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Boring for Britain (Dolmetsch Recorders 1920–1980): Six Brief Addenda

Though a long article about Dolmetsch recorders, published in *The Galpin Society Journal* last year, 'Boring for Britain' (BfB hereafter)[1] by no means exhausted its subject. One of my aims as author, looking at about 1½% of the Dolmetsch recorders produced between 1920 and 1940, was to see if definite design trends could be made out when the instruments were arranged in date order of manufacture and then compared. Conclusions reached seemed to me to be significant—showing that Dolmetsch recorders of the now-notorious 'modernized' type evolved in the late 1930s from an earlier generation of Baroque-type 'style copies', playing and sounding much more like eighteenth-century originals—but they were of course provisional. If instruments unknown to me at the time of writing subsequently came to light, and turned out not to fit neatly into the line of development proposed in BfB, then the line would need re-routing. (All forms of comparative research have this vulnerability built in. Different comparisons produce different results.) Of the six brief addenda presented here, one does turn a newly-accessible instrument to evidential account, and does go on to modify BfB's main story slightly. The other five pick up threads of argument cut short in the original article, for reasons of space, and try to do more with them.

1. WHY A[1]415Hz?

Arnold Dolmetsch's famous 'Green Harpsichord', entered in the Arts and Crafts Society's 1896 exhibition and finished just in time for the exhibition opening, had a three-position transposing keyboard allowing him to tune it up and down quickly and uneventfully. Keyboard shifts did most of the work: strings kept in more or less constant tension were not very likely to break during final fine-tuning, nor would the harpsichord's tone suffer. In a lecture-recital given shortly after the exhibition closed Dolmetsch explained his practical reasons for building this degree of tuning flexibility into the instrument:

> I may tell you in connection with my new harpsichord, for it is especially intended for accompaniments and orchestral purposes, and as the pitch is now rather variable—a great many people using the French pitch, and many still using the English pitch, whilst I have a pitch of my own, a semitone below the French—I have made this instrument so that it can be transposed to anyone of those three pitches.[2]

[1] Andrew Pinnock, 'Boring for Britain: The Design, Development and Mass Deployment of Dolmetsch Recorders, 1920-1980', *The Galpin Society Journal* 76 (2023), pp.32–66; 212–214.

[2] Arnold Dolmetsch, 'The Chamber Music of Purcell, Handel, and Bach', *The Journal of the Society of Arts* 45/2300 (18 December 1896), p.79. See also Edmond Johnson, 'Arnold Dolmetsch's "Green Harpsichord" and the Musical Arts and Crafts', in Roger Moseley and Annette Richards (eds), *Keyboard Perspectives* 10 (2017), pp.145–167.

Since Dolmetsch had grown up in France and studied in Brussels he was thoroughly used to 'French pitch', the *diapason normal*. (Musicians in other parts of mainland Europe and the USA had adopted it too.) A French law passed in 1859 defined it precisely: $a^1$435Hz. The 1890s version of Dolmetsch 'old pitch' slotted in a semitone below $a^1$435Hz therefore: around $a^1$410Hz.

By English pitch Dolmetsch (in 1896) meant the very high Philharmonic Pitch standard to which most British orchestras and bands tuned in the latter half of the nineteenth century, $a^1$452–455Hz. Campaigners trying to narrow the gap between Philharmonic Pitch and far more singer-friendly *diapason normal* won their first major victory in 1896 (too late to influence Dolmetsch's thinking on transposition while he was designing the Green Harpsichord), when London's two leading orchestras tuned down to $a^1$439Hz—establishing a 'New Philharmonic' pitch standard to which others gradually came round. For wind players and organ tuners the cost implications of adjustment were considerable. Dolmetsch escaped a decade of pitch-related wrangling by moving to live and work first in the USA and then in France. By the time he returned the artistic case in favour of $a^1$439Hz had been widely conceded and the long, expensive process of national conversion to it was well under way.

