

Quarterly No. 94, January 1999

FoMRHI Quarterly

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FELLOWSHIP OF MAKERS AND RESEARCHERS OF HISTORICAL INSTRUMENTS

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FELLOWSHIP of MAKERS and RESEARCHERS of HISTORICAL INSTRUMENTS

Bulletin 94

January 1999

A Happy New Year to just over half of you as I write – I hope to rather more before Eph sends this off because otherwise a lot of people aren't going to get their Q till April!

Barbara Stanley sent me a note in early November that her email had changed to b.stanley@net.ntl.com. However, this worked for a while but the last three messages I sent her bounced back. Anyway, if you need to email her, try that address and see what happens.

LOST MEMBER: Peter Crookes's Q93 has come back from Glendale, California – if anyone knows where he's gone, please let me know.

FURTHER TO: Eph's Bulletin supplement. I'm sorry if some of you who'd like to have seen it missed my Tabor Pipe article, but I was asked to write something for the *Galpin Society Journal* for their 50th number, so I did. Eph and I do disagree in some respects on the purpose and function of *FoMRHIQ*. I think of it as somewhere for practical nuts and bolts articles, for discussions, for flying kites, for the smaller papers which other journals find it difficult to fit in, and for things, especially preliminaries, which one wants to get into peoples' hands quickly. I don't think of it for substantial articles (Tabor Pipes was 15 pages with 8 illustrations) on archæo-organology (or organological archæology), any more than I do for my Saleroom articles, which *Early Music* commissions (and pays for), or for the rather shorter but still quite substantial article on an ethnographic instrument (the Forked Shawm, which I did write a preliminary of here some years ago), which I published in the most recent *Yearbook for Traditional Music*, based on a paper given at a conference which was run by the editor of that journal. I like *FoMRHIQ* (I wouldn't spend as much time on it if I didn't) but I put things wherever I think most appropriate, not for quality (Eph said 'more important stuff', which isn't a criterion in this respect) but for suitability. And I may be your Hon Sec, but I am also a Galpin Soc Vice-President, which entails some responsibility to keep them in mind, too!

Camwood: Tom Pockley writes: 'I thought you would like to hear the latest about Camwood. When chasing an order for ebony to make walking sticks I discovered that Camwood has unfortunately had to cease trading. Their business has been passed to Craft Supplies Ltd, The Mill, Millers Dale, Buxton, Derbyshire SK17 8SN. I enjoyed the article about fitting pegs in the latest Comms but what I need most, as a person at home with wood and at sea with brass, is a similar one about making and fitting springs on woodwind instruments.' JM adds that Robert Bigio wrote a Comm on key-making (Comm.254, in Q 18, January 1980; maybe Eph could reprint that (Robert is willing) or maybe someone could write us a new one?

Comm.1602: Donald S Gill writes: 'I was interested in Alec Loretto's Comm.1602. I think he has hit on most of the reasons for lack of response to Comms but I can think of one more. Some of us part time, less experienced readers feel we are sitting at the feet of the masters and learning, and have nothing to contribute, although we are very grateful for the information being passed on. We are wrong. Most of us have something to contribute even if it is of the Hints and Tips variety rather than a scholarly article. So come on readers, don't be shy.'

BOUWBRIEF 91: The most important information in this issue is the news that the Hague Gemeentemuseum is open again after its long closure for restoration. The lead article, titled in

English 'Pianofortes: to restore or to deplore, that is the question', is as usual written in Dutch so that I am uncertain whether the eventual answer was to restore them or leave them to rot, but as some of the photos do show a pretty deplorable instrument undergoing some restoration. I presume that restoration was the eventual answer. (I'm sorry that we seem to have lost all our volunteers to report what's in our Dutch sister journal, for many articles look useful and my Dutch is negligible and my only dictionary small). Certainly one on making heavy duty wire springs such as are used on organ bellows, with a drawing of the jig to make them with, could well be useful – the length and detail of the article shows that the job isn't just a matter of bending a bit of wire between the fingers. One could use a variant of the same jig to make coil springs for spit keys, for instance. Maybe one of our Dutch members who has reasonable English and is a member of the werkgroep Bouwerskontakt might be willing to keep us informed about what's in their pages, just as they inform their members of what's in ours?

REQUESTS: Peter Foster is writing an article on **making harpsichords from kits** and would be interested in hearing from anybody who has made an instrument in this way; he has already had a lot of help from John Storrs, David Bolton and the Early Music shop.

Marco Tiella says 'I wonder if someone has information about **ancient Italian music for gamba**, extant Ms or scores, but G.Legrenzi's, *La Cetra*, Venezia 1673, Sonata quinta à quattro viole da gamba ò come piace; Sonata sesta à quattro viole da gamba ò come piace.'

Kenneth Sparr is "in the final stage of translating an old article (by me) about the **double-headed (two-headed) 12-course lute by Raphael Mest** in Sweden. This article was published in Swedish in 1984 and I have the ambition to update it at the same time. It will probably be published sooner or later (in a journal or perhaps as a WEB-page). I'm using the easy way to try to get new information particularly about the instrument itself. I have knowledge about the following preserved double-headed 12-course lutes (not counting the Mest one):

'Magnus Hellmer Zue / fiessen... 16 Jar' (private collection, Bndingen)

'1596 // Jonas Stehelin in Argen[turn] Johann Adolph B=ningk // in B=bsingen hab die lauthe // renoviret. Den 12 decembr: // Anno 1664' (Musikinstrumenten-Museum, Leipzig No. 494)

'Johannes Rehm in Fuessen // me fecit Anno 1607.' Repaired by Matthias Hummel in 1701 and Sebastian Schelle in 1721. (Germanisches Nationalmuseum, Nurnberg, No. MIR905).

VVendelio Venere 1603 (Darmstadt No. 19) (more information needed here: I found reference to this lute on David van Edward's page)

Could you add information about other lutes I would be most grateful.

Furthermore I have the following information about instruments made by Raphael Mest:

Lute with a printed label 'Raphael Mest in Fiessen, imperato del / Misier Michael Hartung in Padua me / fecit anno 1610'. The back of the lute has nine dark-stained ribs of beech, an angled pegbox and a separate pegbox for the two lowest courses. The fingerboard has fixed frets of bone. The lute has been rebuilt and repaired several times: in 1806 by Gottlieb Fichtel and in 1826 by Wilhelm Geitner, both from Breslau. The lute has belonged to Carl Maria von Weber, who was conductor at the opera in Breslau 1804-1806. The dimensions are the following in centimetres: Total length (80,5) 53, the pegbox 29,5, the width 32 and depth 14. The lute was acquired 1869 by the Schlesisches Museum für Kunstgewerbe und Altertmer in Breslau and had the inventory number 5516. The lute disappeared during the Second World War. Although search has been made in Poland the instrument has not been found.

Lute with a printed label: 'Raphael Mest in Fiessen, Imperato / del Misier Michael Hartung in Padua / dua fecit 1617'. The back of the lute consists of 33 ribs of yew and is somewhat changed. The total length is 112 centimetres. It has been provided with a new belly (30,5 x 45,8 centimetres).

The length of the fingerboard is 28,6 centimetres. Neck and pegboxes are not original. The scale length is 64,5/91,5 centimetres. The lute is kept in the Germanisches Nationalmuseum, Nuremberg, with the inventory number MIR 900.

Lute with printed label: 'Raphael Mest / in Fiessen 1638'. Apollonia D=mling donated this lute on 2 October 1846 to the Sammlungen des Historischen Vereins Wnrzburg. This collection was later included in the MainfrSnkisches Museum Wnrzburg and the lute got the inventory number H. 7822. The lute was destroyed during the fire in Wnrzburg on 16 March 1945. More details about the instruments are lacking.

Viola d'amore with label: 'Raphael Mest in Fiessen 1643'. This is possibly the oldest preserved viola d'amore. It is in good condition and very neat. It is now kept in the Tiroler Landesmuseum Ferdinandeum in Innsbruck.

Lute, 'completely made in spruce and very nicely worked', was in the collection of R. Leibbrand in Berlin. No other information is available and the destiny of this instrument is not known.

If you have any additional information to this I would be most grateful."

JM adds that this is how it has come over the email - I have not corrected it at all.

EVENTS: The London **Early Instrument Exhibition** will be at the Royal College this year in late October: 29, 30, and 31. The Early Music Shop has persuaded the RCM to let them have the space in half term week so that at last we can break free from the clash with Utrecht. Everybody's complaints about that clash have had an impact. Whether our complaints about it being annual have had an impact or not we shan't know till next year, since 1999 is a year that it should take place anyway - it always was odd number years. So FoMRHI will be there in a small corner somewhere (I hope the usual corner by the stage but no guarantees, of course), and I look forward to seeing you there.

The **British Clavichord Society** has a recital by Gustav Leonhard in the Holywell Music Room here in Oxford on Sunday April 25 at 3 pm - I know that the room is ideal for the clavichord because we did a Bate clavichord recital there. They also have a exhibition, workshop, and recital at Blackheath on Saturday 22 May. No further details at present; contact Judith Wardman, 26A Church Lane, London N8 7BU, t&fx 0181 341 4700, 100603.2732@compuserve.com for information.

The **Bate Collection** has the following: 23 January, An introduction to the **classical horn**, including performance techniques, instruments and literature with Bradley Strauchen; 20-21 February, Baroque and Classical period **reed making** with David Rachor and William Waterhouse; 13-14 March, **Bow rehairing** lecture and demonstration with Andrew Bellis; 27-28 March, **Javanese Gamelan** Weekend with Pete Smith and Andy Channing; 8 May, **Keyboard** study day with Martin Souter; 29 May, Introduction to the **Viol** with Cathie Miserandino; 11-16 July, **Bow Making** week with Andrew Bellis. For further information and to book, please contact Joanna Archibald, The Bate Collection of Musical Instruments, Faculty of Music, St Aldate's, Oxford OX1 1DB, 01865 286261; bate.collection@music.ox.ac.uk.

Any other Museums among our members arranging events? If so, let me know!

The **Deutsche Lautengesellschaft** is organising an International Lute Meeting in Basel, 12-14 March 1999. This will include, amongst many other exciting events, an exhibition in the rooms of the Schola Cantorum Basiliensis and the Basel Music Academy. Makers of historical and

modern plucked instruments will be able to book individual rooms to display their instruments; there will also be rooms where string makers and publishers of music and books can exhibit. The fee for taking part in this exhibition will be Sfr. 50 / DM 60. There will also be lectures and concerts. All enquiries, etc, should be sent to: Oliver Holzenburg, Leonhardstr. 22, CH-4051 Basel, *t*: +41-61-271 37 85, *fx*: +41-61-272 37 75; holzenburg@swissonline.ch

NEW SOCIETY: The **Norsk Munnharpeforum** has been founded, with our member Bernhard Folkestad as Secretary. They've already published the first number of their Quarterly (*Munnharpa*), in Norwegian of course but with English translation of all the articles, which Bernhard hopes to keep doing. Subscription is NKR 120 from abroad (about £10) with name and address to the Forum at John Melhus, N-4692 Rysstad, or ask Bernhard for more information; his email is in this Supplement and his address in the main List. The Norwegian trump (jews harp) is one of the more interesting European ones, and if the instrument interests you, the first Q looks as though it'll be well worth subscribing.

