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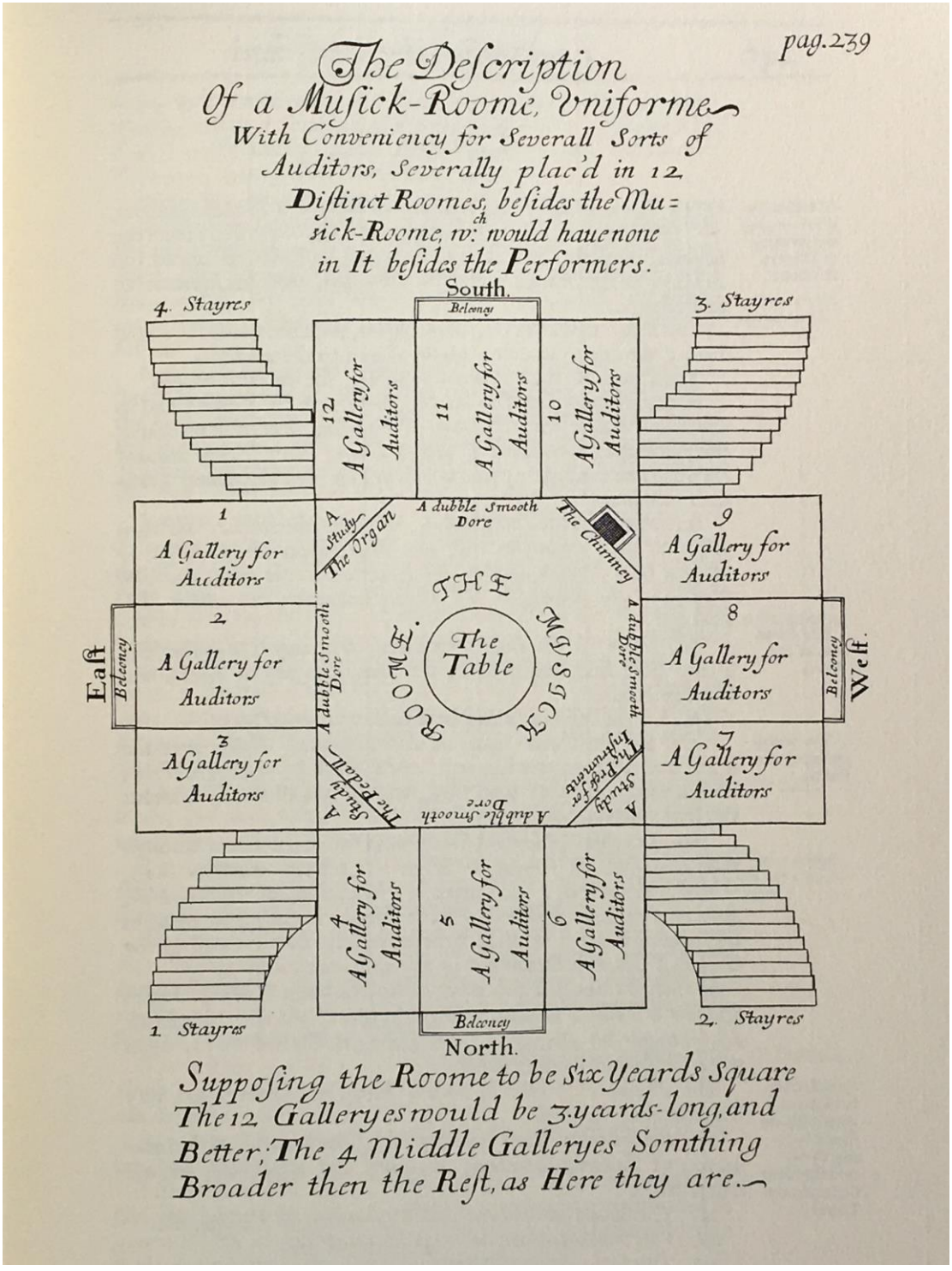

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NEW TABLE ORGAN: A RECONSTRUCTION OF THOMAS MACE'S 'VERY-VERY-JEWEL' 1676

Dominic Gwynn (Welbeck) April 1st 2020

This organ is a reconstruction of the 'table organ' described by Thomas Mace in his 'Musick's Monument' of 1676. It follows the few details given by Mace, including the overall dimensions of the case.

