The Ganassi Recorder: Separating Fact from Fiction

by Adrian Brown

It may seem unusual to start an article in *American Recorder* with an apology, but such is the nature of Sylvestro Ganassi: even the mere mention of his name seems to court controversy at every corner. My aim here is to present an objective overview of Ganassi's connections with the recorder in the historical as well as the more recent sense, and to do this with as little pre-judgment as possible. I want to simply present my own findings.

It is impossible to write about the modern history of the "Ganassi" recorder without mentioning the lengthy dispute that played out during the early 1990s in the pages of this journal as well as in the British *Recorder and Music Magazine*. This affair seemed to revolve mostly around the question of who had been the first modern maker to make a recorder based on the celebrated instrument in Vienna. I do not wish to add to this controversy, nor to uphold the claims of any of the parties involved, but simply to acknowledge the attention it drew to the "Ganassi" recorder. I have thus tried to skirt carefully around this issue, to concentrate only on the impact the published materials had at the time, and to leave out discussion relating to the question of a first maker.

Introduction

The "Ganassi" recorder is now an established recorder type. Indeed, a quick survey of the catalogs of modern recorder makers would find few workshops that do not offer this type of instrument in various sizes and pitches. The instrument has been used by players for many different styles of music, from Medieval *estampitas* to contemporary electronic works.

The name "Ganassi" recorder has come to mean an instrument with a large range that uses different fingerings for the high notes from those used for the more standard Baroque design. For many years, it was thought to represent a sort of evolutionary link between the wide-bored Renaissance model and its shriller, fussier Baroque counterpart.

The difference lies essentially in the "Ganassi" recorder's trumpet-shaped bore and large tone-holes, which make possible an extension of the normal Renaissance recorder's range to almost two-and-a-half octaves. In acoustic terms, these high notes are achieved using different fingerings: the important note XV (high C, if we consider modern soprano fingerings) is fingered as a fourth partial of note I, played by covering all the tone-holes while leaking the occasional tone-hole—unlike the normal Baroque fingering, which uses a modified third partial of note III. Additionally, Ganassi gives the fingering Ø1----6- for note XIV (soprano fingering=high B), which is the octave, or second partial, of note VII, a fingering given first by Martin Agricola in 1529—and very different from the later fingerings described by Philibert Jambe de Fer.

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So where did this Ganassi recorder come from, and what sort of music might we expect to play on this instrument? Over recent years, I have become less and less satisfied with my own answers to these questions. Also, there seemed to be a large misunderstanding among many of my customers and colleagues about Ganassi's treatise and about one of the surviving recorders in the Vienna Kunsthistorisches Museum (Vienna KHM). Indeed, when I started my collaboration with the Vienna KHM, I was constantly asked by both colleagues and players, "but did you get to play *the* Ganassi recorder?"

A recent search on the internet for Ganassi gave me a host of offers for "alto recorders after Ganassi," but actually precious little information on the man himself or about his precise link to our "Ganassi" recorder.

This article is adapted from a lecture given by the author as part of the European Recorder Performance Festival, Amsterdam, The Netherlands, in October 2004. It was also previously published in 2005 in German in Tibia, *under the title, "Die 'Ganassiflöte' – Tatsachen und Legenden."*

Brown grew up in the English country town of Haslemere, a place synonymous with the recorder since the establishment of the Dolmetsch workshops there in 1919. He studied instrument making at the London College of Furniture in the early 1980s, specializing in recorders under the supervision of Ken Collins. Since leaving, he has been an independent producer of custom-made recorders. Over the last 12 years, he has conducted extensive research into surviving Renaissance recorders, traveling throughout Europe to measure and catalog them. He hopes one day to have examined the nearly 200 surviving specimens. He is the author of many articles on the subject and, over a five-year period, collaborated with the Vienna Kunsthistorisches Museum preparing a new catalog of their huge recorder collection.

He lives in Amsterdam, The Netherlands, with his wife, the recorder player Susanna Borsch.

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I decided to investigate the historical trail of the "Ganassi" recorder, and to return to the book, the man, and Venice of the 1530s.