Coincidentally a letter from the American Jew's Harp Guild arrived the other day. Their membership costs \$10 and they also produce a Quarterly – no idea what it's like. If you want to find out, they're at POBox 92, Sumter, OR 97877; www.jewsharpguild.org but no email stated.

NEW PUBLICATIONS: Thomas Sherwood has self-published an excellent small handbook *Starting on an Early Bassoon*, which is available from the Early Music Shop (38 Manningham Lane, Bradford, W Yorks BD1 3EA) for £3.60 including postage to anywhere. It's here rather than under reviews because I'm no bassoonist and he sent it to me with a nice note so I want to keep it, but it seems to me very basic, eminently sensible, very thorough for what you can get into 16 pages, and just what any beginner could do with. Maybe a review will follow.

Also not reviewed by me for obvious reasons, my and Gwen's (my wife) *Minstrels & Angels: Carvings of Musicians in Medieval English Churches*, Fallen Leaf, Berkeley, CA. It's already available in USA; Rosemary Dooley is acting as importer and main agent here as and when copies swim across the Atlantic, and doubtless a review copy will fall into Eph's hands in due course, and to other journals etc. It costs \$36 hardback (£25) and \$19.95 (£15) paperback. And if I can't get a free ad in FoMRHIQ, who can!!

WEB PAGES: We have something that could become something of a problem here. Unlike most other Lists of Members that I know, I've always included the maximum of contact information, phone, fax, email, rather than just the address, and of course the indexes. However, if we include web page addresses as well, it really is going to get a bit cumbersome. My inclination, therefore, unless you let me know that you'd like them all to be included, is to note them here in the Bulletin as they come in, but not to include them in the Members' List. After all, if you want to access somebody's web page, you must have access to email, and his or her email address is in the List of course, so you only have to email him or her and ask for the web address. New ones this quarter are:

Carey Beebe: <http://www.hpschd.nu>; he also has a new email cb@hpschd.nu

Philippe Bolton: http://ourworld.compuserve.com/homepages/philippe_bolton; he'll be at the Early Instrument exhibition in October.

Jacqueline Capleton: www.asclepius.u-net.com

Julian Goodacre: www.goodacre.pipes.mcomail.com

Marco Tiella: <http://space.tin.it/musica/mtiella/ama.html>

Kenneth Sparr: My new WEB-page "An Early 18th-Century Swedish Lute Tutor" is now available: <http://home3.swipnet.se/~w-39526/tutor2.htm>

Odilia (the harp people I noted in the last Bull) have a whole gallimaufry of web sites attached to their own site (www.odilia.ch) and they are happy to host others; judging from those listed there doesn't need to be any overt connexion with harps.

If you think that we should do this, get in touch with Eph and see whether he will produce a link to your own site – after all, that's what a web is, a multitude of linked lines.

OTHER THINGS: If I read his leaflet correctly, Ekkehard Stegmiller, one of our members who is a publisher and bookseller, is now acting as a German agent for the Bradford Early Music Shop.

Alec Loretto said I was welcome to add any comment to his Comm herewith. I'd only say that to my mind the piano is in the right place for such a machine! Our local radio 3 often yacks about the greater richness, whathaveyou, etc of Glen Gould or some other spaceship playing Bach or Scarlatti, when to my ear the piano is so lacking in tonal variety compared with the harpsichord – all it can do is play it louder, and if that's what you want, there's always Grieg's *Peer Gynt Suite*, because that's about all that that music does.

After having got that off my chest, perhaps I should tell you that there's something on my feet – my son-in-law gave me a pair of high pitch socks and they look very sharp (lots of ♯ ♮ ♯ ♮ but no bass clefs and of course no flats because the feet provide those).

And after that silliness, have a good winter and occupy yourselves while the days are still short by writing Comms for the next Q.

Deadline: I was going to say All Fool's Day as usual, but that's right on top of Easter when posts are almost as scatty as at Christmas, so try to get things in early if you can, and aim for March 30 or 31 so that I have some hope of getting it up to Eph, new Members' List and all, early in the following week.

Which reminds me, please let me have address corrections, additions, interests, email and so on between now and then.

That, unless I've forgotten anything, is the lot.

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THE NATIONAL TRUST for Places of Historic Interest or Natural Beauty
Fenton House, Windmill Hill, Hampstead, London NW3 6RT Telephone: 01-435 3471

4th BROADWOOD HARPSICHORD COMPETITION
Fenton House, 1999

I am writing to send you details of the 1999 Broadwood Harpsichord Competition, taking place at Fenton House, London - home of the historic BENTON FLETCHER COLLECTION OF EARLY KEYBOARD INSTRUMENTS.

The Competition, funded by The Broadwood Trust, is open to UK-based harpsichord students and players who are under the age of 28 on the closing date, 28th February 1999.

Kenneth Gilbert will be joined on the Jury by Timothy Roberts and Julie Anne Sadie. Auditions will be held at Fenton House (*a National Trust property in Hampstead, London*) using the historic instruments in the Collection, on Monday 26th and Tuesday 27th April 1999. The winner will be offered a Prize Recital on Wednesday 18th August, the final concert in the 1999 series at Fenton House.

The Competition is designed to encourage young early keyboard players to use the valuable resource of the Benton Fletcher Collection, which includes nearly twenty early harpsichords, clavichords, virginals and spinets - the majority of which are maintained in playing order. Candidates will be offered the opportunity to audition on three of the following instruments: 1761 Shudi harpsichord, 1752 Kirckman harpsichord, 1783 Longman & Broderip (Culliford) harpsichord; 1664 Hatley virginals, 1540 Siculus virginals, and 'Vincentius' virginals (c1600).

I should be most grateful if you would bring this Competition to the attention of any suitable young players [*please display one of the enclosed brochures on your noticeboard if appropriate*], and I should be happy to send you further details if you would like them.

SUSAN ALCOCK
Broadwood Harpsichord Competition Organiser

6 November 1998

62 Messina Avenue
London NW6 4LE
Tel: 0171-372 3206
Fax: 0171-328 2511

Review of: *Musique – Images – Instruments, No.3, 1997: Revue française d'organologie et d'iconographie musicale*, ed Florence Gétrau. Editions Klincksieck, 8 rue de la Sorbonne, F-75005, Paris. 248 pp, illus, Ffr 180.

This third number is devoted to the eighteenth century, and is subtitled 'new sounds, new sensibility'. Some of the 'sounds' are indeed new, or anyway unfamiliar. The first article, by Gianpaolo Gregori, is on a harp and some guitars by Stradivarius. The harp is now in Naples, a smallish instrument with a forepillar less than a metre high and presumed to be diatonic only. The six guitars (Canobio-Pagliari, location now unknown; Sabionari, somewhere in Italy; Giustiniani, ditto; Hill, Ashmolean; Rawlings, Shrine to Music; and Vuillaume, Paris, plus a neck somewhere in England) are rather better known. As well as the instruments he discusses the surviving templates. His descriptions of the instruments and their provenance, etc, is always interesting but one needs to be very careful of his bibliographic references; his Italian references may be OK (I have no way to check them) but some of his English ones are to late reprints, which causes confusion when using them to date anything. For example, he should not say that something was present in 1921, as can be seen in Hipkins & Gibb (*Musical Instruments, Historic, Rare and Unique*), when that was an improper reprint of a book published in 1888, as should be well known ('improper' because they promised in 1888 that it would never be reprinted, and it was, twice, in 1921 and in 1948). But other than that, it's a good and useful article.

Beryl Kenyon de Pascual writes on Spanish psalteries, most of which have a 2:3 left-hand bridge as well as the righthand one which gives full length strings, giving a range of around three octaves chromatic. She discusses tuning, stringing, some makers, some music, and gives details of tunings and layout, and of such string gauges as can be ascertained. Hardly a mainstream instrument and for most of us certainly 'nouveaux timbres'.

Florence Gétrau and Denis Herlin are rather more on the 'nouveaux sensibilité' with

the second part of 'Portraits of harpsichords and harpsichordists' (part 1 was in No 2). The portraits are more valuable sociologically than organologically for by this period it is the sitter and the setting that is more detailed than the instrument, so that this is somewhat outside FoMRHI's sphere, important as it may be in other respects.

Jean-François Weber writes on Johann Kilian Mercken and his square pianos (which he confusingly refers to sometimes as *forte-piano* and sometimes as *piano carrée*, leaving one unsure whether he means a true forte-piano or a square; I think they are all squares). From what little one can see in his photos and gather from the descriptions, they seem all to be Zumpe copies (Michael Cole dismisses him in two and a half lines as a Zumpe copyist; we are still waiting to receive the review of Michael's excellent book, *The Pianoforte in the Classical Era*, from the chap who undertook to review it six months ago).

A much more detailed article is that of Philippe Frégné on Kenneth Gilbert's collection of keyboards, a late seventeenth-century Italian, a jigsaw puzzle by Blanchet, made up of bits of a number of earlier instruments and later *ravalé* by Taskin, a Goermans labelled by Jacques a year before he got his freedom and therefore presumed to be his first instrument, a Delin single manual, and a Ronisch piano. An important article on an important collection, marred only by constantly referring (except for the first instrument) to Boalch 2 instead of 3. Each instrument is fully described with all the important dimensions.

Jean Jeltsch has a useful article on Prudent, including a list of everything in the posthumous inventory, something that is always revealing about the working methods and materials of any maker, for the stock in hand is always far more voluminous than the surviving instruments and thus tells us much more about what

he made. There are also details of his upbringing, career, family tree, successors, and a few instruments, including a five-key oboe which looks to me more like a three-key (the third being the G \sharp) plus the low C \sharp and B added in saddles.

There are shorter notes on the *champêtre* fashion (courtiers with bagpipes etc), an entertaining abolition by Laurence Libin of the PG or Gaillard cornemuses, all of which he shows to be lateish nineteenth century fakes; a useful note on a ruler (I'm not sure of the proper name in English) for marking out the keyboards of *vielles à roue*; and the second part of an inventory of all the paintings in the Louvre showing musical instruments. This is the first part of the French seventeenth and eighteenth century paintings (all those in the museum; those in the store to follow in the next issue); no.2 had the Italian paintings of the same period. Such inventories are always extremely useful, though more useful when, as in Howard Brown's in the early issues of *Imago Musicae*, all the paintings are illustrated, even if not much bigger than postage stamps, be-

cause then one can see whether the reference is worth following up for anything evidential. With this list one will have to visit the museum (always a pleasure) but the chances of being allowed to see all the instruments in the store are rather less, so one hopes that illustration in the next issue may be more generous.

Finally some reviews and notes on conferences.

This is one of the better iconographic publications, and since Florence Gétrau, the editor, and I have an exchange agreement under which I can review it here, I can tell you about it, whereas the other major publication in this field, Tilman Seebass's *Imago Musicae*, comes to me only on subscription and thus cannot be reviewed. As with any journal, of course, it's always a toss-up whether there is anything to interest you in any specific issue, but this one is usually varied enough to justify a subscription for anyone who is interested in the evidence that iconography can produce, and, as must be apparent from the above, it is not confined to iconography even if that is the major influence.