The stop list is

Open Diapason	8ft	C – F# stopped wood; G – c^3 open wood
Stop Diapason	8ft	C – c^3 stopped wood
Principal	4ft	C – c^3 open wood
Twelfth	2⅔ft	C – c^3 open wood
Fifteenth	2ft	C – c^3 open wood
Twenty-second	1ft	C – c^3 open wood, breaking back to 2ft at $c\#^2$
Voice Humane	8ft	C – b^o Regal / c^1 - c^3 Hooboy

All the flue pipes are made of pine, with oak blocks, tuning stoppers and caps. The Open Diapason shares its lowest seven pipes with the Stop Diapason, for strength of tone and speed of speech. The Twenty-second is a 1ft to c^2, breaking back to 2ft, because the smallest treble pipes are so difficult to make and voice.

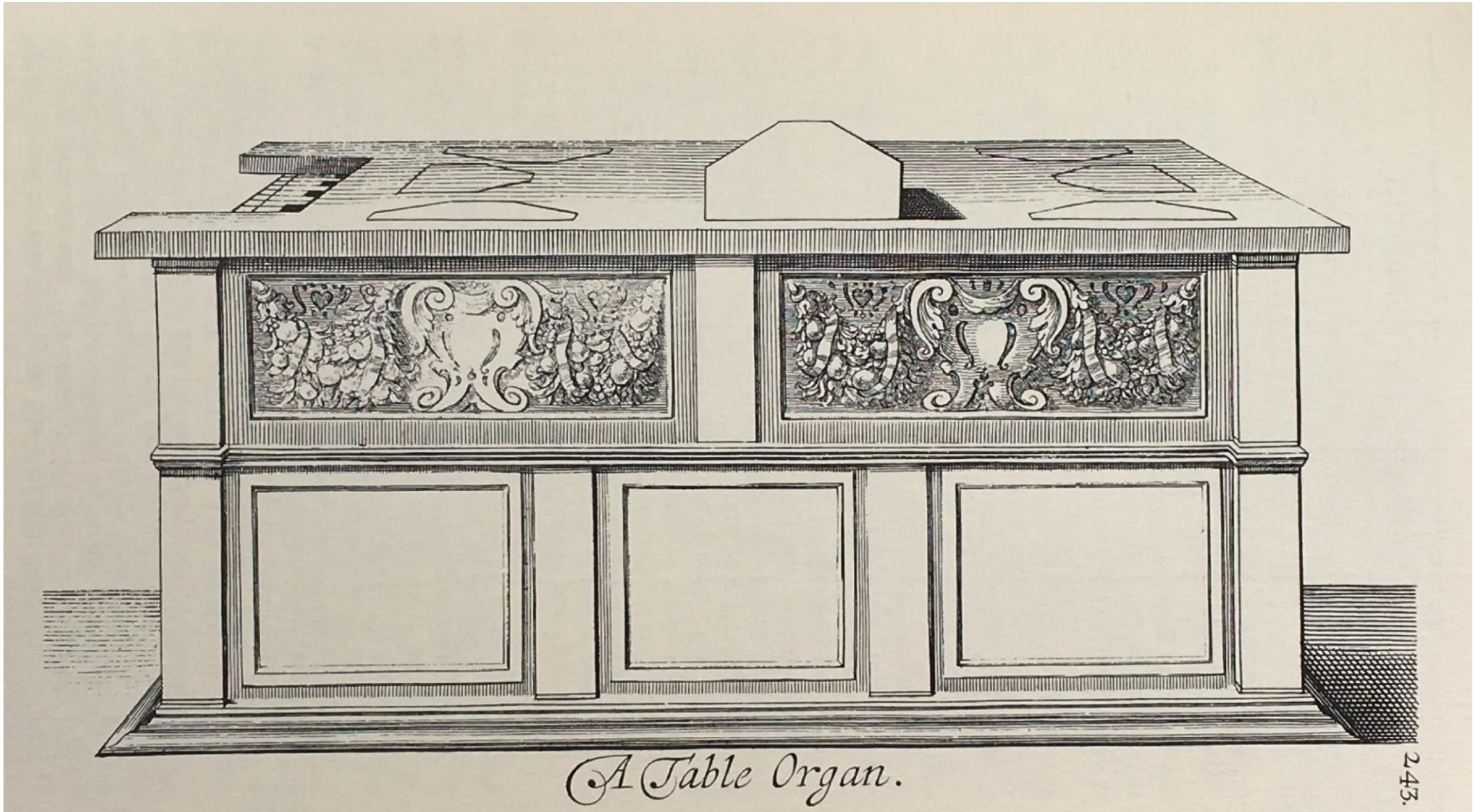
According to Mace "there is likewise for a pleasure and light content a Hooboy Stop, which comes in at any Time, with the Foot; which Stop, (together with the Regal) makes the Voice Humane". There has been some controversy about the meaning of this passage. I eventually decided it meant no more and no less than what it says, that there is a Hooboy in the treble (with the compass of the musical instrument which it imitates), and a regal in the bass, similar to the stop which eventually became a Vox Humana, with a one foot resonator at C, with a pierced disc soldered to the top. Together they make the Voice Humaine.