The Book

The description of Ganassi's first book, *Opera Intitulata Fontegara*, can be translated as:

Oeuvre entitled 'fontegara,' which instructs in playing the recorder with all the proper art of this instrument, especially the creation of diminutions that will be useful for ***all wind and string instruments as well as those who practice singing****. (author's emphasis)*

It was published by Ganassi himself in Venice in 1535, when he was around 42 years old. The name "fontegara" is thought to have come from "Fontego," a government storehouse near where Ganassi lived in Venice, and is also possibly intended as a pun on two words: *fonte*, a source, and *gara*, a course or competition.

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Ganassi was a member of the *pifferi* of the Doge of Venice, gaining his place in 1517 to replace the recently-deceased contra-alto player. Like most professional players of that time, he would have learned his music through apprenticeship with a master, rather than via instruction books or treatises.

The book is unusual because, unlike the usual encyclopedic style of most 16th-century treatises, Ganassi's book gives detailed information about: articulation, breath control, trills, fingerings and, of course, diminutions, which take up more than 75% of the printed pages. One of the surviving copies in the Herzog August Bibliothek Wolfsburg, Germany, also includes a manuscript appendix in Ganassi's own hand, of 175 variations on a single cadence, prepared for an unnamed nobleman of Florence. The binding, dating from the 16th century, contains a letter from Ganassi to a certain "messer domenego," the printed *Fontegara*, and the manuscript pages containing 175 cadences. The letter mentions some 300 cadences on a single subject, as well as some rudimentary instruction for *la lira* (lira da braccio), and the *uiola da tasti* (viola da gamba), so it may well be that the cadences in this appendix were intended for these instruments rather than for the recorder. (I am indebted to Christian Hogrefe of the Herzog August Bibliothek for providing me with this information. and to Marco Tiella of Rovereto, Italy, for help with the translation.)

Ganassi prints a number of fingering charts in his book, many of which concern the normal Renaissance recorder range of one octave plus a major sixth. Additionally, these charts are written for the three standard sizes of recorder of that time: bass in f, tenor–alto in c, and soprano in g, again mirroring both the earlier treatises of Sebastian Virdung and Agricola, as well as the later works by Jambe de Fer, Zacconi and Cerone. In fact, although Italian philosopher and amateur recorder player Jerome Cardan does refer to an additional soprano in d, we can say that all the treatises, before that of Michael Praetorius in 1619, seem to suggest a "virtual'' recorder consort of only these three sizes and make no reference to the larger sizes of recorder—which certainly existed from around the first quarter of the 16th century.

However, it is in his last three tables, which appear only to have indications for the alto size, that Ganassi finally stakes his claim to posterity. He extends the range of the instrument to over two-and-a-half octaves by using a variety of fingerings—some of which, to the trained eye, seem to be more dubious than others. He says as an introduction to these charts:

Sapi lettor mio dignissimo che molti anni ho esperimentado el modo de sonar & diletatomi di uedere & praticare con tutti li primi sonatori che a mio tempo sono stati onde che mai ho trouato homo degno in tale arte che piu dele uoce ordinarie habi essercitato dil che protrebono hauere agionto una de piu o due uoce onde hauendo io essaminato tal modo ho trouato quello che altri non ha saputo non che in loro sia ignorato tal uia ma per fatica lasciato cioe sette uoce de piu de lordinario detto dele quali ti daro tutta la cognitione: & prima aduertisse che li flauti quali sono formadi da uarii maestri sono differenti luno dal altro non solo del foro ma nel compassar le uoce & anchora nel uento & tali maestri alcuni di loro son differenti nel cordare esse instrumento per causa del suo sonar uariado luno da laltro anchora lorechio: & per tal differentia nasce uno uariado modo di sonar quello de uno maestro e quello de un altro & cosi ti mostrero la uia de piu maestri per li segni quelli hanno differenti li quelli segni saranno dimostrati ne la figura di flauti.