FoMRHI Comm. 1611

Jeremy Montagu

Review of: Larigot, No.IX Spécial, Septembre 1998. Association des Collectionneurs d'Instruments de Musique à Vent, 13 Bd de Magenta, F-75010 Paris.

This is the third volume of the catalogue of Bruno Kampmann's extensive collection of wind instruments, especially brasses. As with the first two volumes, every instrument is described and photographed, sometimes with additional detail photos. Putting all three volumes together, this is clearly one of the most important collections that there is, particularly

of valved brass, and we must be extremely grateful to Bruno Kampmann for giving us so much detail on it (as well as for running AC-IMV!). We can now look forward to volume 4 in due course, because Bruno got off to a good start at the recent Sotheby sale (for some details of which see my next Saleroom report in *Early Music*).

[Symbolism in Emblem Books]

In the previous Comm. 1599 I referred to Cesare Ripa's (1560ca-ante 1625) *Iconology* (1), i.e. Cesare Ripa: *ICONOLOGIA, or Moral Emblems. Wherein are EXPRESS'D Various Images of Virtues, Vices and Passions; As DESIGN'D by the Ancient, or: Description of the universal images drawn from old remains and other antique sources...* The work is not only useful, but also necessary for poets, painters and sculptors, who want to represent virtues, vices, human affects and passions. Rome, G.Gigliotti's Heirs, 1593 (2).

The *Iconologia* of Cesare Ripa was conceived as a guide to the symbolism in emblem books. The titles of editions are somewhat different and show that the book was written "for Orators, Poets, Painters, Sculptors and all Lovers of Ingenuity", who had to represent or interpret spiritual attitudes "as design'd by the Ancient Egyptians, Greeks, Romans and Modern Italians"... It was very influential, because Ripa's suggestions signified what musical instruments symbolized for learned persons over a period of two centuries.

Ripa's aim was to suggest making use of a whole range of symbols and of some musical instruments. We must not omit such a fundamental source in studies on musical iconography (3), as the presence of a musical instrument in historical pictures and sculptures has to be primarily considered as a moral symbol on the basis of the old cultural heritage, and secondly as a representation of a real object.

- *Harp: The Pleasure* - young man holding a harp [...].the harp, for the sweetness of its sound [...].
- *Harp* (not illustrated): **Terpsicore** - with a harp.
- *Cithern* (not illustrated): **The Music** - woman, playing a cithern with a broken string, replaced with a cicada. On his head, the young man has a nightingale - well known bird -, at his foot a big wine vessel, and a lira with its bow [...]. The cicada represents what happened to a certain Eunomius, when playing in competition with the musician Aristoxenus. While he was very sweetly plucking, a string broke, and suddenly a cicada flew on to the cithern. It made up for the lack of the string and Eunomius won the musical competition. The nightingale symbolized Music for its various, gentle, delightful melodiousness of its warblings. The wine symbolizes the fact, that Music was invented for keeping men merry, as good wine does, and moreover for its helping the sweetness of the singer's voice.
- *Cittern*: (not illustrated): **Terpsicore** - the Muse who holds a cittern.
- *Cornet: The Comedy* - Woman dressed in tzigane style [...] who holds a cornet for playing music.

- *Horn: Infamy*: Naked woman, and with her body covered by leprosy [...] blowing in the horn [...]. The horn shows how awkward her reputation is, like this sound is rude, and ignoble.
- *Horn* (not illustrated): **January** - A young man holding [...] a musical horn.
- *Flute: Poetry* - A nice young woman [...] around her fly three winged putti [...] and one gives her the flute [...].
- *Flute* (not illustrated): **Euterpe** - with a flute in her hands, and with many other wind instruments at her foot.
- *Flute: Scandal* - An old man [...] and at his foot there is a flute [...].
- *Lyre: Poetry* - A nice young woman [...] around her fly three winged putti [...] and one gives her the flute [...].
- *Lyre* (not illustrated): **Poetry** - A woman, dressed in a cloth of skin colour, holding a lyre in her left hand and a plectrum in her right hand [...].
- *Lyre* (not illustrated): **Music** - A woman, holding the lyre of Apolline (Apollo) with her two hands, and at her foot there are various musical instruments.
- *Lyre* (not illustrated): **Erato** - With a lyre [...] as inventress of the elegy.
- *Lyre: Human Life* - A woman dressed in green [...] holding a lyre with the plectrum in her left hand [...] because Pierius Valerianus tells in his 47th book, that the lyre, as a hieroglyph, is understood as the order of human life. In fact, in the lyre there are celebrated seven different notes, like the various vicissitudes continuously stirring human life [...].
- *Lira da braccio: Poetry* - A woman, dressed in a cloth of skin colour [...], around her fly three winged putti, one giving her the lira, and the plectrum, the second giving her the flute, and the third giving her the trumpet (4).
- *Lirone: Harmony* - A nice and beautiful woman with a double lira of 15 strings.
- *Lute: Intelligence* - A woman holding a lute in her hands.
- *Lute: Full-blooded Air* (5)- A merry young man, playing a lute and showing that he is enjoying the sound and the singing, as he is looking to the heavens.
- *Lute: Scandal* - An old man openly holding in his right hand a pack of cards and in his left hand a lute, and at his foot there is a flute [...].
- *Lute* (not illustrated): **Hearing** (the sense of) - A woman playing a lute [...].
- *Sistola* (Pan flute): **The World** - [...] Pan [...] holds in his hands the sistola, an instrument consisting of seven pipes [...].
- *Tibia: Wisdom* - A naked young man, with four hands, and four ears, stretching his right arm, holding the tibia, a musical instrument dedicated to Apollo [...].
- *Tibia* (not illustrated): **Euterpe** - with two tibiae.
- *Transverse Flute: Adulation* - A woman [...] playing the tibia, or flute [...], demonstrating the sweetness of the words with a sounding melody [...].

- *Trumpet* (not illustrated): **Clio** - holding a trumpet in her hands [...].
- *Trumpet*: **Boastfulness** - A woman looking arrogant, dressed in peacock feathers, holding a trumpet in her left hand [...]
- *Trumpet*: **Commendation** - A very beautiful woman [...] about to play the trumpet held in her left hand [...]. The brightly shining trumpet symbolizes fame, and name of those, which are really deserving praise [...]
- *Trumpet*: **Printing** - A mature woman [...] holding a trumpet in her left hand [...] with the motto "ubique" (everywhere) demonstrating the fame the printing gives to writers, illustrating their works everywhere [...]
- *Trumpet* (not illustrated): **Vain Glory** - A woman of vain aspect [...] holding [...] a trumpet in her right hand [...] customary instrument of vainglory, pretending fame [...].
- *Trumpet* (not illustrated): **Glory** - A woman, with a laurel crown and holding a trumpet in her hands, because with the trumpet she heralds to the people the prince's desires.
- *Trumpet*: see **Poetry**
- *Trumpet* (not illustrated): **Prophecy** - A woman with a veiled face, holding a sword in her right hand, and a trumpet [...]
- *Gambe* (not illustrated): **The Music** - A woman with a dress full of musical instruments [...], in her hair-style there is a "mano musicale" (6), holding in her hands a gamba or another musical instrument
- Various Instruments (*shawm, lute, two viols*): **The Habit** - An old man [...] carrying on his shoulders a bundle of tools, with which the painter capriciously practises his art [...] not giving him other directions.
- Various Instruments (*shawm, greek lyre, Pan flute*): **Fortune** - A woman with bandaged eyes, sitting on a tree, beating with a long pole the tree's branches, and letting fall from it various musical instruments, pertaining to different professions.
- Various Instruments (not illustrated): **Europe** - A woman sumptuously dressed [...] encircled with different musical instruments [...] demonstrating that she always was superior to all parts of the world in what concerns weapons, letters and all kinds of liberal arts
- Various Instruments: **Puglia** (Italian region) - A woman [...] represented [...] together with various musical instruments, particularly pipe and tabor.
- Various Instruments (not illustrated): see **Poetry**
- *Civil Union* (not illustrated): A musical instrument with many strings tuned in unison and an ensemble of many voices in unison.

NOTES

(1) *Iconologia, ovvero Descrittione dell'Imagini universali cavate dall'antichità et da altri luoghi... Opera non meno utile, che necessaria à Poeti, Pittori, & Scultori, per rappresentare le virtù, vitij, affetti, & passioni humane.* In Roma, Per gli Heredii di Gio. Gigliotti, 1593

(2) Edition without illustration. The first illustrated edition (drawn from Cavalier d'Arpino) appeared in Rome Appresso Lepido Facij, 1603. Many other edition followed: 8 in Italy (Rome 1593, 1603, Siena 1613, Padova 1611, 1618, 1624-25, 1630, Venice 1645; 1100 - 2400 items enter the editions as well as caa. 150 - 400 engravings) and two English versions: the full text of the 1709 London edition, the full text of a hitherto unpublished 17th century English translation in manuscript (British Library, MS Add. 23195).

Other books were derived from Ripa's *Iconologia*: J.B.Boudard, *Iconologie*, Parma 1759; Gravelot & Cochin, «Iconologie» in *Almanach iconologique*, 1765-81; J.G.Hertel, *Historiae et Allegoriae Projectae ...*, Augsburg, 1758-60)

(3) I mean that Ripa's descriptions are of interest even for those not agreeing that old musical instruments representations are to be related to iconology.

(4) In the illustration the putti aren't represented and the woman is holding a trumpet (in the form of a big cornet) in her right hand and the lira da braccio in her left hand. Ripa suggest not to represent the putti if there is not sufficient room in the picture.

(5) "Sanguigno nell'aria" in the original.

(6) The medieval musical symbol in the form of a hand, used for solmization.

Bibliography

Mario Praz, *Studies in Seventeenth Century Imaginery*, Edizioni di storia e Letteratura, Roma 1964, pp. 472-75.

«Ripa's Fate», in *The Renaissance Imagination, Essays and Lectures* by D.J.Gordon, Collected and Edited by S.Orgel, University of California Press, 1975, pp.51-74.

E.Panofsky, *Studies in Iconology. Humanistic Themes in the Art of Renaissance*, 1939

E.Panofsky, *Meaning in the Visual Arts. Papers in an on Art History*, 1955.