As points of reference from which Dolmetsch old pitch could be measured off, $a^1$439Hz and $a^1$435Hz differed by only 16 cents—one sixth of a semitone. Both 'were about a semitone above … the standard pitch … obtaining up to the first half of the eighteenth century';[3] to which Dolmetsch had reverted by dropping about a semitone back down. 'About a semitone' was accurate enough for most purposes. Since temperature and other fluctuations could result in noticeable pitch drift from day to day and even during the course of a concert it would have been rash to claim any greater degree of precision.[4]

The Bressan treble recorder that Dolmetsch acquired in 1905 plays 'nearly three quarters of a tone below modern pitch', or did when Jeanne Dolmetsch described it in a 1973 record sleeve note.[5] (Modern pitch had by then notched up to $a^1$440Hz.) When Arnold used the Bressan alongside viols and virginals—as he often did through the decade 1910–19, before losing it—it would have fitted well into a consort tuned to Dolmetsch's $a^1$410Hz personal standard, or just a little lower.[6]

A new recorder matching the pitch of his lost Bressan would, from Dolmetsch's point of view, have been the most convenient replacement for it. In 1919, when the loss occurred, Dolmetsch had no-one else's recorder-playing convenience to consider; but before making recorders in quantity and selling them to customers outside the immediate Dolmetsch circle he clearly did need to fix on a pitch standard that would suit others beside himself. 415Hz would allow beginner recorder players to check their tuning against pianos at 439Hz, and to play along with instruments at 439Hz if fellow ensemble members were skilled enough to transpose down a semitone. 415Hz recorders could be flattened off to 410Hz 'without serious injury to [their] intonation';[7] and played along with keyboard and other instruments at 435Hz when they had been flattened off (subject to the same semitone transposition proviso). Dolmetsch arrived at 415Hz by a process of

[3] Gerald Hayes, *Musical Instruments and their Music 1500–1750. II: The Viols, and Other Bowed Instruments* (London: Humphrey Milford/Oxford University Press, 1930), p.198.

[4] No one standard pitch obtained up to the first half of the eighteenth century. Though a generally reliable spokesperson for Arnold Dolmetsch—first Hon. Secretary of the Dolmetsch Foundation, and first editor of the Foundation's journal *The Consort*—Hayes may have been putting words into Arnold's mouth here.

[5] Jeanne Dolmetsch, sleeve note for 'Apollo's Feast', LP record (Eynsham, Oxford: Abbey Records, 1973; catalogue number PHB 731).

[6] Alterations by Carl Dolmetsch to bring the Bressan recorder into agreement with a Stanesby treble recorder added to the Dolmetsch collection rather later cannot be ruled out. In the Bressan's current, heavily restored state an ivory washer pushed up to the shoulder of its centre joint top tenon slightly extends the sounding length of the instrument and may make it play a little flatter than it did in Arnold's day.

[7] David James Blaikley, 'An Essay on Musical Pitch', Appendix (pp.235–253) in Charles Russell Day and Thomas Bradney Shaw-Hellier (eds), *A Descriptive Catalogue of the Musical Instruments Recently Exhibited at the Royal Military Exhibition, London, 1890* (London: Eyre & Spottiswoode, 1891), p.251. Blaikley was the leading British wind instrument acoustician of his day. 'An Essay on Musical Pitch' deals extensively with pitch incompatibilities and ways to limit their potential for harm. '[T]he desire of every wind-instrument player [is] to be assured that his instrument is fully sharp; for although every such instrument can be tuned down by the player, it is impossible for him to raise its pitch. If there is any doubt about the pitch of a new instrument in a band, a player will always give "the benefit of the doubt" in favour of a slight sharpening … The amount of flattening which wood wind instruments can bear without serious injury to intonation is about one-fifth, or at the most one-fourth, of a semitone' (Blaikley (1891), pp.244, 251).

triangulation, probably, adopting it not as 'one of the eighteenth-century pitches'[8] at which surviving recorders known to him were found to play but as a flexible threshold position facilitating movement between old and modern pitch-worlds. (His Green Harpsichord's transposing keyboard did something similar.) If Dolmetsch had a personal favourite among eighteenth-century pitches it was a^{1}410Hz, not a^{1}415Hz.