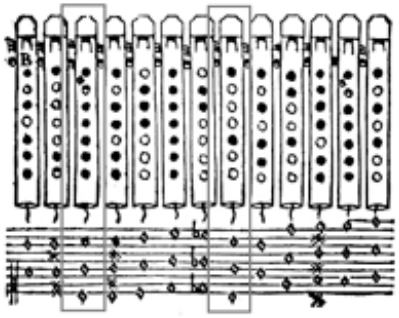
["Remember, esteemed reader, that I have worked for long years at the manner of playing and have taken pleasure in seeing the best instrumentalists of my time and in playing with them. But I have never found a virtuoso in this art who could play more than the ordinary notes; some could add one or two additional notes. Having studied this manner myself, I have found that which the others knew not how to produce, not that they were unaware of this path, rather because they had abandoned it because of its difficulty. It concerns seven notes more than the ordinary notes, of which I will give you a full account. It should be mentioned firstly that recorders, which are made by different master craftsmen, differ from each other, not only in their bores and in their hole positions, but also in their way of blowing. Certain craftsmen tune the instrument differently and their ear varies according to their way of playing. From such a difference is born diverse ways of playing, in the way of this or that master. I will show you the way of different craftsmen through the use of the tables, and the differences will be seen in the representation of the recorders."]

In paraphrasing this passage, it seems evident that, in Ganassi's eyes, all recorders are made differently, and that the player needs to be flexible and have a good technique to play in tune.

He gives three charts involved solely with this high register, and these are conveniently illustrated with the supposed marks of three different recorder makers. The first, an ornamental A, was the trademark of the Schnitzer family working in Nuremberg and Munich, and a double A mark also is found on a number of surviving wind instruments, including recorders. The second, a single trefoil or clover, is found on surviving recorders bearing the name Hans Rauch von Schrattenbach, again more often as a double mark. Although we know little about this maker, Schrattenbach is a small village in the Argau region of Germany—and, at that time, "von Schrattenbach" would not have been so much a sign of nobility as a simple indication that he wasn't living there anymore. Here, speculation about where he *did* live is rife, but logic would suggest the more urban setting of nearby Ulm or Augsburg.

The last chart bears a single B, up to the present time not linked to any known maker or surviving instruments. Attributing this B mark to members of the Bassano family, which has been suggested, seems to me to be the weakest in this particular conundrum, with the argument in favor of the "rabbit's feet" !! symbols being far more plausible for this family of makers.

An interesting feature of this last table is that, in addition to the famous XV-note fingering, there is also an intriguing alternative given, which actually looks suspiciously similar to the fingering given some 25 years later by Jambe de Fer—and which today would be considered close to the standard "Baroque" fingering for this note *(see Figure 1 directly below)*.



Infuriatingly, Ganassi gives little indication of what players could do with their seven extra notes. Despite all the fuss we make about these extra notes today, he uses only two of them in his diminutions. The highest note used is note XVI, which is used only twice; the next highest, note XV, is used only six times, and between them they occur in only four of the diminutions.

It must be added that the aforementioned appendix of 175 variations in the Wolfsburg example does contain these notes in 12 of the 175 variations, even rising to a high b♭'' in one of them—but, as mentioned, we cannot be sure that these were ever intended for the recorder.

Deconstructing Ganassi

The instrument as we know it today first came to prominence during the late 1970s, when several recorder makers were independently involved in their own experiments to reconstruct a recorder that could be played with Ganassi's fingerings. The best-known attempts were undoubtedly those conducted independently in 1975 by both Fred Morgan and Bob Marvin.