Web sites under the title of Cesare_Ripa: about 100. See also: Sajó Tamás, HYPERLINK sajot@ceu.hu



The Adulation



The Boastfulness



The Europe



The Fortune



The full-blooded Air



The Harmony



The Habit



The Human Wisdom



The Pleasure



The Printing



The Poetry



The Puglia



The Scandol



The World

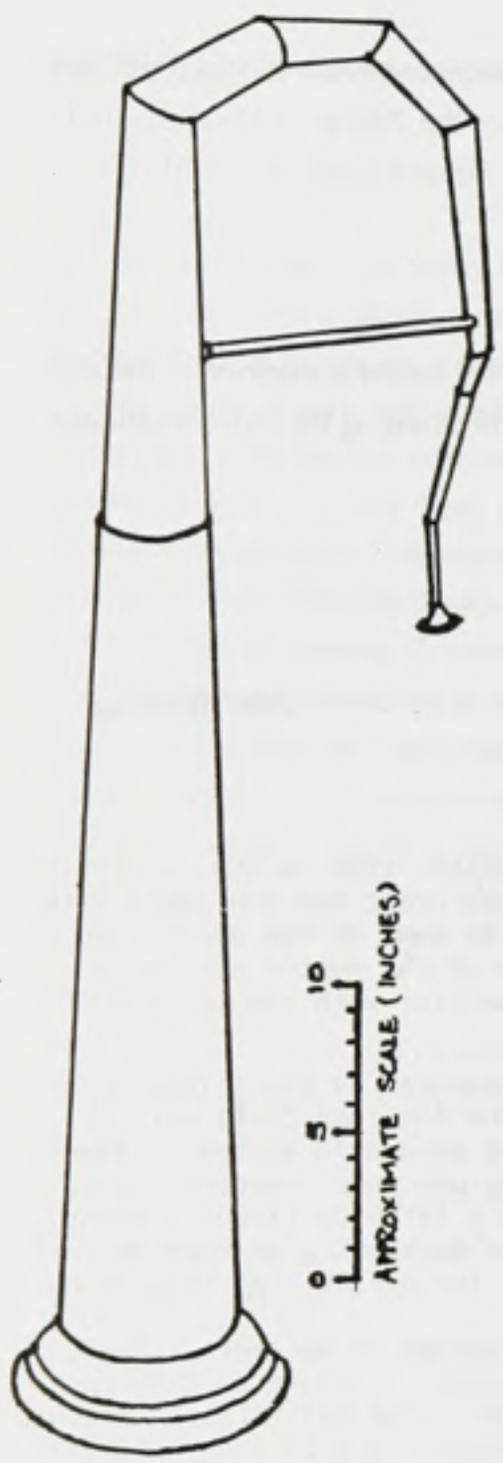


FIG. 1
TINPLATE HORN C. 1865



FIG. 2
SAXHORN, AMERICAN
ISAAC FISKE CATALOGUE, 1861

A Low Tech. Casting Method

This method, for making small detailed castings in low melting point metals or alloys, may be of interest to instrument makers for the manufacture of such things as mouthpieces, decorative trumpet bell castings, instrument keys, English guitar roses, harpsichord roses and the like.

The method is limited to metals having melting points below 650°F including lead/tin alloys, pure tin, white metal and pewter.

The use of lead and alloys containing lead is not recommended due to the toxicity of lead and its oxides which may be absorbed through the skin. Old pewter is one of these alloys that should be avoided.

Pure tin, while it may contain trace quantities of lead is considered to be non toxic. Tin is a relatively soft metal but rigid enough in the form of small sized castings. Tin has been used for centuries as a substitute for silver for decorative coating of iron and for metal inlays - it has the appearance of silver but does not tarnish readily. It has a disadvantage as a casting metal as it shrinks a little on cooling. Tin melts at 450°F.

White metal is an alloy of tin and antimony (92/8) commonly used in the manufacture of cheap costume jewelry. The addition of antimony makes the alloy harder (and more brittle) than pure tin and causes slight expansion on cooling making it good for casting fine detail. Melting point is 475°F.

Modern, lead free, pewter or Britannia metal is an alloy of tin, antimony and copper (91/7/2). Copper is added for ductility and hardness. Melting point is 563°F.

Moulds used for casting these metals are made by coating a pattern with a room temperature vulcanising (RTV) silicon rubber.

Once cured, the rubber mould is flexible allowing re-entrant forms to be cast in fine detail. Mould life can run to 50 or more castings.

This is not novel technology and catalyst curing silicon rubbers formulated for making moulds are available commercially. These materials are, however, costly and can be difficult to obtain in small quantities.

An alternative was found in a local automobile parts store sold as a gasket compound by companies such as Loctite (for example Permatex Form-a-Gasket).

This stuff comes in tubes of 80 to 300 mL size costing around \$8 or less for 100 mL. The disadvantage of the gasket maker compound is that it is air rather than catalyst curing and the mould must be built up in thickness in thin layers allowing time for each layer to fully cure (24hrs) before recoating. The more costly catalyst cured compounds cure overnight with a single pouring.

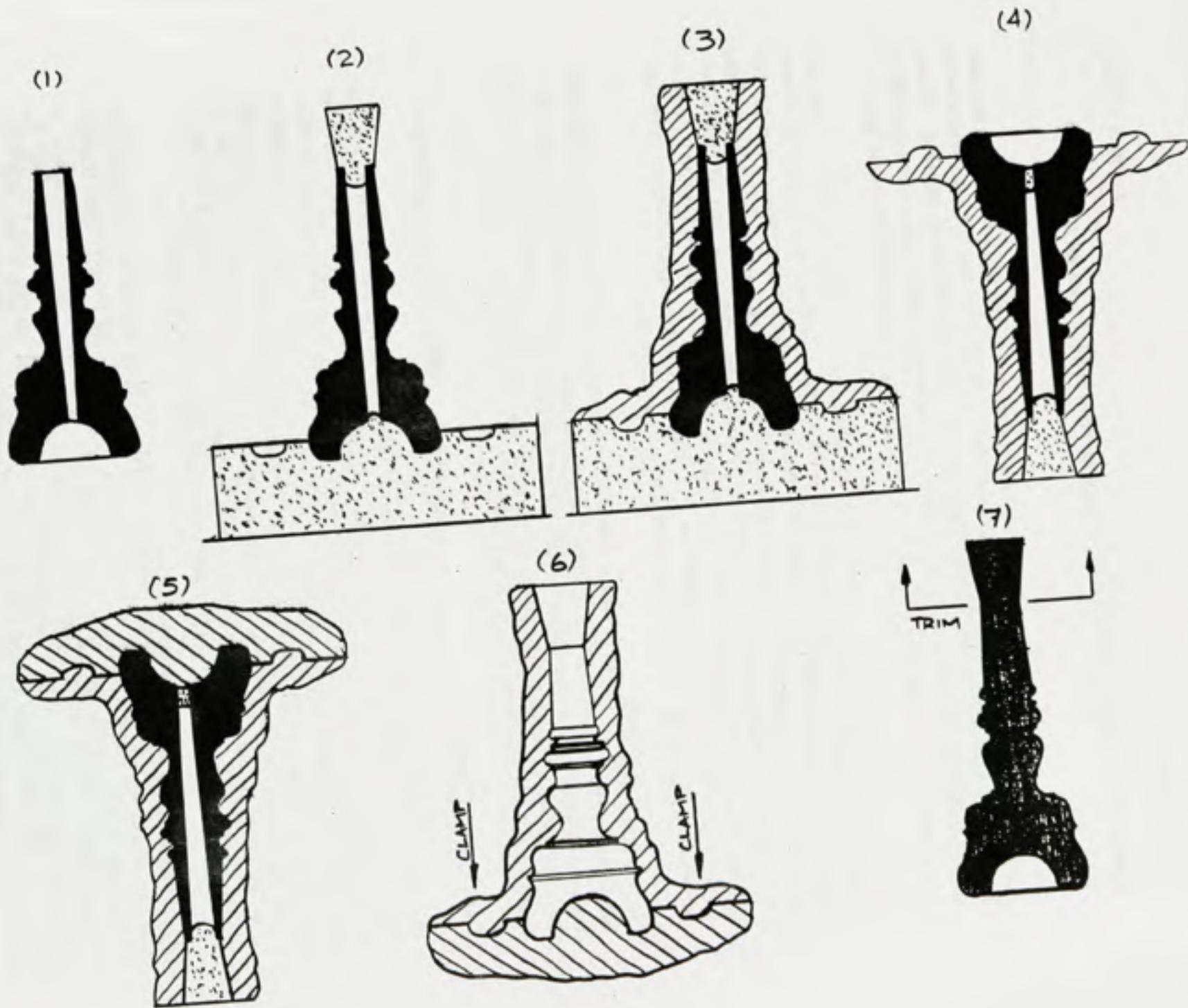
The procedure for making a typical two part mould is illustrated by sketches (1) to (7) for casting a copy of a trumpet mouthpiece.

Sketch (1) - Section of original mouthpiece.

Sketch (2) - Section of mouthpiece set in a block of soft modelling clay (eg Plasticene). The upper surface of the clay block is im-printed in three places with a dowel to form register points. A conical shaped plug of clay is set in the back bore of the mouthpiece to form a mould filling funnel and feeder to take up any metal shrinkage during casting.

- Sketch (3) - Section of the mouthpiece/clay block assembly coated with RTV silicon rubber to form the upper part of the mould.
 Before coating, the assembly is coated with petroleum jelly as a release agent. The mould is built up in several layers until the required thickness is achieved - dependant upon the size of the casting. Each layer must be allowed to cure for 24hrs before recoating. Individual layers should not exceed about 2mm in thickness to ensure proper curing.
 It is important that the first layer of the mould compound be carefully worked into all the crevices of the pattern with a small brush so that all details are replicated.
- Sketch (4) - Section of the upper mould after removing clay base. The mouth-piece and clay plug remain undisturbed and the bore of the mouth piece is sealed with a small clay plug.
 The upper face of the assembly is coated with release agent prior to forming the second half of the mould.
- Sketch (5) - Section of assembly coated with mould compound to complete the mould. Application of the compound is as described in (3) above.
- Sketch (6) - Section of mould assembled ready for casting after removing the mouthpiece/clay plug pattern (this is simply pushed out of the mould).
 Before casting the mould internal surfaces are dusted with a release coating of talcum powder and the two halves - in correct register - held together with spring clamps.
 Ensure that the mould is secured against falling over during casting and wear gloves and eye protection!
 Melt the metal in an iron or steel vessel with a pouring spout. Do not use an aluminium vessel as tin reacts with this metal at casting temperatures. Heat source may be a small propane torch, electric hotplate or similar.
 Do not overheat the metal. Temperature is about right for casting when a pine splint dipped in the metal just begins to char.
- Sketch (7) - Section of completed casting ready for cutting off the feeder cone and drilling out the bore and backbore.

Note that for wide shallow castings such as harpsichord roses, the flexible mould must be properly supported during casting to avoid distortion. This may be achieved by creating a flat surface on the back of the mould (by setting a flat board coated with release agent onto the uncured mould compound). The completed mould is then placed on a flat rigid surface prior to casting.



Comments on Comm. 1600 (Historical bassoon reed making, and further).

I've been very glad to read out David Rachor's comm. and to see that he comes to the same conclusions I came to, more than 20 years ago. Indeed, in the 70', I've been working a lot on Renaissance reed making, by the way together with J.M. Heinrich about the study of cane structure, and this research lead me to publish a "*Handbook of Renaissance Reed-making*" ⁽¹⁾ in a bilingual edition, French and English, in 1979, by Aug. Zurfluh Publications in Paris.

