

Case study  
The restoration  
of the  
1755 John Snetzler Organ  
at  
Clare College Cambridge

Keyboard & Action

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## Keyboard

The keyboard in this organ is fixed, as opposed to the sliding keyboards more common in the chamber organs in the later 18<sup>th</sup> century. For purpose of protection the keyboard has a sliding removable cover. The cover was in a sorry state but the condition of the keys showed that the organ was cared for. Very little wear or damage was noticed. It has been beautifully made, using top quality materials.

Keyboard and rollerboard prior to dismantling (note the iron thumper rail)



The keys show minimal wear



A groove in the side of the cheek takes the sliding cover



The guide, and balance pins are all of brass and didn't need much attention apart from cleaning. Latterly the keyboard had acquired a large amount of cardboard and red cloth washers under the balance point of the keys. Also a thick cushion of felt had been inserted under the front. On closer inspection, under all the washers, two gut cables were found, like the ones which are employed for clock weights.

The Cloth and cardboard washers which had been inserted were found to compensate for a warped balance-pin rail (3mm down in the middle).

Washers on top of gut cable



The Gut cable serves as a fulcrum for the keys.

Gut cables anchored in front of the balance-pins with small brads under quite some tension



The balance rail shows a severe bend



The bend in the balance rail had to be corrected without disturbing the pins and original gut cables. This was done by making substantial grooves in strategic places along the bottom of the rail, into which new wooden slats were glued while the rail was kept straight.

Four new pieces of oak were inserted to straighten out the balance rail



There was some wear on the balance and guide pins which was taken up with vellum where the oak of the key had worn away. The keys were now put back straight on the gut cable, with a new cushion made of felt covered with leather (flesh-side up) under the front. One question remains about the thumper rail. It is a reasonably modern addition. There are no pockets in the key cheeks for it to be positioned in, but it is kept in position with obviously modern pins.

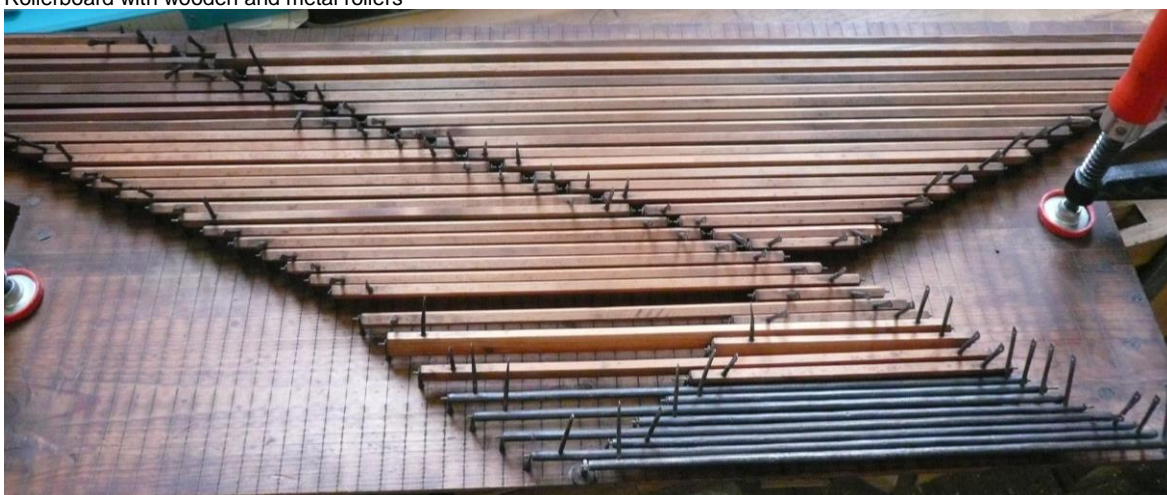
There is an extra rail in the key frame under the tails of the keys, but there is no evidence that this was ever used to catch excessive movement of the keys. The cross rail over the keys was originally un-fixed to the box-structure hiding the rollerboard, and could have been used to catch the keys. There are 10 nail holes in the bottom edge of this rail, one of which square in section, suggesting a cushion was fixed to this to catch the keys. This rail however, is now screwed in place. Could we conclude that the original arrangement caused rattle against the box structure above the keys, and therefore was changed to the latterly more conventional thumper rail? We will possibly never know. By lack of evidence and other suggestions, we decided to maintain the present thumper rail.