Morgan made his first "Ganassi" instrument in that year, following drawings made in Vienna a few years earlier. In his 1982 article in the journal *Early Music* (vol. 10, no.1, pp. 14-21), he outlined the process of this discovery and the technical criteria required by an

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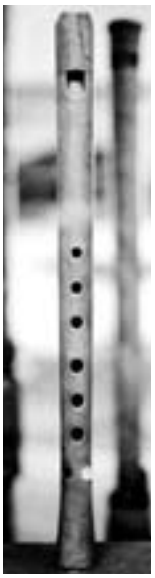

instrument to enable it to play with Ganassi's fingerings. This article described a recorder, subsequently identified as SAM 135 from the Vienna KHM collection (*see Figure 2 at left, photo of SAM 135*), as follows:

When I first began to think of making such an instrument (at the instigation of a recorder player), I had measurements for two different g' instruments, both in the Sammlung alter Musikinstrumente of the Kunsthistorisches Museum in Vienna, which I had obtained on a measuring trip three or four years previously. One of these has a contracting bore and does not play successfully with Ganassi's fifteenth fingering, but the other has a basically cylindrical bore with an expansion at the bell. The voicing of this instrument is badly damaged, and I had not tried Ganassi's fingerings on it as I was unaware of them when I measured it; but in the light of these fingerings the bore looked hopeful. A copy made from the measurements sounded well, and certainly played the fifteenth note with Ganassi's fingering, though really a little too high. The notes above it were fine, and their pitch could be adjusted by small changes in fingering; but there was no possibility of adjusting in this way the note itself, which, even with the use of all the fingers, still tended to be sharp.

A minor modification to the length of the bell and the amount of flare (though one thought of [this] only after due soul-searching about a possibly willful change to an old design) gave the note, and also the fundamental well in tune. The original g' instrument in Vienna is the only one I know of with this bell-flared cylinder bore. Almost certainly (we can say from Ganassi's statements) it was not actually intended by its maker to play Ganassi's new high notes, but it embodies the principle by which we can now make instruments that do. The important point is that this new 'Ganassi' recorder has come about through an examination primarily of Ganassi's theoretical work, and secondarily by the lucky discovery of this one surviving instrument on which a design intended for a special purpose not envisaged by its 16th-century maker could be based. So this new instrument is by no means a copy, but does derive directly from the work of the old makers.

A careful reading of this statement tells us that Morgan never actually claimed that this instrument had any direct connection with Ganassi. He states that a copy made from the measurements played Ganassi's note XV, but sharp.

He went on to add, "*we can almost certainly say that it was not intended by its maker to play Ganassi's new high notes.*" However, despite his obvious reservations, a legend had been born!

Something of the awe accorded this instrument at the time can be seen in the following excerpt from an article by Angelo Zaniol, which was printed in French, German and English magazines during the mid 1980s.

If this mystery has at last been solved, it is thanks to the research of Fred Morgan, the genial Australian recorder maker, urged on by his friend Frans Brueggen, prince of contemporary recorder players. Starting from some theoretical considerations of a rather simple nature (but as always they must be thought of and applied by someone), Mr. Morgan remembered that there survived in that inexhaustible mine, the Kunsthistorisches Museum in Vienna, a Renaissance recorder in g' with a most unusual bore, to which no one had paid much heed, its bevel being so damaged that it could not be sounded. A copy of this recorder, slightly modified to correct certain untrue notes, proved his intuition true—here indeed was the instrument so long sought. Its re-discovery is memorable because this recorder, as Ganassi said, is capable of truly exciting exploits.

One of the major problems with Ganassi's treatise is the lack of good translations of the Venetian dialect used in the original. Indeed, the only good translation known to me is the recent French publication mentioned in the bibliography, and I have found no passage in *Fontegara* that comes close to "*truly exciting exploits*." (Apart from the passage given earlier, there is no other mention in the treatise of specific instruments.)

However, there was another reason why the Vienna KHM instrument achieved so much fame. Morgan spent some time living in The Netherlands at the beginning of the 1980s, and during his stay taught a recorder-making class at The Royal Conservatory of The Hague. There, he generously distributed to the many eager students a drawing of his new "Ganassi" instrument, which quickly achieved an immediate and thorough circulation throughout the recorder-making community.

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It should also be remarked at this point that this type of instrument is also essentially a simple recorder for the novice maker to construct. With its cylindrical bore that requires the least tools, and with Morgan's simple ring and two-joint constructions—allowing the separation of the tuning area (the body) from the sound department (the head)—the model provides the inexperienced recorder maker with hours of fun switching between piles of used headjoints and bodies.