In a 1994 conversation with the Horniman Museum's Keeper of Musical Instruments,[9] Carl Dolmetsch said that the first recorders made by Arnold (his father) played at a^{1}405Hz.[10] By then a consensus had developed among makers used to testing and measuring eighteenth-century recorders, and to copying them closely, that most originals would have played flatter when new than they did after 200 or more years. Over time, wood shrinkage and bore distortion would tend to push their pitch up. Fred Morgan for instance, in his 1982 article 'Making Recorders Based on Historical Models', noted that: 'Most of the old instruments I know play appreciably lower than A415, and they would have been, in my opinion, somewhat lower still when they were new'.[11] Arnold Dolmetsch may have reached the same conclusion decades before, and acted on it; or Carl may have been constructing testimony to suggest that he did. To my knowledge no early Dolmetsch recorders tuned as low as a^{1}405Hz survive in public or private collections. (But see Addendum 2.)

In May 1939, the International Organization for Standardization met in London to take advice on discrepant pitch issues and try to reach consensus. The a^{1}440Hz standard still current emerged from these discussions.[12] Even in countries formerly adjusted to it, a^{1}435 *diapason normal* was officially obsolete when the work of post-war musical reconstruction began. Specialist performers of Baroque music and the makers supplying their equipment had from then on only one 'modern' datum to refer to when setting different but related standards for themselves. Dolmetsch's a^{1}415Hz compromise was, it turned out, perfectly pre-adapted to tuning conditions in the post-war world; while the a^{1}410Hz low pitch instruments built for use by pioneering early musicians in pre-war Germany and Switzerland had to be retuned or replaced.[13]

2. EARLY DOLMETSCH RECORDERS IN THE RENDALL COLLECTION (AND ELSEWHERE)

Arnold's 'first experimental recorder', so described by Jeanne Dolmetsch, 'itself now a museum piece',[14] was presented to the friend who found his lost Bressan in a London junk shop, bought it and handed it back to Arnold as a gift. The friend was F. G. Rendall of the British Museum, a collector of old woodwind instruments. The University of Edinburgh acquired his collection in 1969.

Edinburgh MIMEd 0260, ex Rendall, surely is that first experimental recorder.[15] It is not an instrument with which any self-respecting maker (leave alone Dolmetsch) would be remotely happy were it intended for sale or presentation under normal circumstances, but the story explaining its presence in Rendall's collection fully redeems its idiosyncrasies. Dolmetsch did not have the original Bressan to hand when making MIMEd 0260. He may have referred to drawings and to measurements taken prior to its loss. He certainly consulted youthful experience as an apprentice organ-builder. MIMEd 0260 has a straight chisel-type edge, bevelled at the tip. A 'beard' and 'ears' have been fitted to shade the upper ramp and window (adding extra height to the upper ramp's side-walls and extra projection to the window sill). These are typical organ flue pipe features, seldom if

[8] Edgar Hunt, *The Recorder and its Music* (London: Herbert Jenkins, 1962), p.132.

[9] Margaret Birley, at the time.

[10] Andrew Mayes, 'Arnold Dolmetsch: A Lost (and Found) Bressan Recorder and its Replacements', *The Consort* 76 (June 2020), p.73.

[11] Fred Morgan, 'Making Recorders Based on Historical Models', *Early Music* 10/1 (January 1982), pp.14–21, at p.14.

[12] Re-affirmed in 1953, for the avoidance of post-war doubt. See Bruce Haynes, *The History of Performing Pitch: The Story of "A"* (Lanham, MD: Scarecrow Press, 2002), p.361.

[13] For an account of difficulties experienced by staff and students at the Schola Cantorum in Basel during this period of transition from a^{1}435/410Hz to a^{1}440/415Hz, see Anne Smith, *The Curious Story of Low Pitch at the Schola Cantorum Basiliensis* (Basel: Forschungsportal Schola Cantorum Basiliensis, 2020). Available here: <www.forschung.schola-cantorum-basiliensis.ch/de/forschung/ina-lohrproject/smith-lowpitch.html>, accessed 20 May 2023.