The rollerboard was in a good condition and only required cleaning and some repair. The treble corner had been sawn out to make space for the altered wind trunk. The piece of wood had not been thrown away and was found in the bottom of the organ under the bellows. This piece was glued back to restore its original form.

The once removed corner is glued back where it belongs



Rollerboard with wooden and metal rollers



The back-board and the majority of rollers are of fine grained pine, roller studs and arms of steel and pivots of brass. The lower end of the rollerboard is pushed forward by the backfall beam, putting it at a slight forward angle. The rollerboard is fixed to the bottom of the soundboard with two small iron brackets. Most of the rollers are of finest grade pine and planted at a fine spacing. There are 8 steel rollers because of space considerations.

### Backfall Beam

The backfall beam was in a reasonable condition and only needed minor repair and cleaning. The pivot was removed, cleaned, straightened and put back in.

Beautifully made, oak beam with fine grained pine levers



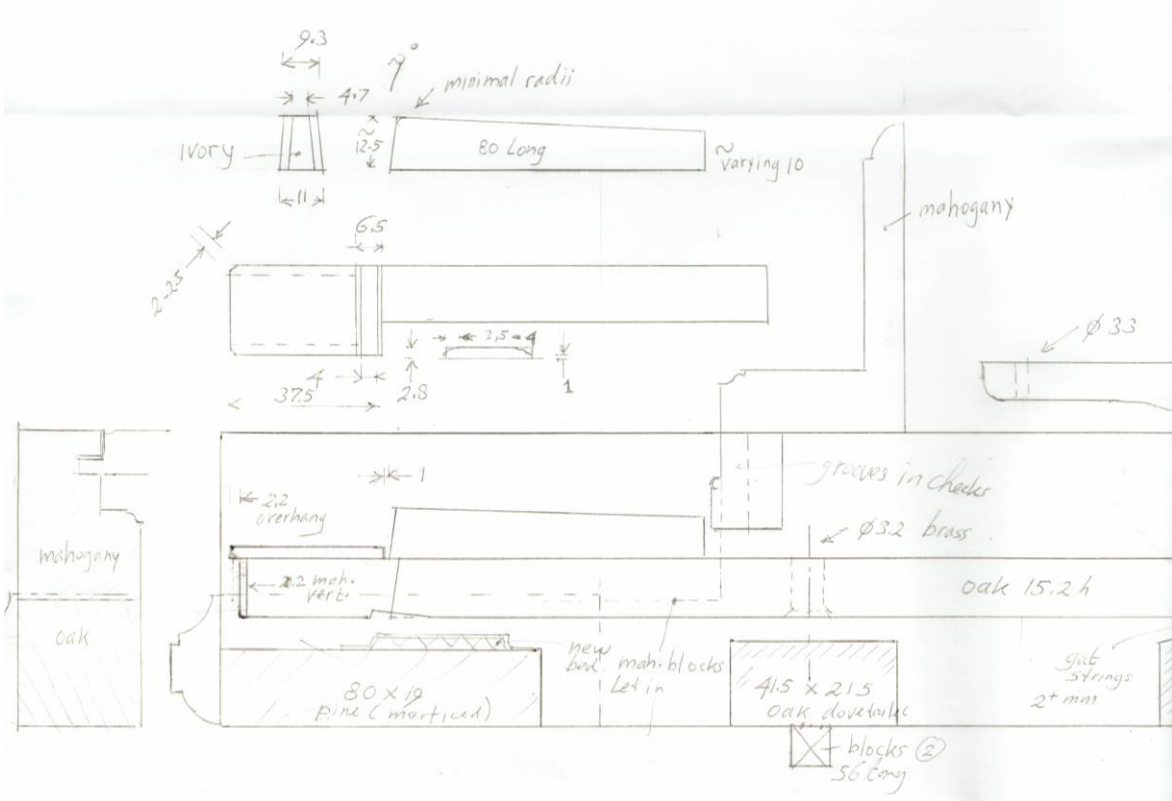
Both sides of the beam are covered with a thick vertical grain (fruit wood?) veneer which is slightly proud of the surface of the slots. One presumes this was done to minimise friction.