At about the same time, a different approach was being used by the American recorder maker Bob Marvin. He had toured European museums in 1970 and apparently tested all recorders for their ability to play Ganassi's high notes.

His subsequent groundbreaking article in the *Galpin Society Journal* of 1972 mentioned only one such candidate instrument, an ivory alto recorder in Paris. Marvin went on to construct his own "Ganassi" recorder, working from a very different angle. Rather than copying the Paris instrument, he based his reconstruction on the frontispiece woodcut of the book, scaling the instrument from the dimensions of the player's face.

It is interesting to recall Marvin's comments about his approach, in the spring 1978 *FoMRHI Quarterly* (the publication of the Fellowship of Makers & Researchers of Historical Instruments). He wrote about a theoretical "Ganassi" recorder:

It seems unlikely that such a bore would have been developed just to play the third 8va [octave]; it would seem more likely that the tone quality was what was sought, with the upper register a serendipitous bonus.

Of his own instrument, which—despite its narrower bore and window—turned out to have fairly similar characteristics to Morgan's instrument, he added:

While the third 8va [octave] is 'there,' it is not easy to play, and I doubt that much satisfactory music can be made up there. A player can get the notes, but to play expressive melodies seems terribly limited by the poor response of the notes and the difficult fingering transitions.

Despite the difficulties of fingering these third-octave notes, the booming strength of the lower notes soon sent trumpet waves throughout the recorder world. The supremacy of Morgan's design was underlined by its use in recordings made by Frans Brüggen and others. With the plans readily available, the "Ganassi" recorder spread rapidly, with each maker adapting Morgan's original design to their own style. I have even seen an advertisement from the mid 1980s showing that there was an attempt to make the name "Ganassi" a registered trademark!

The beginnings of dissent, but the myth continues

Privately, however, the situation was a little different. Murmured voices were starting to be heard at recorder festivals, as makers discussed the pros and cons of the "Ganassi" model, argued about the reasons why there was apparently only one left, and shared experiences of past museum visits. Slowly, it became evident that other recorders, even some of the larger basset sizes, would also play with Ganassi's fingerings.

In Vienna, however, following remodeling of the instrument galleries in the early 1990s, the fame of SAM 135 was celebrated by giving it a prominent place in a new showcase of Renaissance recorders. Many recorder makers visited Vienna to measure the instrument—and some near disasters caused a ban to be imposed on measuring recorders in the collection.

Recorder players too were doing their best to keep the name Ganassi in vogue. No debut recording was complete without at least one Italian sonata played on either an alto-sized instrument, or on a soprano version, which angelically played these pieces up in the musical stratosphere.

Nobody seemed to question the logic of playing such late pieces on an instrument purportedly dating from almost a century earlier. What started as a creative and interesting experiment soon became *de facto*, and "Ganassi" recorders were even seen clambering into the late-17th-century repertoire—before Morgan stopped the idea of a soprano version, preferring instead to make copies of the narwhal-tusk recorders found in Copenhagen's Rosenborg castle.

Returning to the situation of the 1980s, one of the most positive contributions made by the "Ganassi" recorder was in the contemporary music field. We can well imagine the impact this instrument had on composers more accustomed to the soft, fragile sounds of the Baroque model. In the longer term, this has meant that the "Ganassi" recorder ironically has been used increasingly often in new works. A recent search of Walter van Hauwe's online catalog returned 40 contemporary works written specifically for the "Ganassi" recorder. In many of these cases, even the most neutral listener would have to conclude that the instrument suits the piece.

It is surely here that the "Ganassi" recorder can really come into its own, with its strong, flexible sound and easily-produced harmonic tones, making it far more at home in recent works than in the fast and melodic writing of an Italian sonata.

The revelation

In 1996, the English researcher Maggie Kilbey (formerly Lyndon–Jones) earned a traveling stipend to study and catalog the different !! marks found on the great majority of the surviving woodwind instruments from the Renaissance. In addition to the 40-odd recorders in the Vienna KHM, there are also four original cases for recorders. These rare objects (only eight of them survive worldwide) are highly interesting pieces in their own right, because they give an indication of the combinations of sizes found in original recorder sets.