The Hooboy can be controlled by the player with his foot. As there are also stop knobs, I have supplied the foot pedal with a second slider. Mace does not mention any other pedals, but in the same spirit as the Hooboy pedal, and the harpsichord with its pedals, I have provided a separate shifting movement as well, so that the foot can reduce the registration chosen to the Diapasons, and back.

The key compass is C AA D to c^3 (49 notes). The keys can be moved so that a^1=415Hz and a^1=466Hz are available. The stops divide into bass and treble stops at b^o/c^1 at a^1=415Hz (and $a^o/a\#^o$ at a^1=466Hz). The tuning could be a variant of 1/6th comma meantone, usable at both pitches. The keys are covered with ebony and bone (instead of ivory): probably ebony naturals and bone sharps.

"The Bellow is laid next the Ground and is made very Large and driven either by the Foot of the player, or by a Cord at the far end." It looks as if there is a reservoir, wedge-shaped at this date, with a feeder lifted by a pedal. An electric blower for practicing or anxious players is included in the estimate.

Casework; "all of the best sort of wainscot" according to Mace, but I have estimated for painted or varnished pine or cedar, for lightness. Outside dimensions, excluding mouldings:
length ft 5ins (226cm) width 4ft 3ins (130cm) height 3ft 0ins "or better" (92cm)



A Table Organ.

243.

Thomas Mace *Musick's Monument* 1676
Chapter III, p242

There is yet one *Thing* more, which I will Propose, in Reference towards a more Absolute Exactness, and Compleatness, in setting off the Musick; and in making It more Even, and Distinctly Equal, viz. Suppose the Organ to be so Contriv'd, as to be Plac'd in the midst of the Room, and serve instead of the Table,; also I conceive, (nay I know, in that I have made Experience of the Thing) It would be far more Reasonable, and Proper, than an Upright Organ.

Because the Organ stands us instead of a Holding, Uniting-Constant-Friend; and js as a Touch-stone, to try the certainty of All Things; especially the Well-keeping the Instruments in Tune, &c.

And in This Service the Organ should be Equally Heard to All; but especially to the Performers Themselves, who cannot well Perform, without a Distinct Perceivance Thereof.

The Organ standing in the midst, must needs be of a more certain and steady use to Those Performers, than if It stood at a Distance; They all Equally Receiving the same Benefit, no one more than another; whereas according to the constant Standing of Upright Organs (at a Distance from the Table, and much Company usually Crowding between the Organ, and Table of Performers) some of Those Performers, who sit farthest off, are often at a loss, for want of Hearing the Organ, so Distinctly as they should, which is a Great Inconvenience. And if It be so to the Performers, It must needs be alike Inconvenient, or more, to Those Auditors, who sit far from the Organ.

But This Device of a Table Organ, sends forth Its Notes so Equally alike, that All, both Performers, and Auditors, receive their just, and due Satisfaction, without the least Impediment; the Organ in This Service not being Eminently to be Heard, but only Equal with the other Musick.

Now as to the Description of This Table Organ, I cannot more conveniently do It, than first in giving you a View of It, by This Figure here Drawn, and then by telling you all the Dimensions, and the whole order of It, (I mean my Second, which is the Largest, and the Best.) And take as Here followeth.

Two of such Organs only, (I believe) are but as yet in Being, in the World; They being of my own Contrivance; and which I caus'd to be made In my own House, and for my own Use, as to the maintaining of Publick Consorts, &c.

I did also Design the Erecting of such a Musick Room, as I have described; But it pleas'd God to Disappoint, and Discourage me, by Disabling me several ways , for such a Work; as chiefly by the Loss of my Hearing, and by that means the Emptiness of my Purse (my meaning may easily be guess'd at) I only wanted Money enough, but no Good Will thereunto.