The principle of gouging is exactly that described by Ozi, both for bass or descant instruments, which allows to get a wide range on instruments well-known to have a short one (for instance the "Rauschpfeifen", with a little practice, can play 2 full octaves with a non lip controlled reed, a sopranino f shawm can play 2 full octaves without using impossible fingerings nor torturing the reed, but playing it in the very traditional way of "pirouette" playing, etc...), and Praetorius's Chorist Fagott has its 2 and a half octaves (C up to g') with a good reed, i.e. if you find a very good cane !!!... The tone colour is quite different from that got with a modern made reed, and intonation is also quite different.

But, to come back to bassoon reeds, a friend of mine (who prefers not to be mentioned) discovered some 15 years ago an original baroque bassoon, with a small box containing 2 reeds, probably as old as the bassoon itself, which had been visibly made exactly according Ozi's principles. The fact was rather fantastic to see the shape of the tip which had approximately the following design, **when dry** :

Transversely : 

Longitudinally :  *wide open!*

Then, after about 1 hour in the water, the normal transversal shape was recovered, and the edges were close to each other. Of course, since 2 reeds were available, one being nearly out of order, I was allowed to unwire it (but the waxed thread was still efficient, and the brass wires could be removed without any injure to the cane, and put back in place, **when done at dry** of course). I had the opportunity to measure the thickness of the cane all over the surface of the blades, and to draw a "map" of thickness. But the most important fact was that the layers in which the cane had been gouged could be seen very easily, showing a marvellous example of Ozi's technique, which I presume to be much older than Ozi himself..

During and since the 80', I held special mechanical and acoustical studies on reed-pipes used in organs, and especially on Regals, in the frame of a research for the French Organ Builders Professional Trade Union, and after having carefully measured tongues thicknesses in Clicquot's organs (end of 18th c.), I was able to establish a kind of parallelism in "voicing" the reeds, both cane and brass ones. It would be of course too long to develop it here, but I can say that my very first Regals voiced after those ideas sounded quite well balanced between basses and trebles, and when my friend John Hanchet, who is a fine Fellow in that field of reed instruments, heard at it, he seemed to enjoy it quite a lot.

J Leguy- FoMRHI Comm

I plan to write something about it in the following years, since I can now hold my researches in my workshop very precisely, both in making and analyzing with reliable acoustical softwares, and since I have an actual early baroque organ available to work on.

I want to thank David Rachor for having brought some more materials to our knowledge in that field, since it shows that there is at least one more proof about it and that the same principles in reed making were used, both in Germany and France at least, in the 18th century, and, perhaps, certainly before...

(1) "*Handbook of Renaissance Reed-Making*", still available from our bookshop **Ars Musicae**, 49 Av du Plessis, F 92290 CHATENAY MALABRY.

FoMRHI Comm 1617

Donald S. Gill

Working GPS plastic ivory

Jon Swayne's note about the new source of a plastic substitute for ivory which is more stable than the GPS material (October 1998 Bulletin) prompts me to mention my own experience with the latter.

I have persisted with the GPS because it is the nearest substitute to ivory I can find. The faint graining in it makes it virtually indistinguishable from ivory until it is touched. I haven't ever known it to fracture once it has been incorporated into an instrument but I agree it is extremely unfriendly at the machining stage, in my case when turning. I found it would shatter given the slightest excuse (and sometimes with no excuse at all) presumably because it contains a lot of internal stresses. Eventually I found I could eliminate most of the disasters by spinning it at the fastest speed the lathe was capable of, keeping the chisels very sharp and taking very fine cuts. Even so there was the occasional stomach sinking sound as it shattered.

I have now discovered that it is much safer to work it with scrapers rather than chisels. The advice to spin it fast and take fine cuts still applies. I know some turners don't like scrapers; claiming that they don't cut the wood and produce only dust. In fact provided they are sharp they should be producing shavings just as a cabinet scraper does. The shavings will be shorter and finer than a chisel produces but they are shavings. I think this is why scrapers work better on the GPS ivory; they force me into making fine cuts and almost remove any chance of digging in. Anyway, for what it is worth, I have never had a piece shatter since I started using scrapers.

I have found a very good polish for the plastic. I bought a tub of abrasive paste from an itinerant door to door salesman who thought he was selling it to me to clean up the brass letter box. The letter box remains dull but the plastic polishes well on the lathe.

Technical drawings of musical instruments on the Internet

Drawing instruments on computer

Recent developments in IT have among other things led to doing nearly all technical drawing, workshop drawing etc. on computer. This has obvious advantages, especially on account of the capability to edit drawings and to print them on paper in the required number of copies.

With regard to musical instruments, drawings generated on computer are no more nor less accurate than drawings done by hand. Measuring an instrument, one is obliged to make note of a limited number of measurements between a limited number of measuring points. The curves or surfaces that lie between these measuring points can be indicated on a sketch or at best be preserved on a photo, but they defy unequivocal description. When turning his sketch into a fair copy, whether by hand or on the screen, one tries to connect the well-defined measuring points with curves that "as best as possible" correspond with the appearance of the instrument, as he remembers it. These connecting curves are therefore subject to a certain degree of chance. A computer drawing gives the impression of greater accuracy than it in reality possesses, because distances between completely arbitrary points on the drawing can be measured with the precision of multiple decimal points. One must realize that the measuring points comprise the primary data (however much also they are subject to inaccuracies), and that the curves connecting them represent the interpretation of the draughtsman.

Keeping this reservation in mind, I believe that the computer is very well suited to the production of instrument drawings. For example, besides normal editing of drawings, scaling of an instrument to a particular size is quite a simple process; and when the possibility is added of quick and cheap transmission of drawings by Internet, which the recipient thereafter can edit and print as needed, it amazes me that there are not more instrument drawings available in electronic form.

In connection with a drawing of a recorder in the Museum of Musical Instruments in Copenhagen (Musikhistorisk Museum), I had the opportunity to work with a model for instrument drawings on Internet; in the following I will submit some reflections on choice of software for such purposes.

Demands on the program

Low price

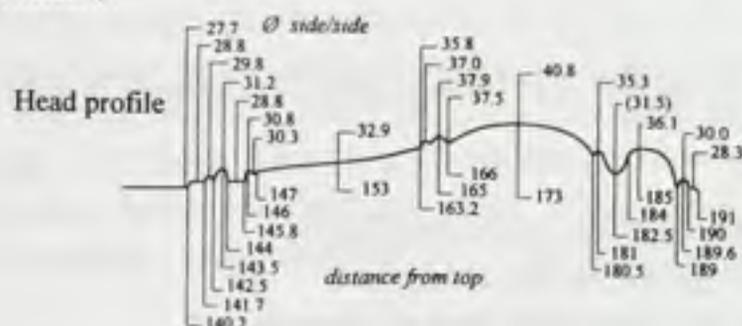
One reason why drawing by computer is not more in use among instrument builders is presumably that the price for the recognized drawing program AutoCAD is so high (approaching £ 3500), that no craftsman can afford to acquire the program by lawful means. The AutoCAD LT version (price about £ 730) has not until recently been able to handle soft curves (see below).

Userfriendliness

Most instrument builders would only occasionally need to work with instrument drawings; it is therefore important that the program does not use commands or function keys which must be learned by heart. Keying in coordinates must be easy and logical, since the conversion of measure-data to a drawing would continually necessitate marking out points determined by coordinates.

Soft curves

Very few of an instruments curves can be described in terms of straight lines and circles. The program must at least be able to handle elliptical arches, splines (= a figure which connects given points with a soft curve corresponding to a springy band fastened to the points) and Bézier-curves (defined by the two end-points and the tangent-direction of the curve in the end-points).



Import of text

The program must be able to import texts and graphs that are edited in normal wordprocessing programs, for ex. via the *clipboard*-function in Windows.

Drawing according to photo

In some drawing jobs it can be a great advantage to be able to draw after the contours of a scanned or digitalized photo. Therefore the program should be able to import commonly used graphic formats, as for ex. *bmp* or *tif*.

Printing and plotting

Many will need work drawings on paper in full scale. Only very rarely would instrument builders have access to a plotter for large full scale drawings. Therefore it should be possible for firms that specialize in printing large drawings to plot the finished drawings. The program should consequently be able to export files in a commonly employed format which the plotting firm can read, for example the *HP-GL/2* format or the AutoCAD formats *dxf* or *dwg*. Moreover, the program should be able to print a large drawing piece by piece on an ordinary A4 office printer, so one can use the assembled drawing in cases where professional appearance is not required.

Test program available on Internet

It should be possible to pick up the drawing program on the Internet, at least for a trial period, so that interested instrument builders can borrow the program in order to read available drawings before deciding to purchase program or drawings.

The ideal model

In order to be ideal, a model for instrument drawings would have the following features:

1. All drawings are gathered on one homepage.
2. All drawings are in the same file format.
3. All drawings can be downloaded free of charge.

re 1) This is no doubt the most realistic of the three demands; one homepage could at least have links to all known and available instrument drawings.

re 2) Time will show which format will become the most widespread; but it is my hope that it will permit handling in programs which fulfill the demands stated above.

re 3) Measuring and drawing of music instruments is very time-consuming for an instrument builder and often incurs travelling expenses. No one can expect that this work be done for nothing – even though many museums count on receiving free drawings of their own instruments, for further reproduction – so fulfilling this point is therefore dependent on finding support or sponsors.

My model

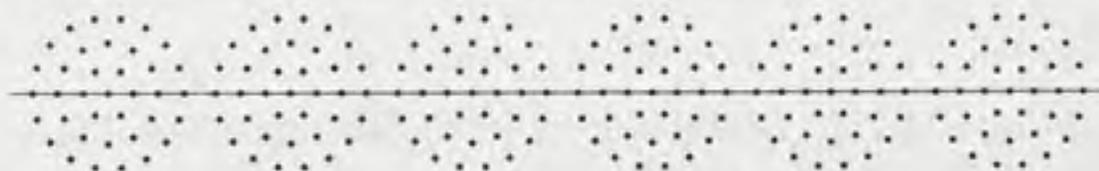
For my drawing of the Pörschmann recorder at Musikhistorisk Museum in Copenhagen (the first in a planned series of drawings) I chose the full version of the program Malz++Kassner CAD 4.6, which satisfies all the above conditions. The program was developed by two German engineers, who kindly make their support available, and who also constantly are improving the program in accord with its users' wishes. Prices for the program range for the moment between DM 135 and DM 895 (about £ 46 - £ 310) depending on the version chosen.

A sample of my drawing can be downloaded from my homepage www.bergstrom.dk, where I also would be happy to include similar drawings or links to drawings by colleagues. The sample drawing is not complete, since I have to ask for a contribution towards expenses from whomever wants a serviceable drawing sent by e-mail. The program can be downloaded from www.malz-kassner.com; the economy version suffices in order to read the drawing and for the most common editing functions, whereas for those who would process drawings more intensively and have the possibility of plotting larger drawings I can recommend the professional version, expanded with a plug-in for export of *HP-GL/2*-files.