Dismantled backfall beam showing a fractured division and the veneer glued onto the sides

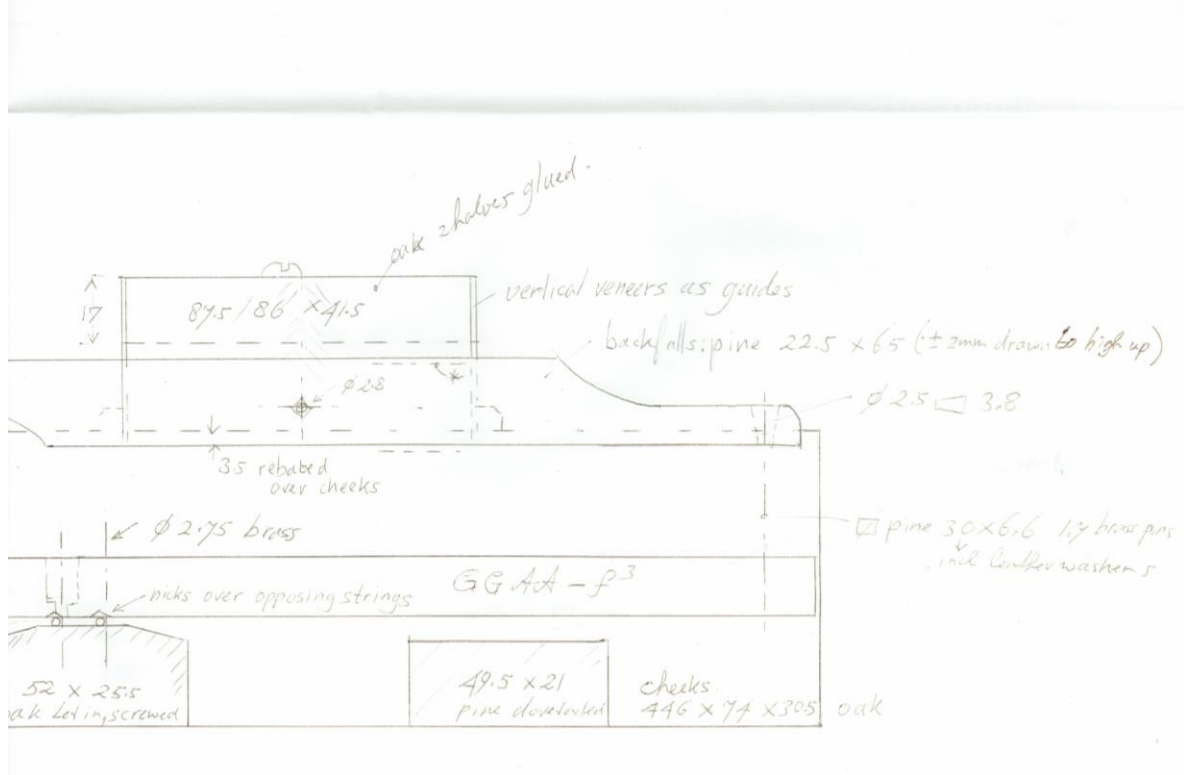


# Cross section keyboard and backfall beam

Front end



Rear end



## Stop and swell action

The pivot boards for the trundles have a secondary function to hold together the front and the back of the lower case. They are dovetailed into the applied cross rails fixed to the inside, against front and back panels at keyboard support level. The dovetails were rather sloppy and were tightened up by packing them out with card. The pivots in the stop action have more tolerance than usual in later work. The sword-ends have considerable tolerance in the slider-ends, making the relatively sloppy fit of the trundles into the pivot board unimportant. The draw of the stops, (60 – 67mm in the bass stops and 52 – 60mm in the treble stops) is considerably long not to notice the tolerance. There is no reason to believe that this tolerance is not an original feature (the pivot holes are still round)..

The sword pivot beam on the bass side required attention because the old screws had been replaced with modern ones. On the treble side the original screws survived and the fixing was secure.

Example of original domed headed screws used in construction of the organ (in this case in the swell front)



The swell front was made to run smoothly, and an added weight on the top lever was maintained as it reduces the force needed to open the box (fragile mechanism). The lower lever was latterly fixed to the top of the bellows valve board. This lever was again fixed to the top after having glued on a wedge shape section to compensate for the restored angled position of this valve board. The trace rod had to be lengthened because of this slightly higher position. We chose to do this in a reversible way by adding a new section to the old. The upward trace rod (not original) was shortened.