[14] J. Dolmetsch (1973).

[15] Photo here: <https://collections.ed.ac.uk/mimed/record/17463?highlight=*:*>.

ever encountered in a high-quality recorder. One of the tone holes has been relocated, filled and redrilled higher up the instrument. MIMEd 0260 plays around a^{1}425Hz today, well above 415, and would play higher still without its ears. It is ≈10mm shorter than the original Bressan.

A very early Dolmetsch treble discussed by Andrew Mayes, unmarked but identified as a Dolmetsch by Carl when he revoiced it in the 1970s, apparently plays around a^{1}420Hz today.[16] It is practically the same length as Dolmetsch's first-ever name-stamped and numbered treble (Arnold Dolmetsch / 1), now on display in the Horniman alongside his original Bressan, suggesting to Mayes that #1 would probably be found to play around a^{1}420Hz too. Since these two instruments are the same length as the original Bressan[17] and have very similar, Bressan-like turnings they were probably made with reference to the original, after its recovery and return to Dolmetsch.[18]

Since the pitch at which Arnold Dolmetsch #1 actually plays is unverifiable,[19] it is not at present possible to decide which of two hypotheses more or less equally consistent with (still very patchy) evidence comes closer to the truth. Either Arnold started high, in the a^{1}425–420Hz zone, and then came down to a consciously chosen a^{1}415Hz plateau, or he oscillated rather unpredictably between high–low, 425–405 poles before settling at 415. It did take him 'a long time' to work out how bore profile irregularities affected tuning and other aspects of recorder performance. The task 'proved much more difficult than [he] expected'.[20] While he was experimenting, the pitch at which his instruments played would have been somewhat variable. Carl's later complaint—that eighteenth-century makers had planted 'deliberately misleading … information on the dimensions of the tube … [in] encyclopedia[s] of the time'—hints at a degree of frustration on his father's part, as if he had fallen into the alleged trap and then had difficulty climbing out of it.[21] (Encyclopedias of the time in fact say next to nothing about recorder making.)[22] Certainty in these matters will not be achieved until quite a few more of the low-numbered Dolmetsch recorders probably still in private hands have been located and tried out.[23]

The Rendall Collection includes two early twentieth-century recorders, both unmarked, both attributed to Dolmetsch and both tentatively dated 1919 by Edgar Hunt in the 1980s. Hunt had been called in to help with recorder identification and (in the absence of Dolmetsch stamps or serial numbers on either of the instruments in question) had only the story of the Dolmetsch-Rendall recorder swap to go on. MIMEd 0260, an obvious experiment, is discussed above. MIMEd 0259, finished to a far superior standard,[24] fits more comfortably into Mabel Dolmetsch's (1957) version of the story. It could reasonably be described as 'a choice new recorder', and it might—if sufficiently early in date—have been 'considered to be the first perfect product of Arnold's creative art'.[25] Hunt kept both in contention; but a decision between them did have to be made when Edinburgh agreed to loan a single exemplary instrument to the Horniman and to Les Musées du Mans in Le Mans, France, for inclusion in their jointly curated Arnold Dolmetsch anniversary exhibition (1991).[26] That decision went in 0259's favour.

[16] Mayes (2020), pp.71–72.

[17] Carl Dolmetsch replaced the original Bressan's badly cracked ivory beak with a new one when restoring the instrument, and may have altered its length very slightly during this restoration process. See also footnote 6.

[18] See BfB Appendix One for more on the loss-and-return timeline.

[19] Horniman Museum conservation policy precludes a test. If Carl Dolmetsch had inspected Arnold Dolmetsch #1 ahead of auction and its Horniman acquisition in 1994, and played it himself before telling museum staff that Arnold started making recorders at a^{1}405Hz, a note to that effect would have been placed on file in the museum. No such note exists. I am grateful to Mimi Waitzman at the Horniman for checking museum records, and for her advice on their interpretation.