It was while studying the remains of one of these cases, inventory number SAM 171 (*see figure 3, lid and detail of stamp*), that she discovered a small !! mark inside the lid (*photo inset*). This mark can by no means be considered standardized; in fact, her eventual report in the 1999 *Galpin Society Journal* classified all the surviving instruments into groups based on the style and shape of their stamps, and found the existence of more than 20 different styles of the !! mark.

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Figure 3. SAM 171, lid and detail of stamp.

She found that the lid stamp matched the one found on the bell of SAM 135, the celebrated "Ganassi" recorder (*see figures 4 and 5, detail of stamp on bell*). Unfortunately, this case had been severely damaged in the course of the 20th century—but, despite this, it had been measured in its original condition during the 1920s and the leather sheath that once covered the outside of the tubular construction is surprisingly still intact. In short, it was possible to compare the length of SAM 135 with the remnants of the case and to state that the "Ganassi" recorder had possibly once belonged to it.

Figures 4 and 5. SAM 135, detail of stamp on bell.

This came as a great shock to many, including to me—finding that the celebrated recorder, SAM 135, might have been just part of a normal recorder quartet.

It should be mentioned at this point that the case, SAM 171, has compartments for four recorders of three sizes: the largest corresponds to today's tenor recorder, two of the altos would have been the middle sizes, and a soprano recorder would have completed the set. These sizes were, in standard Renaissance fashion, a fifth apart. So instead of the more usual Renaissance bass in f, tenor–altos in c' and soprano in g', what we find here is a consort about a fifth higher: recorders in c', g' and d", relative to a pitch standard about a semitone higher than modern pitch.

This small consort makes an otherwise standard configuration for four-part music and would especially suit people with small hands! The tenor would play the bass part, the alto and its partner the two middle lines, and a little soprano the top part. It's rather intriguing to think of our modern "Ganassi" recorder—far from any soloist pretensions—playing the *cantus firmus* of the tenor or alto lines of a Renaissance vocal piece, rather than the more evocative tiptoeing of the 16th-notes in an Italian *canzona*.

While some readers might be incredulous at the idea of a consort comprising only small sizes, there is at least supporting evidence that this practice was not unique. In a Genoese document of 1592, reported by Bruce Haynes in 2002 in *A History of Performing Pitch: The Story of "A,"* the following description was found:

E prima sei cornetti muti, tutti in una cassa, di tuono di tutto punto, di legname di busso; sei cornetti chiari, il tuono loro ha da essere di mezzo punto giusto, tutti in una cassa di legname di busso, parte dritti e parte mancini; sei fiffari, il tuono loro sia di mezzo punto giusto, di legno di busso, tutti in una cassa; otto flauti tutti in una cassa, le qualità loro saranno due sopranini piccoli, quattro più grossetti e due tenolotti, seguenti alli quattro però senza chiave in fondo, il tuono loro sia di mezzo punto e di legno di busso. Tutti le detti instrumenti siano di legname piuttosto massiccio secco e non fresco, di tuono soprattutto giusti, e per averli in tutta perfezione si potrà far capo a Venezia a Gianetto da Bassano, o vero Gerolamo degli instrumenti, o Francesco Fabretti e fratelli, perché tutti questi sono molto intelligenti di questi instrumenti.

["First, six muted cornetts, together in a case, at the pitch of *tutto punto*, made of boxwood; six light-colored (standard?) cornetts, the pitch of which has to be exactly *mezzo punto*, together in a case of boxwood, partly (for) right-handed, partly (for) left-handed players; six flutes, the pitch of which should be exactly *mezzo punto*, made of boxwood, all in a common case; eight recorders, all in a case, the kinds of which will be two small sopraninos, four a little larger, and two tenors, following (?) the four (previous) but without keys at the end, the pitch of which should be at *mezzo punto* and made of boxwood. All the above instruments should be of rather solid, well-seasoned wood, and above all correctly pitched, and to have them in perfection one could turn to Venice to Gianetto da Bassano, or else Gerolamo "of the instruments," or Francesco Fabretti and brothers, because all of them are most skilled in these kinds of instruments."]

