, at the bottom curves, but here the lower wings revert to the parallel form more usually associated with Stradivari and even trumpet a little at the ends. Although not slavish replicas of each other, the f holes are optically extremely well balanced.

Illustrating the pristine condition of this cello, the edges of the f holes are still surprisingly sharp. The bass f hole in particular has next to no distortion or wear. In deference to the low arching, the wing flutings are shallow but well defined and as usual they blend into the arching above the f holes.

There are no visible markings around the f holes inside the belly, perhaps reflecting the lack of markings on the outer surface of the instrument. The inside work is typical of the strong, neatly finished structural work with which Stradivari's name is synonymous.

Many great recitals have been played upon this cello and today it must rank as one of the most valuable instruments not yet ensconced in a museum. It can only be hoped that there are many more magnificent performances lurking within its sturdy sides, ready to be coaxed out by the present owner and by future generations of virtuoso players.