[20] Arnold Dolmetsch, *Dolmetsch and his Instruments* (Haslemere: A. Dolmetsch, 1929), p.4.

[21] Carl Dolmetsch and Leslie Ward, interview transcript in John Farleigh, *The Creative Craftsman* (London: G. Bell and Sons, 1950), p.177.

[22] Arnold himself wrote that 'the old treatises, so full of details and so precise concerning the proportions of Oboes, Flutes, and other similar instruments, are curiously silent about recorders' (A. Dolmetsch (1929), p.4).

[23] <#50 or so.

[24] Photo here: <https://collections.ed.ac.uk/stcecilias/record/113704>.

[25] Mabel Dolmetsch, *Personal Recollections of Arnold Dolmetsch* (London: Routledge & Kegan Paul, 1957), p.132.

[26] This exhibition marked the fiftieth anniversary of Arnold's death. It formed part of a month-long programme of events in his Le Mans birthplace. Carl Dolmetsch was a guest of honour in Le Mans, along with other family members, and undoubtedly toured the exhibition.

MIMEd 0259 plays at a[1]439Hz, too high for a Dolmetsch instrument made in 1919. In due diligence conversation with Carl Dolmetsch days before buying Arnold Dolmetsch #1 at auction, Margaret Birley at the Horniman Museum heard from Carl that the earliest Dolmetsch recorders had been built at a[1]405Hz (see Addendum 1), and that MIMEd 0259 deserved its place in recorder history for a different reason—as the first in what turned out to be a very long line of Dolmetsch instruments at modern British standard pitch. Notes of this conversation were passed back to Edinburgh, and entered the public record via catalogue updates made around 2010. Carl's suggested date for 0259, *c*1928, does seem to me to be plausible, but it raises follow-up questions that are hard to answer. (Why 'Rendall was rewarded for his generous deed' after so long a wait for instance,[27] or why Arnold wanted to repay it twice over with recorder swaps spread so far apart.) Rendall acquired 0259 years after 0260, probably. It may have been a gift from Dolmetsch, whose instruments carried serial numbers when intended for sale, or—possible from 1929, when he left his job in the Dolmetsch workshop and set up on his own—a gift or a purchase from Oskar Dawson.[28]

3. 'RECORDERS ARE MADE AT ANY PITCH'

Transposition by a semitone was, for beginner recorder players in the 1920s, a practically impossible feat, as it would be for beginners today. It would have been a challenge even for the most experienced keyboard accompanists. Realistically, recorders at a[1]415Hz could be played for pleasure only with other instruments tuned to the same standard. This limitation hardly mattered while Dolmetsch sold most of his to people eager to join the musical movement that he himself headed, looking to him to make rules and willingly complying with them. But as plans to expand production solidified at the end of the 1920s—with larger workshop premises secured, finance falling into place and new staff hires in prospect—so the needs of clients whom Dolmetsch had yet to reach did have to be considered. For many or most of these pitch would be a deal-breaker.

Dolmetsch and his Instruments, the sales catalogue published in December 1929 to mark the opening of the new workshop—and of course to drum up business—pictured four sizes of instrument (SATB) which could be ordered either in plain wood or ivory mounted. The catalogue did not offer customers a choice of pitch.[29] Two years later the situation was different. Robert Donington's article 'The Recorders', in issue two of the Dolmetsch Foundation's journal *The Consort*, listed five different sizes of recorder, sopranino down to bass, with the promise of a great bass to come.

> Recorders are made at any pitch, but principally at the 'low pitch' at which viols, harpsichords and so on are best kept; and the 'high pitch' which is the normal orchestral pitch of to-day: this enables the recorders to be used in orchestras or with pianos without resorting to key-transposition.[30]

Donington did not suggest that the high pitch models were tonally inferior, or would blend any less effectively than their low-pitch counterparts when played in full (recorders-only) consort. By late 1931, on this evidence, a[1]415Hz recorders were recommended mainly—only?—for use with early string and keyboard instruments, set up for optimal performance at low pitch and best left there.