It is in Its Bulk, and Height, of a very Convenient, Handsom, and Compleat Table-Scize; (which may Become, and Adorn a Noble-Mans Dining Room) All of the Best sort of Wainscot.

The Length of the Leaf 7 Foot, and 5 Inches.

The Breadth 4 Foot, and 3 Inches.

The Heighth 3 Foot, Inch, and Better.

Beneath the Leaf, quite Round, is Handsom Carv'd, and Cut-Work, about 10 Inches Deep, to let out the Sound: And Beneath the Cut-Work, Broad Pannels, so Contriv'd, that they may be taken down at any time, for the Amending such Faults as may happen; with 2 Shelv'd Cubbords at theEnd behind, to Lock up your Musick Books, &c.

The Leaf is to be taken in 2 Pieces at any time for conveniency of Tuning, or the like, Neatly Joyn'd in the Midst.

The Keys, at the upper End, being of Ebony, and Ivory, all Cover'd with a Slipping Clampe, (answerable to the other End of the Table) which is to take off at any time, when the Organ is to be us'd, and again put on, and Lock'd up; so that none can know it is an Organ by sight, but a Compleat New-Fashion'd Table.

The Leaf has in It 8 Desks, cut quite through very Neatly (answerable to that Up-standing One, in the Figure.) with Springs under the Edge of the Leaf, so Contriv'd, that they may Open, and Shut at Pleasure; which (when Shut down) Joyn Closely with the Table-Leaf; But (upon occasion) may be Opened, and so set up, (with a Spring) in the manner of a Desk, as your Books may be set against Them.

Now the Intent of Those Desks, is of far more Excellent use, than for mecr Desks; For without Those Openings, your Organ would be but of very Slender use, as to Consort, by Reason of the Closeness of the Leaf; But by the Help of Them, each Desk opened, is as the putting in of another Quickning, or Enlivning Stop: so that when all the 8 Desks stand open, the Table is like a little Church Organ, so Sprightfully Lusty, and Strong, that It is too Loud for any Ordinary Private use: But you may Moderate That, by opening only so many of Those Desks, as you see fit for your Present use.

There are in This Table Six Stops.

The first is an Open Diapason; The Second a Principal; The Third a Fifteenth; The Fourth a Twelfth; The Fifth a Two and Twentieth; And the Sixth a Regal.

There is likewise (for a Pleasure, and a Light Content) a Hooboy Stop, which comes in at any Time, with the Foot; which Stop, (together with the Regal) makes the Voice Humane.

The Bellow is laid next the Ground; and is made very Large, and driven either by the Foot of the Player, or by a Cord at the far end.

Thus I have given you a Short Description, of This most Incomparable, and Super-Excelling Jnstrument; not doubting, but when It is well Ponder'd, and Consider'd upon, It will be approved of, and brought into Use.