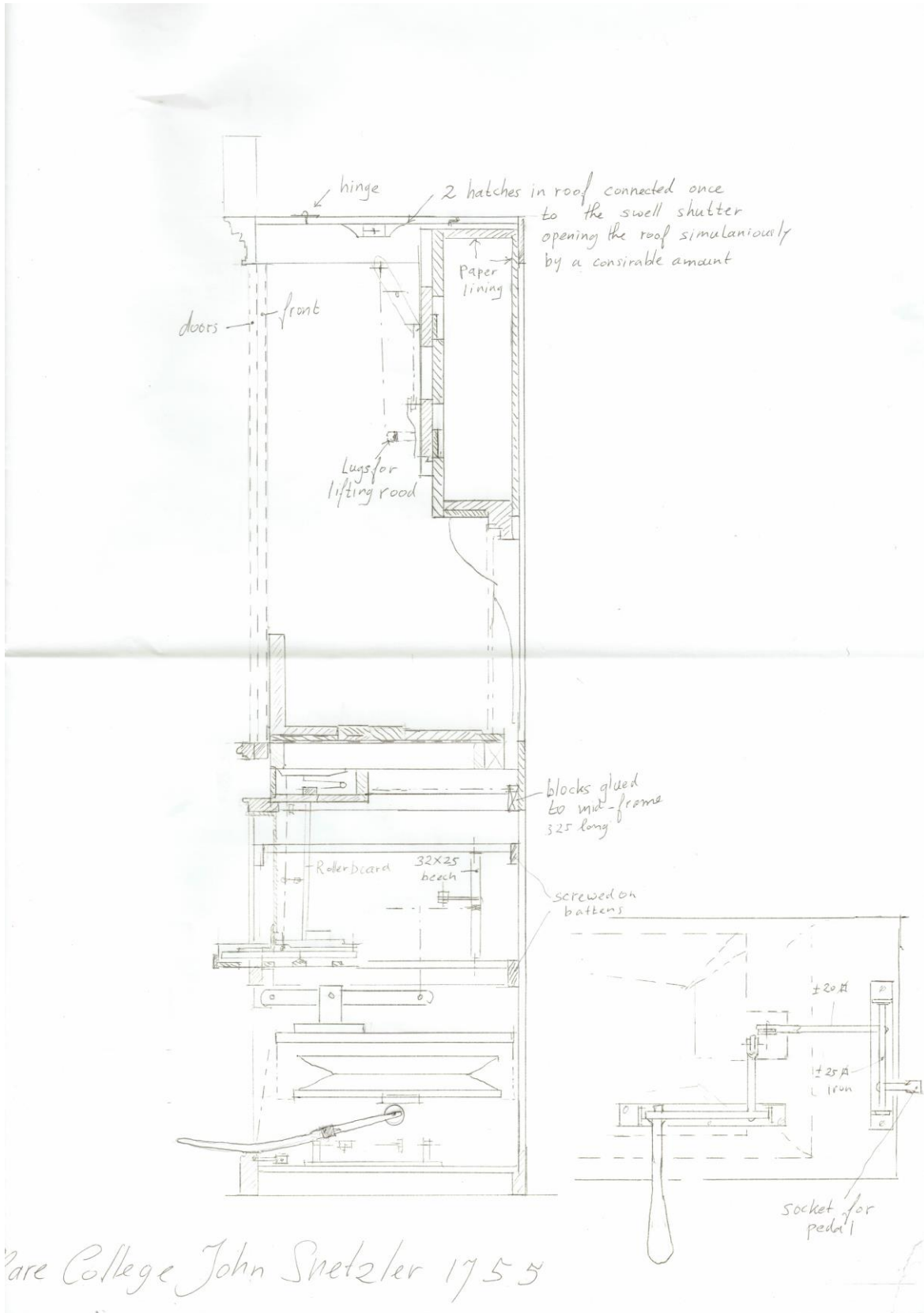
Lengthened lower swell trace rod



Repaired swell pedal lever reinforced against back



Cross section side + pumping pedals



Cross section front