It may or may not be the case that '[t]he pitch of most Dolmetsch recorders made before [1937] was … A-415'.[31] If the Dolmetsch order books had survived it would be easy to tell how 415 and 439

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[27] M. Dolmetsch (1957), p.132.

[28] On Oskar Dawson and his probable role as the first of Arnold Dolmetsch's workshop assistants to acquire recorder-making expertise, see BfB Appendix Three.

[29] A. Dolmetsch (1929), p.4, with photo of recorders on p.14.

[30] Robert Donington, 'The Recorders', *The Consort* 2 (December 1931), p.8.

[31] Robert Ehrlich, *The Great German Recorder Epidemic: Reinventing the Recorder, 1925–1950* (Portland, OR: Instant Harmony Music, 2021), p.20. According to Edgar Hunt, Carl Dolmetsch took charge of Haslemere Festival planning in 1937 and 'decided to adopt A=440 Hz as the pitch [439Hz, at the time], as it would make cooperation with other musicians easier, particularly singers'. See Edgar Hunt, 'Carl Frédéric Dolmetsch' [obituary], *The Galpin Society Journal* 51 (1998), p.15. Cooperation among recorder players may have been the main goal. Negotiators hoping to persuade Dolmetsch and Hunt to relinquish their separate fiefdoms and back the formation of one UK-wide Society of Recorder Players—a feat finally accomplished in 1937—had to broker agreement on pitch standardization, among other delicate issues. Hunt commanded vastly superior forces, thousands of schoolchildren and their teachers using imported German instruments at a[1]439Hz. Dolmetsch's public move to 439 was a major conciliatory gesture, avoiding schism and allowing young players to transition smoothly from the school recorder world to adult amateurdom.

Figure 1. *From left to right: Dolmetsch treble recorders **H** (unnumbered), **O** (#252) and **K** (#1131). All three at a*[1]*439Hz.*

sales figures compared through the 1930s. Sadly they do not. The workshop's readiness to supply 439 recorders in any of their five standard sizes from 1931 on—recorders 'at any pitch', in fact—implies a high degree of confidence in product quality across the board. Arnold Dolmetsch and Robert Donington

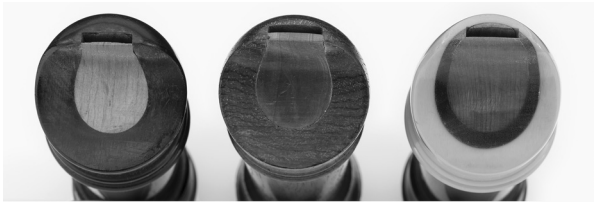

Figure 2. *Windways compared. From left to right: **H, O, K**.*

both credited Carl with the design improvements from which this confidence derived.

Figure 1 shows three a[1]439Hz trebles side by side: **H**, a stubby-headed instrument which evidence reviewed in BfB suggests was made in 1926; **K**, an instrument well on the way to full modernization, made *c*1937–8;[32] and between them a treble recently added to the author's research collection, coded **O** to continue BfB's series. Figure 2 shows all three instruments' windways blowing end on.

H distorts the 2:3 cylindrical: conical bore proportions of original eighteenth-century recorders, joining a shortened head to centre and foot joint sections of regular a[1]415Hz treble recorder length (but moving the tone holes south to compensate for head joint shortening—all explained in BfB). **O** restores the correct proportions, as can be seen, allowing more accurate tuning across the whole range along with voicing for free and full-toned speech right across the range, even at the top. **O** plays high notes effortlessly. Since **O** and BfB's a[1]439Hz tenor **G** have serial numbers only fifteen apart (#252 and #267 respectively), and **G** can be confidently dated 1929, **O** was probably made the same year. Stubby-headed trebles of BfB's **H** type, somewhat compromised in their performance, were not available for nearly as long as BfB suggested they might have been, if they went on general sale at all. (Though stamped Dolmetsch, **H** is not serial-numbered.) BfB needs updating in this respect.

