

For this concert Richard Ormrod performs Bach's E minor partita from *Clavier Übung I* on an upright harpsichord or clavictherium, my copy of an 18<sup>th</sup>-century original now in the Brussels Musical Instrument Museum.



*Clavictherium by Albert Delin, 1751*

Recently retired, I had time on my hands so decided to return to my youth. When a graduate student at Harvard University in the late 1960s, I got involved in the so-called 'Boston School' of harpsichord building as a part-time apprentice. This diverse group of scholars and musicians, including a few drop-outs, hippies and misfits, passionately believed that early keyboard music, especially Bach's, could only be fully understood and realised when played on faithful copies of original instruments, built with solid wood (no metal frames, plywood or plastic), using mainly hand-tools and traditional methods. A radical idea at the time, this philosophy is now mainstream. After fifty years, my block-plane and spoke-shave were a bit rusty when I set up a workshop at our home near Aberdyfi.

The clavictherium (literally a 'keyed kithara' or lyre) is like an upright piano, except the soundboard and strings tower above the player's head. It is said to be the most difficult of all harpsichords to build because of its action. The strings of a normal harpsichord run parallel to the floor and are plucked by jacks which rise up at the end of the keys and return by

gravity. Nothing could be simpler. In the clavicytherium, however, the jacks must travel horizontally and need to be linked to the vertically moving keys by some sort of extra mechanism. The challenge is to make an action which is comfortable, not too heavy and with fast enough repetition to cope with all the trills and ornaments which characterise baroque music. The huge technical demands of Bach's monumental 6<sup>th</sup> partita set the severest test for both harpsichord and harpsichordist.

The earliest surviving harpsichords (from the late 15<sup>th</sup>-century) are in fact clavicytheria, but they never caught on and were soon overtaken by horizontal grands. The problem with the action was finally cracked in the 1750s by the Flemish genius Albert Delin, whose clavicytheria are highly regarded. They were designed for a domestic drawing room (but with a high ceiling!) and take up less floor space than a small side-board. But Delin refused to compromise: these are big, heavy instruments designed to envelop the player in sound. Two harpsichordists of my acquaintance who were allowed to play the Brussels clavicytherium when it was still possible to do so reported that it was very loud, with a pungent but appealing tone. That settled it. Becoming deaf, I had to try to make a harpsichord I could hear.

After closely examining the Brussels instrument, I started from scratch with a stack of rough-cut timber: poplar and lime-wood for the case, frames, keyboard and action (much of the instrument, in fact); Alpine spruce for the soundboard; beech for the bridges; rock maple for the pin-block; Gabon ebony (not on the CITES list of endangered species) for the keyboard touch-plates; sycamore for the accidentals, which were capped with camel bone. First I made the curved side of the case, which was glue-laminated from thin slices of lime. This looks more difficult than it is.



*Step 1: bending the case side in a jig*

With the basic carpentry completed, I then made the keyboard from a lime-wood panel on which the keys were drawn out before being sawn apart.



*Mounting the keys on their pivot pins*



*Finished 'reverse' keyboard with ebony naturals and bone (not ivory, honest!) sharps*

To match the curve of the case, the beech bridge was cooked in a steam-box and then dried for a fortnight in a bending mould.



*The bridge over which the strings will be stretched is bent to shape*

The bridge was then glued to the spruce soundboard using old-fashioned bow clamps. The soundboard gives the instrument its voice and must be accurately planed: too thick, the tone will be dull; too thin, it will sound great at first and then implode.



*Bridge being glued to the soundboard with bow clamps*

In many respects, Delin was a traditionalist; what I had built so far was a typical Flemish-style harpsichord of a hundred years earlier. But the *action* is a product of the latest Enlightenment technology. As a cross-section model shows, the delicately balanced mechanism converts the vertical key-stroke into the horizontal motion of the jack.





*A cross-section of Delin's action*

Though brilliantly designed by Delin, the action of my clavicytherium required hundreds of hours to make and regulate.



*The completed action viewed from the back of the instrument*

I tried, within my abilities, to produce an exact copy of the original, except for the decoration. Instead of covering the soundboard with flowers as Delin did, my wife, Rhian Samuel, who will be known to members of the Rhyl Music Club in another capacity, painted a lovely

wreath around a gilded rose made by Sarah Beare. By the way, Rhian came up with the design before anyone knew what the coronavirus looks like.



*Finishing touches*



*The completed instrument*

Delin's surviving clavictheria are now in museums and can no longer be played, so it is difficult to say how close I have come to their original sound. But with strings plucked a few inches from one's head and their vibrations transmitted to the fingers from the keys, one feels an extraordinarily close, almost harp-like connection between the instrument and the music. When Richard was making this recording, he said he felt completely enveloped in sound. As you will hear in his performance of the 6<sup>th</sup> partita, he brilliantly ascends this Mount Everest of baroque music.

*Curtis Price*