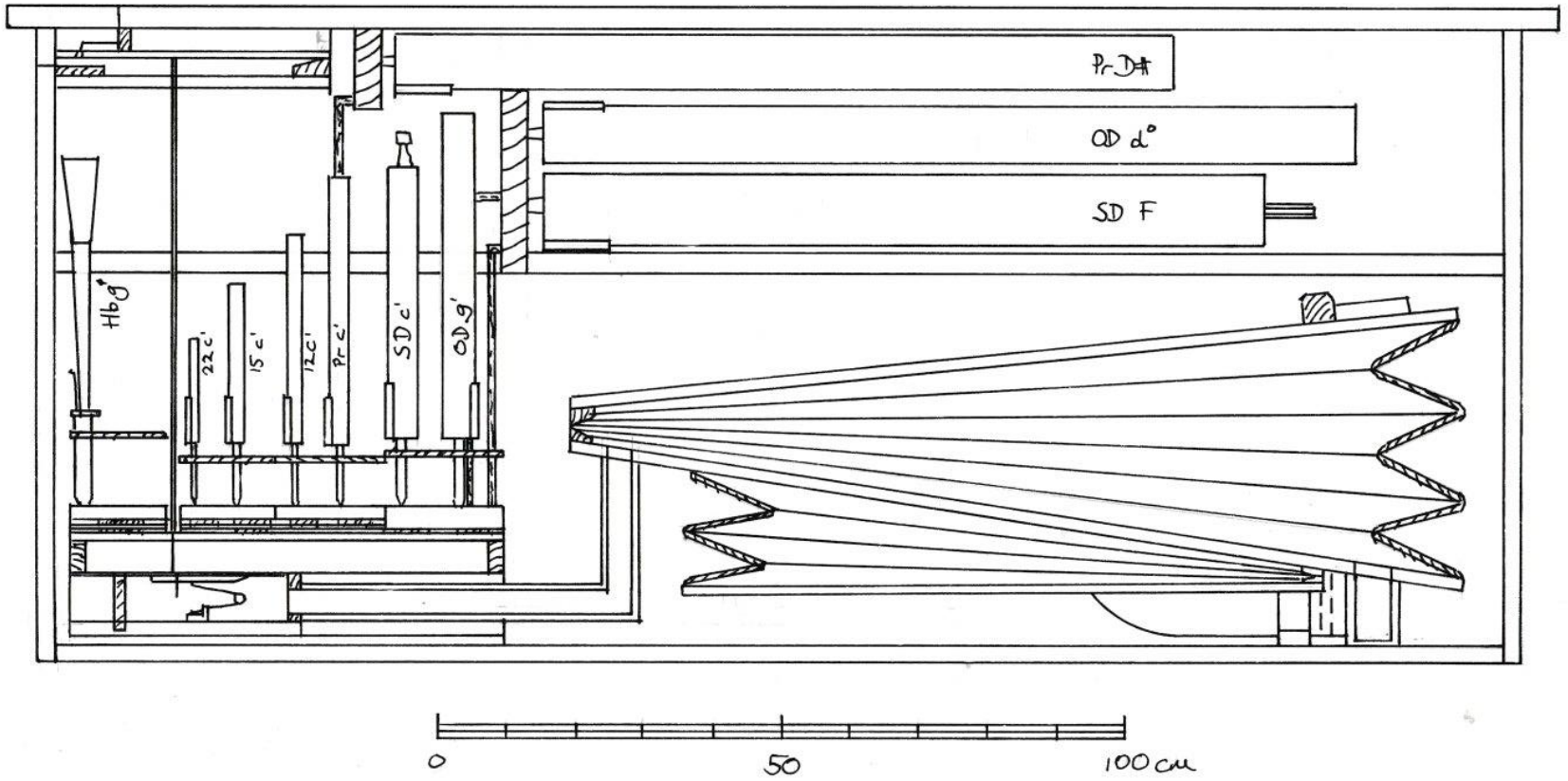
And, if any Person (upon the Reading of This Description) shall be Desirous to Purchase such an Instrument; I believe, I can Procure for him the Very Same, which I have Thus Described, &c. For my Unhappiness has been such, (by Reason of my Deafness) that I have (of Late Years) parted with It; and It is (at This Time, I think) to be Sold; so that if any Person send to me about It, I shall do him the Best Service I can in It: And indeed It is a Very-Very-Jewel.

Your Pedal, and Organ, being Thus Well Fix'd, the next is, to Furnish your Press with Good Instruments: But first see, that It be Conveniently Large, to contain such a Number, as you shall Design for your Use; and to be made very Close, and Warm, Lyn'd through with Bayes, &c. by which means your Instruments will speak Livelily, Brisk, and Clear.