As Peter van Heyghen has pointed out in his magnum opus, *The Recorder Consort in the Sixteenth Century: Dealing with the Embarrassment of Riches*, this passage is interesting not only because of the indication of the pitch *mezzo punto* (evidently a semitone above a pitch standard around A=440 Hz—or, in other words, A=466 Hz), but also in the description of an eight-piece set of small, keyless recorders. In addition, there is also the mention of a certain "Bassano" as one of the Venetian makers. It is commonly understood that a tenor recorder size is the largest that can be built without keys, and the reference mentions *tenoletti* as what would logically be the largest size.

What is described here is almost certainly a consort comprising two sets like the Vienna type, which could be used for eight-part double choir music.

Other surviving recorders

As stated earlier, in recent years a number of other existing recorders have been found that can play at least the essential extra notes of Ganassi's tables. These include most of the 10 surviving recorders that are stamped with the AA symbol and therefore attributed to the Schnitzer family. Other recorders bearing the !! marks have also been found to produce those notes, such as the alto in Paris mentioned in 1972 by Marvin. Additionally, there are a lone tenor in Bologna, a tenor and basset in Rome, a basset in Hamburg, and another keyed tenor in Vienna plus a shorter tenor in the same collection. In fact, it does appear that approximately 12% of all surviving Renaissance recorders will play Ganassi's high notes.

In many cases, it might be more accurate to say that the high notes can be squeezed out of the instruments, because—as Morgan found with his copy of SAM 135—these notes are often far from perfect. This brings to mind Ganassi's comments in his introduction to the fingering charts: "*Certain craftsmen tune the instrument differently and their ear varies according to their way of playing*."

It begs the question of whether there was ever a separate regiment of "Ganassi" recorders ....

All of the recorders mentioned above seem to have once been part of a larger consort, because there are often non-Ganassi sister instruments that have survived to confirm this. It begs the question of whether there was ever a separate regiment of "Ganassi" recorders, lying await and ready to spring into action whenever the top line exceeded the gamut! Certainly there seems to be no organological evidence for this, apart from that found in the field of iconography, where trumpet-shaped recorder-playing nymphs and shepherds abound in pastoral settings.

Nevertheless, a point that was stressed at the 2003 Renaissance recorder symposium in Utrecht, iconography is at best an ambiguous tool in the search for hard evidence about recorders and their use. Many of these "Ganassi" images appear to be of the smaller sizes, which may indicate that some smaller consort sizes were more often built in a trumpet-like shape than their larger confreres. The problem here is the lack of a representative body of surviving soprano and alto recorders—meaning that we simply don't have sufficient information to confirm this.

Certainly, if we return to the issue of SAM 135 and the four-recorder case SAM 171, we can see that the most likely surviving instrument that could originally have been the largest size of this consort, SAM 150, is what we might call a "normal" consort tenor. It has the normal range of a consort recorder and was deemed by Marvin as the best preserved of three similar instruments in Vienna, resulting in its being the basis for most Renaissance tenors made by modern makers.

If we can accept a connection between these two surviving instruments and the case, we may well have the basis of an interesting consort variation for modern makers to produce: strong, small instruments with wide windways, either as part of a larger ensemble or making up their own stand-alone consort. Could these have been the sort of instruments to which Praetorius refers in his remark, "*weil die kleinen gar zu starck und laut schreien*" (because the small [recorders] scream too strongly and loudly)?

What precisely defines a "Ganassi" recorder?

We have seen that to play Ganassi's note XV, an instrument has to be a little longer and a little less conical than the more normal Renaissance design. However, to play note XIV as 0/1-----7 or a variant, other design criteria have to be satisfied that seem to be of a more individual nature on each instrument.

By way of comparison, figure 6 below shows a photo of three tenor-sized recorders, each having the !! mark: at right, the tenor in Vienna KHM (SAM 150) mentioned in the last section; in the center, a similar instrument (717) in Rome's Museo degli strumenti musicali; and at left, another smaller tenor (594) in Bologna's Accademia Filarmonica.