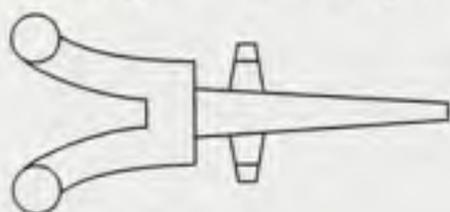
Most technical schools – no doubt also outside of Denmark – offer courses in technical drawing, primarily in the program AutoCAD. From my own experience I can heartily recommend following such a course as an introduction to the basic concepts involved; and I believe that, having worked with AutoCAD, most people will find the Malz-Kassner program considerably easier to use.

Other uses of technical drawing programs

Since procuring my drawing program, a few unexpected applications of it have cropped up. Most larger Renaissance wind instruments have a perforated fontanelle, with holes arranged in rosettes with one hole in the middle surrounded by circles of 6, 12 and 18 holes. Marking out these 37 holes six times round about the fontanelle is a rather tedious job, which I used to do with the help of a brass template. Now I could draw the figure with the 37 points distributed precisely geometrically on the computer

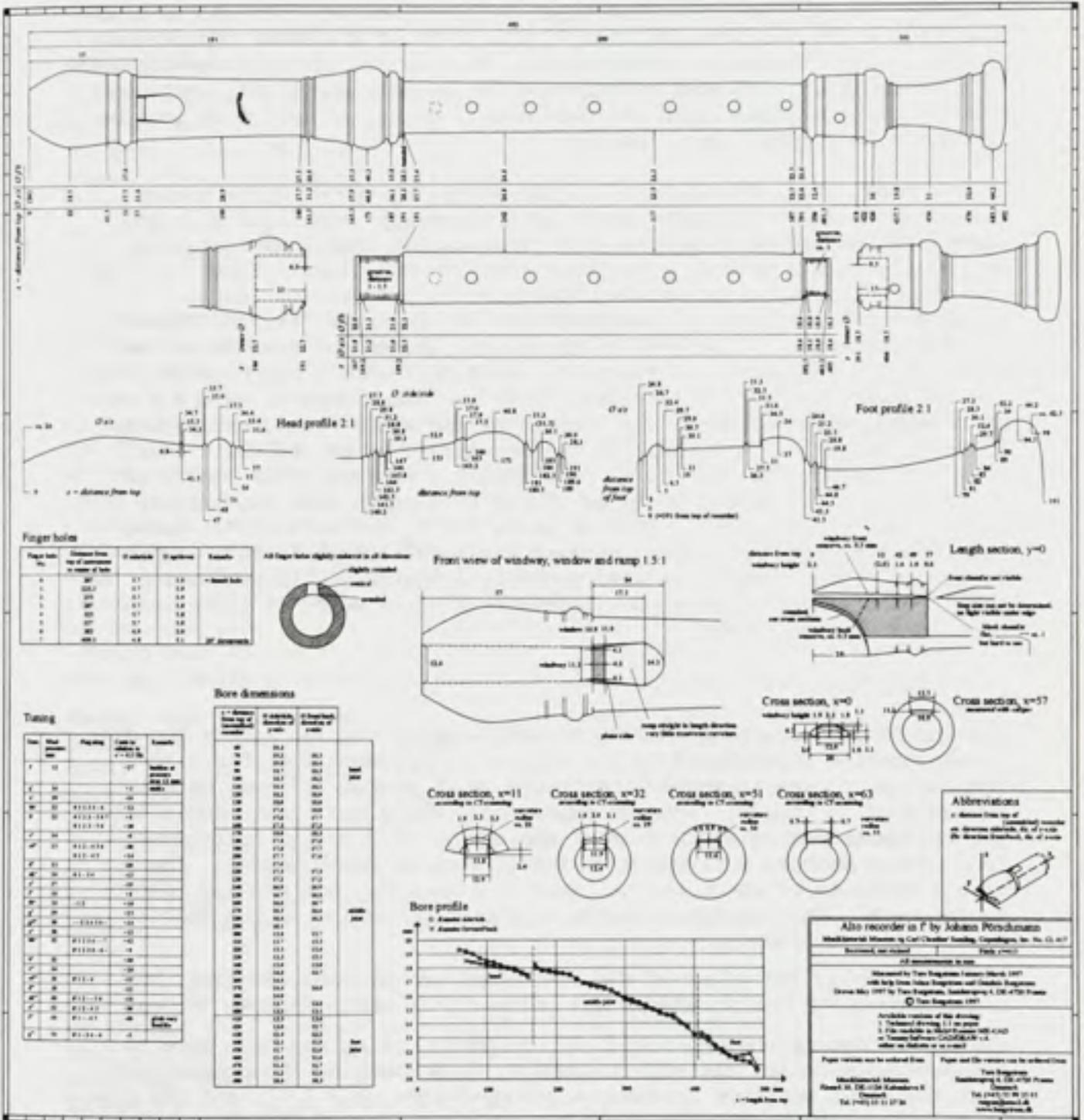


and copy it 5 times in a row, so all 222 points of the fontanelle were marked on the drawing. This I printed on transparent foil, which was then taped around the fontanelle, and I could then drill the holes directly through foil and wood. As the foil is transparent, it is easy to tape it at the correct place. The distribution of holes was much more precise, and marking them much quicker than when it had to be done by hand.



The same method employing taped-on transparent foil proved advantageous when cutting out sheet brass for keys.

English translation: Oliver Rigby Hirsh



The BASS VIOLIN in the Talbot manuscript

The number of early cellos (and near cellos) in an unaltered condition, is pitifully small, and there are few original written sources of information on the early cello. Therefore, any information, such as the measurements in the Talbot manuscript,¹ may be given a greater importance than it would otherwise. However, how reliable are Talbot's measurements of a bass violin, and what conclusions can be made about this instrument? One way to help answer both of these questions, is to design an instrument by using Talbot's measurements.

I have made a full-size drawing of the side-view (shown much-reduced here), using Talbot's measurements as a framework, and filling in the lines and unknown measurements from other cellos that I have studied. Obviously, such a method leaves much that is conjectural; there could be variations in shape, and small differences in proportions, angles, and measurements. Talbot's measurements are in (English) "ft. in. lignes", and for convenience, I converted these into inches and quarter-inches (one ligne = 1/8 inch). I found that most of Talbot's measurements for the bass violin, did fit together. Only two measurements, marked X on my drawing, were not used: the lengths of the sound-holes, and pegbox. Talbot's length of 3½ inches for the soundholes is so unusually short, that one can presume that this was probably a mistake. His length of 8½ inches for the pegbox would be unusually long on even the largest of cellos, and clearly his lengths of belly (28"), and neck (10"), leave only about 6" for the pegbox, because his total length is 44". Therefore, his pegbox-length, is also probably a mistake. (In comparison, on the "VIOLIN TREBLE", his pegbox-length of 4" fits well, if it is measured in a straight line.)

Some Further Observations.

(1) One other measurement I lengthened slightly (by 1/8 inch): the distance from the fingerboard to the bridge. The reason for this slight repositioning, was to enable the bridge to be placed half-way between the ends of the belly. From my experience, while most instruments have the bridge nearer to the bottom of the belly, on Brescian instruments (and others perhaps influenced by these, such as Barak Norman), the bridge tends to be about the half-way position, but not usually nearer to the neck. The resulting length of vibrating-string on the Talbot bass violin is 625mm.

(2) Presumably, the maker of the instrument was probably English, because many of the measurements are so neatly in whole English inches.

(3) The bridge is unusually high for a modern cello, and even more so for a baroque cello, although I suspect, from studying the proportions, that the maker may have intended a bridge-height of 3 1/2", not the given 3 3/4". (In the smaller of my two drawings, I used the lower height to produce the given proportions.)

(4) The neck is quite noticeably angled back. In contrast, Stradivarius' cello-neck drawings show much less of an angle. (See my Comm. 594, Jan. 1985.) However, an angle similar to that on Talbot's instrument, is on the unaltered cello by Martin Kaiser (Venice 1679), No. 1441 in the

Brussels Conservatoire de Musique Musee Instrumental. This Kaiser cello is nearly as short as Talbot's: the body-length of the Kaiser is quoted as 715mm, while that of Talbot's is 711mm.

(5) The "Fourth Position" of the left hand is easy for the player on Talbot's bass violin, because the thumb in the corner of the neck is conveniently opposite the 1st and 2nd fingers (the 1st being on the 5th in my drawing). The octave harmonic is also within easy reach. Not all early cellos had this convenience. (See my Comm. 594.)

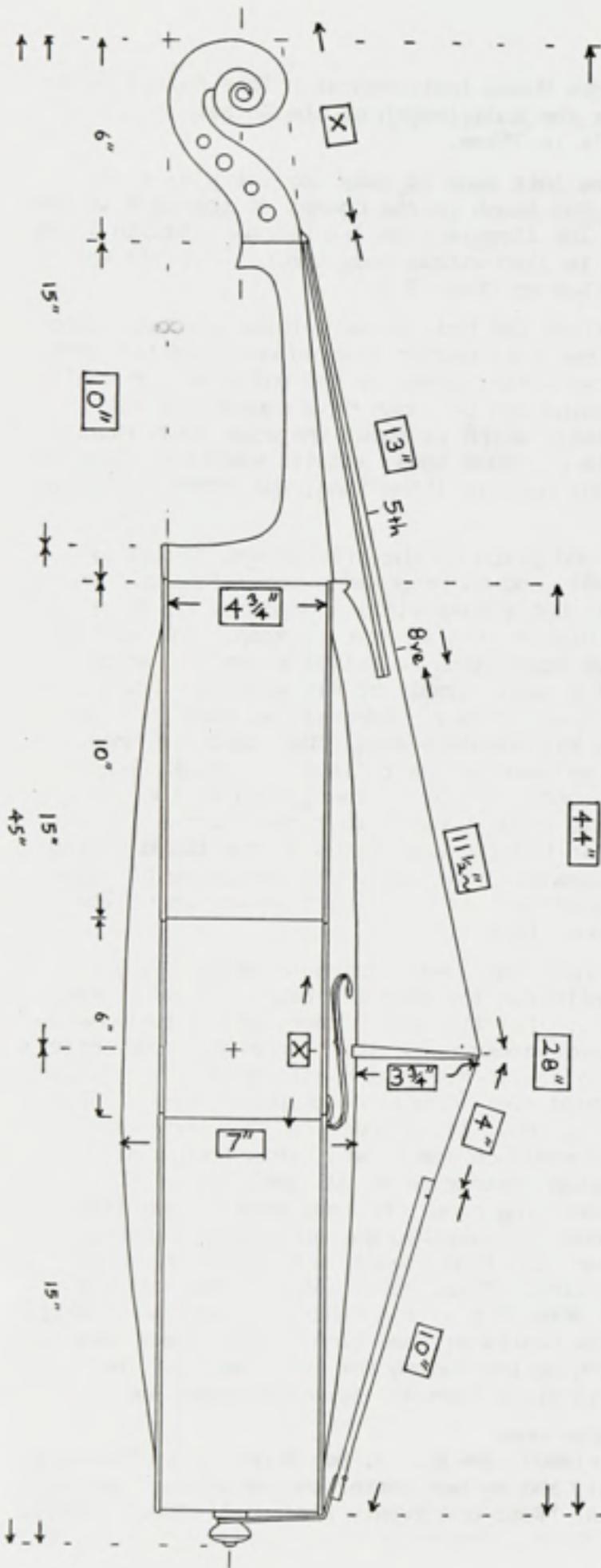
(6) The volume (i.e. cubic area) of the body is very large in comparison with its length. Not only are the ribs higher than normal (and the arching quite high), but also the two widths given of the belly are unusually great. The greatness of the widths can be shown by a comparison with Stradivari's "Piatti" cello (1720), which is about the size most usual for cellos today: the Piatti body is c. 750mm long, and its widths c.335mm and c.430mm, while the shorter Talbot body is 711mm long, but 355mm and 445mm wide.