Thomas Mace Table Organ

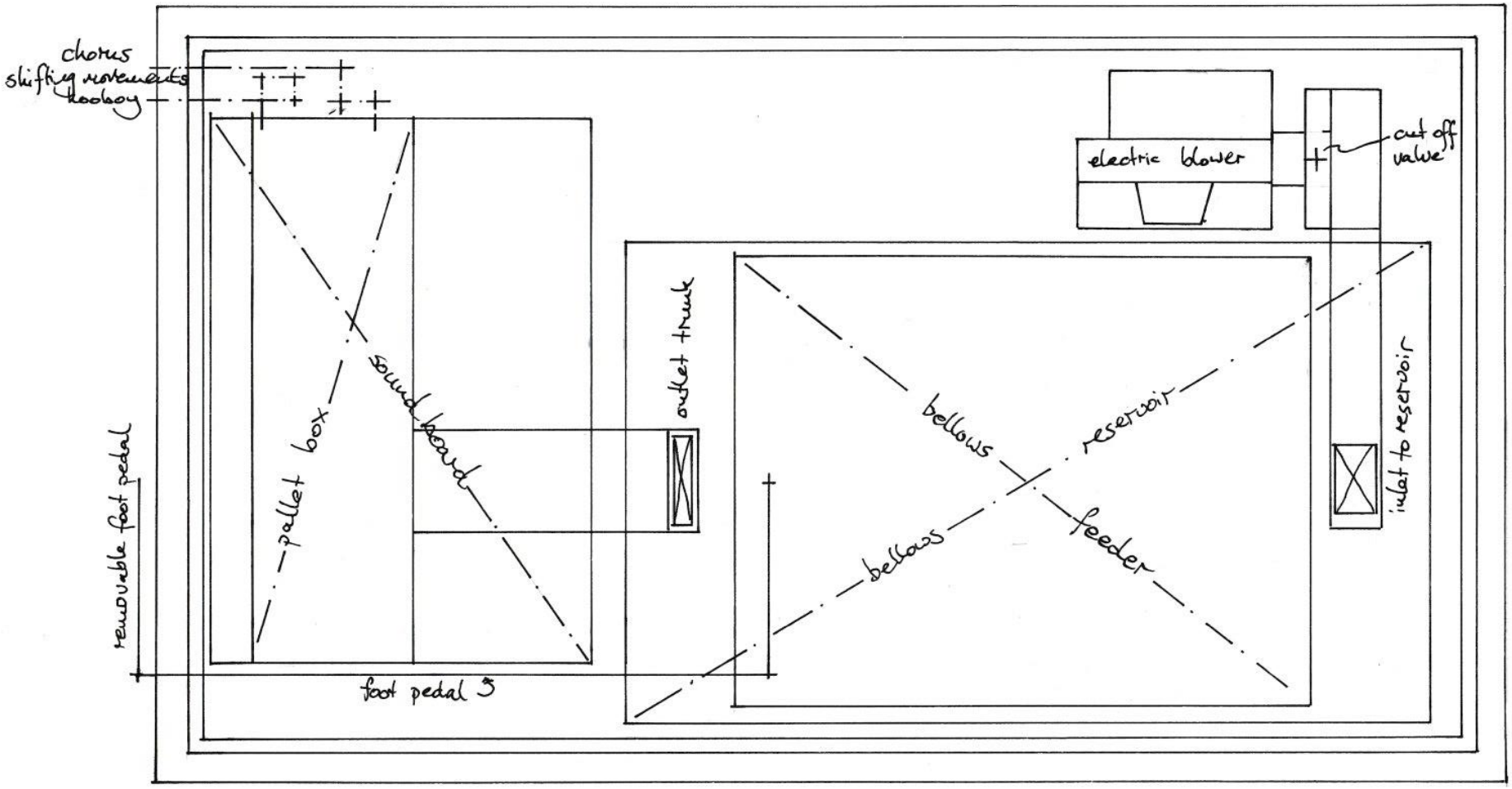
Section through centre line 1:10

Dominic Gwynn Welbeck March 2020



Thomas Mace Table Organ

Wind system: plan 1:10



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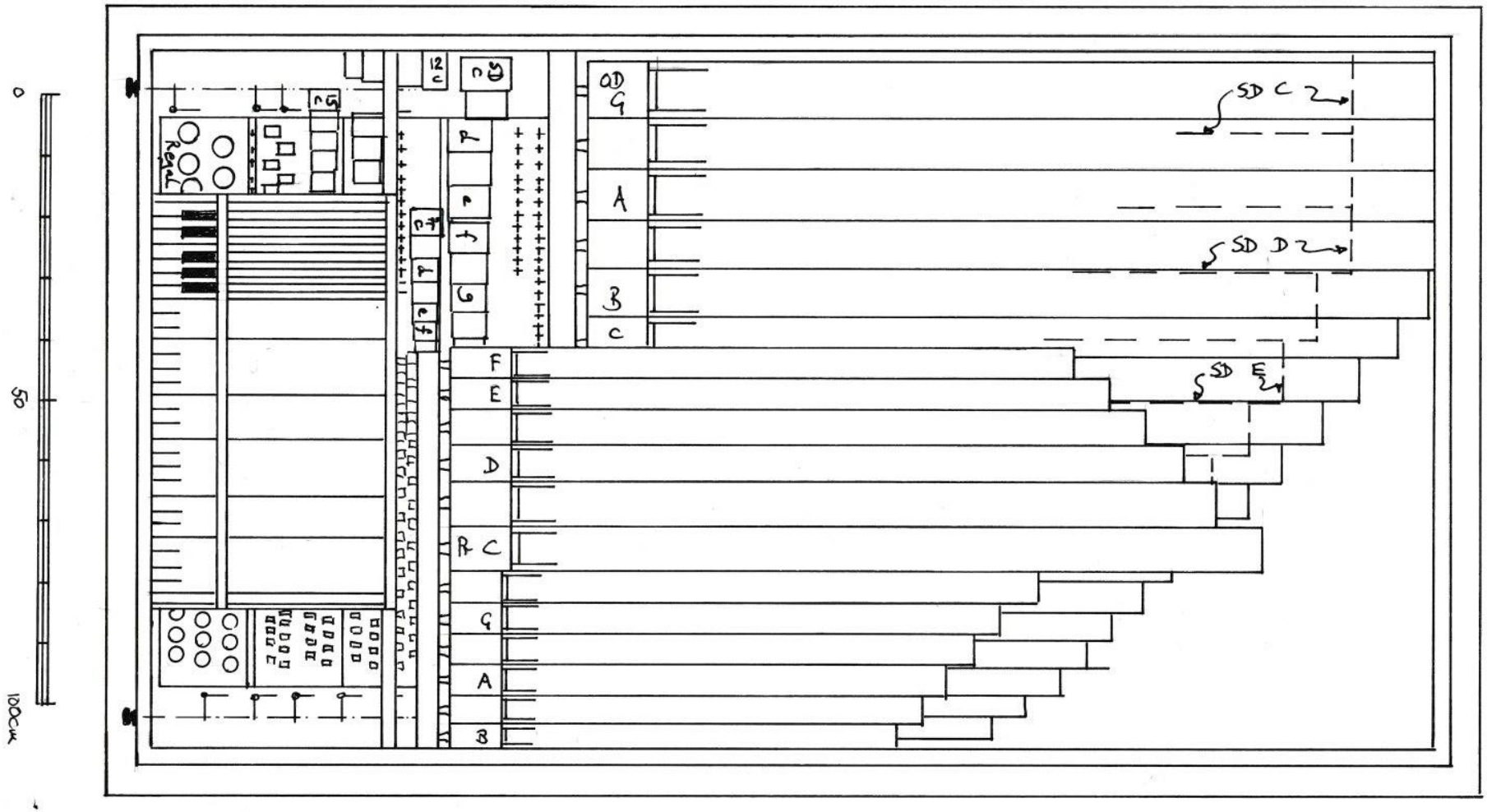
Thomas Mace Table Organ

Plan 1:10 Looking from above with the lid removed



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LAYOUT

The overall dimensions, and the stoplist are given by Mace. Otherwise there is not much of a clue about the design of the organ, but he specifies one or two elements which restrict the possibilities, and the organ ends up fitting the case very nicely. The "Bellow is laid next the Ground; and is made very Large", which means that most of the larger pipes have to be laid horizontally above it. There is some choice about the height of the wind chest and the number of vertical pipes, but I decided that the wind chest should stand on the base frame of the organ, with as many vertical pipes as possible (the longest 2ft or 60cm long). In order to tune the Voice Humane, it is sensible to have it in front of the key action stickers, which means that the keys need to be long.

In themselves these decisions determine the layout of the organ. The 1579 claviorganum by Lodovicus Theewes is laid out differently, with the wind chest, all the pipes, and all the key and stop action, in the top half of the case, and three wedge bellows in the bottom half. The organist would not be able to control that old-fashioned arrangement of the bellows by