Figure 6, photo credits. (r) courtesy of Kunsthistoriches Museum, Vienna; (c) courtesy of Museo degli strumenti musicali, Rome; (l) photo by Marco Tiella.

Although there is a difference of a whole tone between the Bologna instrument and the two others, it has been enlarged in this image to provide a proportional comparison.

These two last instruments can just about produce the high notes of Ganassi—but, as mentioned earlier, the Vienna SAM 150 tenor on the right cannot. The small but distinct differences between the tone-hole positions and diameters, as well as the slight differences in their bore profiles, are what enables the instruments in Bologna and Rome to play Ganassi's high notes.

There's no magic here, but instead a slightly different approach to the design.

Conclusion

There seems to be little evidence to support our accepted view that there was a separate type of Renaissance recorder, made with the specific aim of increasing the recorder's upper range. That some players (like Ganassi) were interested in expanding the range with some extra notes is understandable, but any direct connection between Ganassi and the recorder SAM 135 in Vienna must remain pure speculation. SAM 135 was probably part of a four-recorder consort where it would typically have been used as one of the middle voices of a four-part consort.

Many other recorders survive that share features of this instrument and could claim to "play" Ganassi's high-note fingerings, but which almost certainly belonged to a larger consort.

The "Ganassi" recorder as we know it was actually "invented" in the 1970s, following ground-breaking research by several makers. The Morgan design became the most prominent, both through recordings and concerts by celebrated players, and due to his generous distribution of the drawing he made in Vienna. It has since become a favored part of the modern recorder player's arsenal and has had more than 40 pieces written specifically for it.

Postscript

In the two years that have passed since the European Recorder Performance Festival, I have concerned myself with answering some of the questions that were posed following my lecture. Mostly these revolved around the idea of a small consort using cylindrically-bored recorders for the high parts. I felt that the reluctance to admit to such an idea was based mostly on our familiarity with the Morgan and neo-Morgan "Ganassi" altos rather than any fundamental objections.

I resolved to make a small consort of instruments in c', g', g' and d'' to test my theories, making close copies of the Vienna instruments SAM 150 and 135 for the c' and g' recorders, and using a projection of the latter as the basis for the tiny d'' recorder. Of course, a lot depends upon the voicing of the instruments—and, by using the information I had about the originals, along with some ideas of my own, I managed to produce instruments that were fairly homogeneous and had less trumpet-like qualities in their low notes.

I subsequently used these instruments in lectures given at the Royal Academy in London as well as the Escola Superior de

Música in Porto, Portugal. The general reaction was that the idea was well worth pursuing. Although the sound of the recorders is high, it has such an enchanting quality that listeners were often persuaded that the instruments were lower than their actual sounding pitch.

These instruments have been tested in concert situations by the ensemble Mezzaluna at both the Brügge and Utrecht festivals in 2005, where they were used effectively in performances of homophonic dance tunes. Experiments were also made playing polyphonic compositions; here, their suitability largely depends on the tessitura required of each instrument—particularly in the soprano part, which can quickly become dominant if it rises above note XII (soprano fingering=high A).

Other trials were made using these instruments on the top line of more "normal" consorts—and, again, responses by both players and listeners were largely positive. Using this g' instrument on the top part of a normal f, c', c', g' consort gave a pleasing variation to some settings, especially where the top part performs a more "guiding" melodic function in the music. The open-sounding notes XII, XIII and minor XIV give an entirely different feel to a piece, when compared to those notes played on their more closed, conically-bored counterparts, which often struggle to produce these notes cleanly.

Last, some experimentation using the d'' soprano on top of the normal f, c', c', g' consort in performances of Holborne's five-part *Pavans* and *Gaillards* proved a great success. Following Praetorius's instructions for dealing with such mixed-clef pieces using four sizes of instruments a fifth apart, they brought new life to these well-known "standards."

It is my wish to continue to develop these instruments, which I feel have the potential to change some of our more established ideas about the nature of the Renaissance recorder consort.

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