(7) The question of the tuning and pitch of the strings was raised by Segerman in Comm.1590 (July 1998), and he proposed a tenor tuning. In support of a tenor tuning for Talbot's bass violin, Segerman refers to Talbot's report of Lewis' bass violin with 6 strings, apparently as told by Lewis to Talbot. We can have some faith in Talbot's own statements and figures, because we can see a large sample of his working methods, and we can to some extent evaluate his accuracy. However, we have no knowledge of Lewis, or how reliable his comments are. That Lewis' comments (perhaps as interpreted by Talbot) may not be reliable, I think, is suggested by the ambiguities they contain, e.g. in the tuning of the instrument. Also, Talbot does not state unequivocally that the third string (from the top) of the bass violin had the same pitch as the third string of the bass viol. It is also possible that Lewis was comparing his six-string bass violin with a five-string bass violin: five-string cellos were apparently prominent at about that time.²

Rather than a tenor tuning, I think the lower tuning of Bflat F c g (or possibly C G d a) should be considered for Talbot's bass violin (as measured), for the following reasons. (A) Its high bridge, and angled-back neck, would increase the downwards-pressure of the bridge onto the belly, which would help the response to the lower-tension strings of lower pitch. (B) Its large volume of body would seem to have no purpose unless it was to enhance the sound of a lower pitch. If in addition, the body was lightly constructed (like three early cellos I own), this should also help the response to lower-tension strings (e.g. all catline) of the lower pitch. (C) Talbot's information about the bass violin came from Paisible, and according to Holman³, Paisible was an oboist, recorder-player, and bass violinist, who came from France, and became a member of Charles II's Twenty-Four Violins. This, also, makes it more likely that his bass violin was tuned Bflat F c g, the tuning clearly associated with both the French and English Courts at that time. (D) In any case, Talbot himself gives Bflat F c g as the tuning for the "bass" of the violins, even if this information is given separate from the measurements.

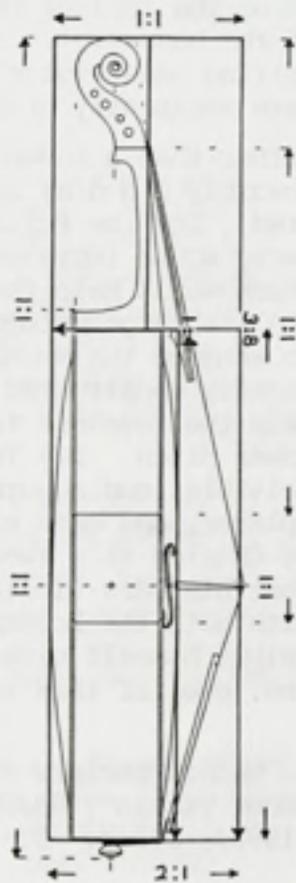
References

1. Galpin Society Journal III (1950), 29-30.
2. See Segerman's "The Name Tenor Violin", GSJ XLVII (1995), and my own letter to the editor, GSJ XLIX (1996), 272-3.
3. Peter Holman, "Four and Twenty Fiddlers", O.U.P (1993).



The "BASS VIOLIN"
 in the Talbot ms.
 c.1690;
 a Conjectural
 Reconstruction

Boxed measurements are from the Talbot ms.

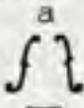
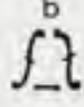
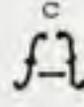


On using iconography for bridge-position

In Comm. 1594 (July 1998) Dmitry Badiarov presented an interesting study about the position of the bridge on early violins, and as part of this study, he included some iconographical evidence. It may be also of interest to have added to this, some findings from my iconographical study of the early cello, and some observations coming from my experience in using iconography for information about musical instruments.

Like Badiarov, I found that in many early pictures of cellos, the bridge is shown nearer to the bottom of the belly than normal today, as can be seen in the following tables which are adapted from my Ph.D thesis:

An iconography of bridge-position on early cellos

1. by date					2. by country				
	a	b	c	d		a	b	c	d
									
16thC.	6	6	1	4	Italy	9	13	5	8
1601-1650	15	11	12	11	France	0	4	17	6
1651-1700	4	5	7	10	Germany	16	13	8	9
1701-1750	10	19	16	8	Flanders	2	3	6	2
1751-1800	0	9	18	20	Nether-lands	2	6	11	16
	35	50	54	53	England	2	6	6	10
					Other & Unknown	4	5	1	2
						35	50	54	53

Position 'd' is normal for today, while position 'a' shows approximately the lowest position shown in the pictures.

These tables list only the 192 pictures in which the position of the bridge could be seen. The general trend for a lower position for the bridge before 1750 than after 1750 is shown. However, it should also be noted that a strong preference was shown in the pictures of Italian cellists of the first-half of the 18th century, for the bridge to be in a low position; was this because the Italians at that time desired a louder sound? In addition, on many of the 16th-century (and some later) cellos, the neck is shown to be longer than normal today, which would lengthen the vibrating-string even more.

There are two aspects I found which somewhat diminish (but not markedly) the apparent preference for a low bridge-position in early pictures. Firstly, there may be a natural tendency for artists to depict the bridge in too low a position, because one finds this in some 20th-century drawings, where it is known, or reasonably certain, that the bridge was centred on the soundholes. Secondly, if one includes only the most reliable pictures, a higher proportion of the bridges are near to the centre of the soundholes.

Like Badiarov, I know of old violins and cellos with indentations from a lower bridge-position. However, usually one can not be certain of the date of these indentations; for example, perhaps sometimes these indentations were created in the first-half of the 19th century, when it is known there was a general desire for greater loudness.

I have found it worthwhile to devote much time to studying the reliability of pictures as a source of information about early cellos. The determination of the reliability of iconographical sources is an enormous subject. One particularly needs to know very well the working methods of artists, and the purpose of the pictures. However, a reasonably good idea of the reliability can very often be gained merely by judging the apparent accuracy of, and care taken by the artist. For example, it should be obvious that the illustrations to Praetorius 1619, are more accurate than those to Mersenne 1636.

One can categorise pictures according to their likely reliability: still-lives, sketch-book drawings, portraits, and documentary pictures (e.g. of an actual musical performance) tend to be more accurate and reliable. Some 17th-century Dutch artists (e.g. Vermeer), are believed to have used a 'camera obscura', to enable a high-degree of accuracy. Pictures used as decoration (e.g. in churches, on harpsichords, and in books) tend to be less reliable. Engravings which are stated copies of paintings, often are reasonably reliable, because (before the invention of photography) they had the purpose of reproducing paintings faithfully. On the other hand, many engravings and paintings done as decorations, are copied (without acknowledgement) at least partly from other paintings, drawings or engravings, sometimes of a much earlier date, and from other countries.

My Ph.D thesis is "Certain aspects of Baroque music for the violoncello as finally exemplified in the suites for unaccompanied violoncello by Johann Sebastian Bach" (the Flinders University of South Australia, 1983)

Curving a fingerboard to improve the action

This is another section from my little handbook on instrument maintenance with respect to strings. It follows from my Comm. 1168. It is not necessary to understand the theory to be able to use the results. Guides for shaping the curvature are in the bottom paragraph of this page. Otherwise, the practical method is summarised in the penultimate paragraph.

The farther from the nut one stops a string, the farther one has to press the string, and more force is needed. Ease in playing is the reason to keep the fingerboard as close to the string as possible. If the fingerboard is too close to the string, when the string is vibrating, it slaps against the fingerboard near where it is stopped. A good action angle is one between the string and the fingerboard that is just large enough to avoid the slapping with the maximum vibration amplitude the string will have in playing. If one keeps constant the local action angle (the angle between the string and the fingerboard surface as they leave the stopping finger), the tendency for the string to slap (or the tendency not to slap) is likely to be the same all over the fingerboard. This makes the action about as easy to play as one can get it. A constant local action angle leads to a fingerboard shape that is a logarithmic spiral. That curve can be approximated by a circle that goes through the nut and is tangent to a line parallel to the string at a distance from the nut of 0.63 times the nut-to-bridge distance (string stop). If a string is stopped at that point along the fingerboard, it sounds slightly higher than an octave and a fourth above the open string.

It is assumed that an action angle that works well near the nut with a straight fingerboard will work all along a curved fingerboard. One can get the radius of the circle from the geometry, which makes the angle at the circle centre between radii to the nut and to the point of tangency to be equal to that action angle. Let us measure the action of a straight fingerboard by h , which is the height of the bottom of the string above the top of the 7th fret (or if frets are not used, the fingerboard at the position of fingering the fifth, at $1/3$ of the string stop from the nut) divided by the string stop. The sin of the action angle is $3h$, which equals .63 times the string stop divided by the radius. Thus the radius is 0.63 times the string stop divided by $3h$. I've found that for viols, a good action is achieved with $h = 1/200$. In this case, the radius is 42 times the string stop. Drawing an arc of such a large radius is impractical.

A procedure to create this action is to start off with a straight fingerboard of length L . Half of it subtends an angle around the circle centre, the sin of which is $L/2R$, where R is the radius. The angle around the circle centre that the string subtends between the nut and the point of parallelism with the string has a sin of $0.63 S/R$, where S is the string stop. The angle between the initially straight fingerboard and the string, according to the geometry, is the second of these angles minus the first. Let k be the distance between the end of the fingerboard and the bottom of the string. Then $k = 3hL(1 - 0.79L/S)$. The derivation of this is: $k/L = \tan\{\arcsin[(0.63S/R) - \arcsin(L/2R)]\} = 0.63S/R - L/2R = (3h/0.63S)(0.63S - L/2) = 3h(1 - 0.79L/S)$, so $k = 3hL(1 - 0.79L/S)$. If the fingerboard was set as prescribed for a straight fingerboard, the end of the fingerboard would be $3hL$ from the string, so the $0.79L/S$ term represents how much closer the end of a curved fingerboard can get.

We are now able to set the fingerboard angle to give that k distance from the string of the end. One marks half the fingerboard length and gauges out a channel across it of depth which we shall call p . Then $p = 0.60 hL(L/S)$. The derivation of this is: $p/R = 1 - \cos\{\arcsin(L/2R)\} = 2\sin^2(L/4R) \approx 2(L/4R)^2$, so $p = L^2/8R = 3hL^2/[8(0.63S)] = 0.60 hL(L/S)$. The bottom of that channel and the two ends of the fingerboard are on the final circular curve. If one has a good eye, one can, from these three points, shape a uniformly circular curve along the fingerboard.