foot, as Mace (1676) suggests he should, so the bellows reservoir-with-feeder arrangement is logical. The horizontal organ made by Samuel Green in 1774, now at Hanbury Hall in Worcestershire, has a similar arrangement to this design, but with a smaller bellows system, mainly because the organ is based on a re-used harpsichord case, the bent side tapering to a narrow tail. The horizontal organ made by Robert and William Gray for Burghley House Northamptonshire in 1790 is similar, constrained by being shaped like the fortepiano purchased at the same time.

SPECIFICATION

There is one departure from Mace's stoplist - a Stop Diapason, which was the usual unison rank in these 17th century chamber organs. The Open Diapason has to have stopped pipes from C to F#, not so much because open pipes would not fit, but because they would be very quiet and without speech, so the Stop Diapason C to f# pipes are shared between the two Diapasons. The two unison stops, separately or together, will add some of the variety that Mace was looking for, to express the 'humour' of the music.

And for the same reason, there will be the pedal specified by Mace for the Hooboy (a separate slider, so that the pedal brings on the Voice Humane, though the Hooboy on its own can be chosen at the stopknobs). The chorus has a separate slider for a shifting movement, so that the registration can be varied from full chorus (if chosen at the stopknobs) to one or both of the Diapasons, and back again, by foot pedal "as quick as thought" as the originator of the idea claimed.