If one does not trust one's eye, one can use the middle $2/3$ of a uniform stick, bent just the right amount from the ends, as a guide. Another guide could be a flat edge with thin strips of shim glued to it at intervals of an eighth of the fingerboard length. The shim heights from one

end of the fingerboard length to the other should be 0, 7/16, 3/4, 15/16, 1, 15/16, 3/4, 7/16 and 0 times p . Actually, these figures are for a parabola, but at these shallow curvatures, there is no practical difference between a parabola and a circle (the constant curvature is shown by each height being 1/16 greater than the average of the heights next to it on each side).

Let us illustrate this with the above viol example. As before, $h = 1/200$. Assume a modern bass viol with $S = 690$ mm, and $L = 460$ mm ($2/3 S$). If the fingerboard was set as prescribed for a straight fingerboard, the end would be $3hL$ or 6.9 mm from the string. With the hollowed-out fingerboard, that distance is $k = 3hL(1 - 0.79L/S)$, which is 3.3 mm. So the end is less than half the distance from the string of a straight fingerboard. The amount of hollowing out at the centre of the fingerboard is $p = 0.60 hL(L/S)$, which is 0.9 mm.

This amount of hollowing is not particularly noticeable, but with the end much closer to the string, it makes playing in high positions much easier. If one is not sure of the evenness of the curving of the fingerboard, one can set its end a little more than k away from the string. If a fingerboard has tied frets, one can simulate the curve for the tops of the frets on a straight fingerboard by varying the fret thicknesses.

In summary, the practical procedure starts with knowing the string stop (S), the fingerboard length (L) and a good h . For a good action near the nut on a straight fingerboard, h is a ratio - the distance from the bottom of the string to the fingerboard at the position at a third of the string stop (from the nut) divided by the string stop. One then calculates $k = 3hL(1 - 0.79L/S)$ and $p = 0.60 hL(L/S)$, where k is the distance from the end of the curved fingerboard to the bottom of the string, and p is the maximum hollowing out at its centre of an initially straight fingerboard. One then hollows out the fingerboard with uniform curvature and sets k .

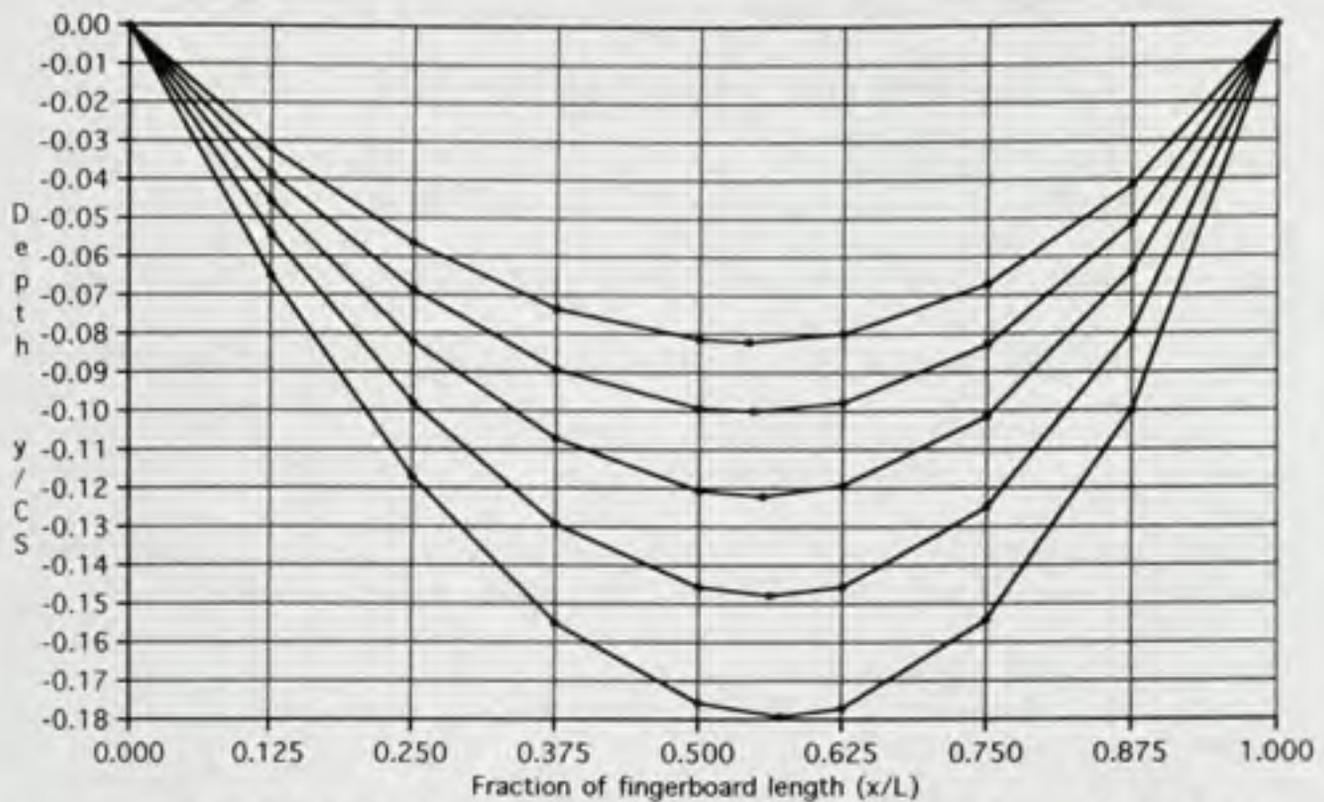
Quite a few instruments, especially those that use high positions very often (like the violin, viola, cello and double bass) are now made with such curved fingerboards. I doubt whether the makers use a theory as given above, but the effect can be achieved by trial and error. The curvature may be different for treble and bass strings, leading to a slightly twisted fingerboard. This twisting is in addition to the twisting that is sometimes put into the fingerboard to make the first string on the violin or the fourth string on the cello easier to play. Uniformity in shaping the fingerboard curvature is important here, and only a skilled woodworker should attempt to do this hollowing-out procedure.

APPENDIX: A Refinement

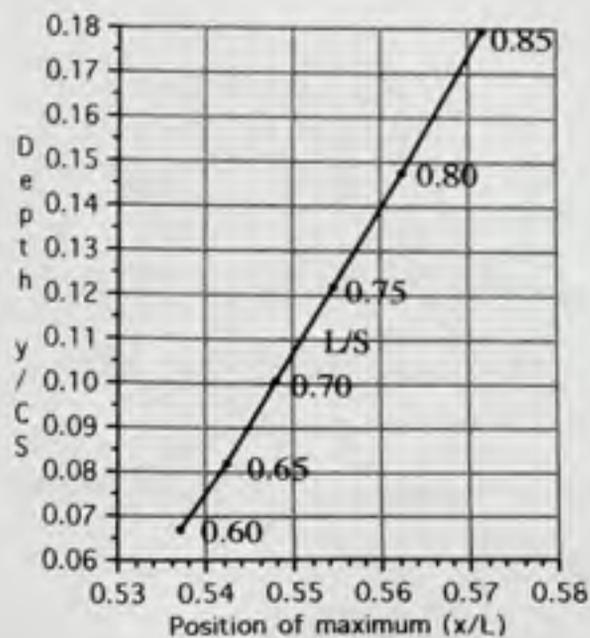
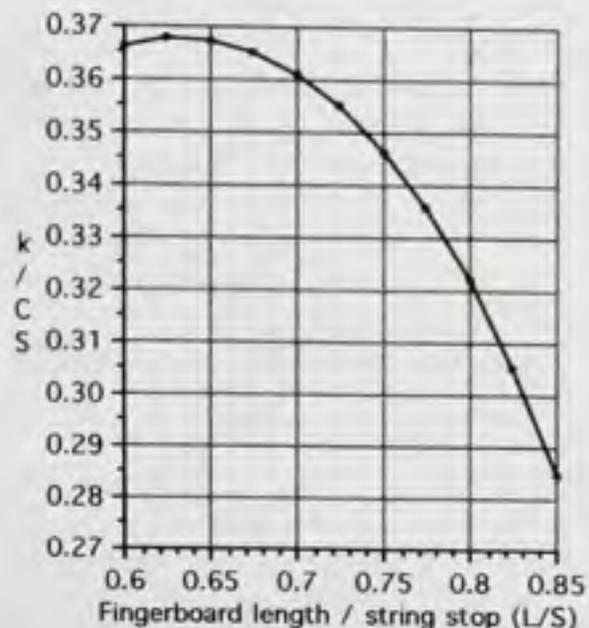
A refined approach to this problem is to avoid the circle approximation and work directly with the logarithmic spiral. It is in polar coordinates with the origin at the string leaving the bridge. The distance of any point on the spiral from the bridge is r , and the sine of the angle between the unstopped string and the string stopped at that point on the spiral is Y divided by r , where Y is the amount it has to be depressed. Then $Y = Cr \ln(S/r)$, where \ln is the natural logarithm and C is the constant angle (in radians) between the stopped string and the fingerboard, which equals $3h$ (h being defined above for a good action on a straight fingerboard).

At the end of the fingerboard (on the spiral), $k = Y_L = C(S-L) \ln(S/(S-L)) = -CS(1-L/S) \ln(1-L/S)$. Let x be the distance of a point on the fingerboard from the nut. At that point on the spiral, $Y_x = -CS(1-x/S) \ln(1-x/S)$. The distance at that point between the original straight fingerboard and the unstopped string is xY_x/L . The difference, which we shall call y , is the depth to which the fingerboard is scooped out: $y = CS[(x/L)(1-L/S) \ln(1-L/S) - (1-x/S) \ln(1-x/S)]$

On Figure 1, y/CS , greatly expanded, is plotted against x/L for five values of L/S . From top to bottom, these values are 0.65 (an octave-and-a-fourth fingerboard), 0.70, 0.75 (a two-octave fingerboard), 0.80 and 0.85 (longer than a modern fingerboard). The depths are calculated for values of x/L which divide the fingerboard into eighths.

FIGURE 1: Depth (y/CS) plotted against Fraction of fingerboard length (x/L)

We can see in Figure 1 that the hollowing-out curves are somewhat skewed to the right (towards the bridge), while in the circle approximation, they would be symmetrical about the $x/L = 0.50$ position. The position of maximum depth was found by finding the x/L when the derivative $dy/dx = 0$. These positions and the depths are shown in Figure 2 for the practical range of fingerboard lengths. Find the relevant L/S along the curve and read off the coordinates. In Figure 3, the distance of the fingerboard end to the string k divided by CS are shown for the same fingerboard lengths. To get the actual depth y or k in mm from the Figures, one reads the appropriate value off the graph and multiplies by C ($3h$) times the string stop S (in mm).

FIG 2: Deepest position x/L and y/CS for different fingerboard lengths L/S FIG 3: Fingerboard end string distance k/CS for different fingerboard lengths L/S 

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Remember to let me have other corrections before April