The Hooboy seems to have been a new organ stop in the 1660s, not imitated elsewhere in Europe at the time. Mace specified "*... for a pleasure and light content a Hooboy Stop, which comes in at any Time, with the Foot; which Stop, (together with the Regal) makes the Voice Humane*". In 1668 Thomas Harris made a 4½ stop organ, probably a chamber organ with a C AA D to c^3 compass and at consort pitch, with "*...a Hoyboy halfway*". The Revd. James Talbot, in his collection of material for a book about musical instrument in the early 1690s, mentioned the "*Hautbois which is a half-stop from the middle of the Keys upwd*".

Talbot is the only person to describe it: "*Hautbois Schalmei is Unison to the Open Diapason its taper as the Trumpet but wider above, having a Roor between the reed & the Body Roor & Reed differ in length according to the Pitch of the pipe the Body is of the same length in all - the Roor enters an inch within the Body*". The 'roor' seems to be the shallot, the 'body' seems to be the block. The description may describe a resonator with a double cone (as Oboes have always had in England), though it is not clear. In any case it seems sensible to copy the earliest surviving Hautboy in an English organ, for the 1730s chamber organ now at Kedleston Hall Derbyshire. The regal at

the time was likely to have been what contemporaries recognised as the Vox Humana, like the earliest surviving English example at Adlington Hall c1693.

In the same pursuit of variety the stops will be divided. The usual division before the early 18th century was $c^1/c\#^1$, but the Hooboy starts at c^1, like the instrument itself. Unfortunately the division would be two semitones lower at the higher pitch. The point of dividing the stops is partly to increase the variations available, but also to provide registrations for the fashionable organ music of the time, with solo registrations accompanied by the left hand. Mace says that "when all the 8 Desks stand open, the Table is like a little Church Organ, so Sprightfully Lusty, and Strong, that It is too Loud for any Ordinary Private use: But you may Moderate That, by opening only so many of Those Desks, as you see fit for your Present use." I would be surprised if this organ with its wooden pipes is that loud, and I would be surprised if opening and closing the music desks has as much effect as Mace claims, since the six removable panels in the upper case are pierced and carved. However, the organ was obviously thought of by Mace as a solo instrument as well as for accompanying viols and voices.

PITCH AND TUNING

This organ has two pitches, consort pitch (a^1 = 415Hz) and church pitch (a^1 = 466). The consort organ has two extra pipes for each octave, to accommodate the meantone tuning when the pitch is changed. But I think this organ is too complicated for that, especially the larger horizontal pipes.

I would consider either a meantone tuning, with good (not pure) major fifths (say one sixth, or even one eighth comma), and a divided wolf fifth (usually g#-eb), which was a usual tuning with English church organs, or even equal temperament, which is convenient for playing with stringed instruments, but was never used for keyboard instruments at this period. I would prefer a modified meantone tuning at the two pitches, to retain a difference in timbre for different chords, and the difference in the size of semitones which gives melodic interest. Mace would have approved of its contribution to the 'humour' of the music.

With this organ, even more than the consort organ, I would try to tune it as little as possible, though tuning flaps will be provided. Mace says that one can tune by removing the top leaf, in sections. It is possible that the tuning is quite predictable, with the pierced carved panels round the sides, but the top leaf will shade the horizontal pipes, which will upset the tuning and make it more difficult. Tuning could be a difficult business, particularly for the horizontal pipes.

MECHANISM

The stop knobs are divided on either side of the player, with the bass on the left and the treble on the right, but with the Stop Diapason and Open Diapason on the right, where there is space for the stop action. In the wind chest the stop action sliders are on top, and the shifting movement and Hooboy sliders underneath, with a 'false upperboard' between, so that the stop knob mechanism come from above (indicated with dash lines on the plan drawing looking from above), and the mechanism from the pedals from below (similarly indicated on the drawing of the wind system).

The bellows reservoir is 1350mm x 810mm. It has a feeder underneath which can be pumped by foot by the player (pedal on the treble side, under the player's right foot), or by electric blower. The size of the case allows for a larger bellows than is usual in an upright chamber organ, and still leaves space for an electric blower (and incidentally, space for the Open Diapason G to A# and the Stop Diapason C to D to be mitred downwards).

Dominic Gwynn (Welbeck) April 20th 2020