4. BRESSAN, OR STANESBY?

Carl's first (1945) published account of the bag-loss-at-Waterloo story calls the recorder thus mislaid a Stanesby, not a Bressan:

> In 1903 [Arnold Dolmetsch] first included the recorder in his concert programmes; he used an early English instrument by the well-known maker Stanesby … The old Stanesby turned up through the good fortune and kindness of a friend …[33]

[32] **K**'s windway, though flat rather than arched, is still fairly narrow, and still has a lengthwise taper.

[33] Carl Dolmetsch, 'Carl F. Dolmetsch: Music and Craftsmanship', essay in John Farleigh (ed.), *Fifteen Craftsmen on their Crafts* (London: The Sylvan Press, 1945), pp. 41–42. 1903 should have been 1909. See Alexandra Williams, 'The Dodo was Really a Phoenix: The Renaissance and Revival of the Recorder in England 1879–1941', PhD Thesis, University of Melbourne, 2005, p.74 (and Appendix 5, pp.354ff. for the instrument's subsequent outings).

This is on the face of it completely inexplicable.[34] The Dolmetsch collection of musical instruments did contain a Stanesby treble however, and in its Horniman Museum afterlife it still does.[35] According to Jeanne Dolmetsch the Stanesby was left with Arnold for restoration in 1928 but never collected by its owner.[36] Carl could have examined it at any point from then on. As newly-appointed head of the Dolmetsch recorder department he had a strong incentive to improve on inherited designs, wringing every possible advantage from newly-accessible organological evidence. Looking back nearly two decades, through a fog of far more urgent war work, Carl would have remembered this old Stanesby as vividly as the Bressan if he had learned as much or more from it. Talk of another old Stanesby stuck in Carl's mind until at least the 1960s, surfacing then in conversation with J.M. Thomson:[37] the tenor recorder or voice flute belonging to Sir Francis Darwin, repaired by Arnold in 1917 and supposedly the model for Arnold's own tenor copies. BfB's $a^1$439Hz tenor **G** looks remarkably like a Stanesby voice flute, and $a^1$439Hz treble **O** looks very much like **G**. The two are pictured together in Figure 3. There may be hints here, if only visual, of a late 1920s turn away from Bressan-inspired designs more in the direction of Stanesby (though both these makers did belong to the same recognizable school),[38] with which Carl was closely involved and which did deliver the performance improvements credited to him by Arnold Dolmetsch and Robert Donington.

Sir Francis Darwin had published a lecture on the pipe and tabor, played pipe and tabor, and in *Springtime and Other Essays* (1920) described the recorder as his 'chief interest' among musical instruments by that stage in life.[39] Darwin thanked 'Mr Galpin and his family' for revealing 'the astonishing beauty of a quartette of recorders',[40] though he did also cite Dolmetsch approvingly. Sir Francis was one of Dolmetsch's first recorder

Figure 3. *Dolmetsch treble* **O***, #252 (left) alongside Dolmetsch tenor* **G***, #267. Both at $a^1$439Hz.*

[34] The inconsistency was noted long ago in Alec Loretto, 'Happy Birthday, Whenever That May Be! Or—Is There a Musicologist in the House?', *The Recorder Magazine* 14/4 (December 1994), p.145.

[35] Museum number M40–1982. Photos here: <https://www.horniman.ac.uk/object/M40-1982/>.

[36] Jeanne Dolmetsch, 'The Dolmetsch Family and *The Compleat Flute-Maste*r', in *The Compleat Flute-Master or the Whole Art of Playing on y^e^ Rechorder: A Facsimile of the 1695 First Edition* (Hebden Bridge, Ruxbury Publications, 2004), p.xviii.

[37] See John Mansfield Thomson, 'The Recorder Revival I: The Friendship of Bernard Shaw and Arnold Dolmetsch', in John Mansfield Thomson and Anthony Rowland-Jones (eds), *The Cambridge Companion to the Recorder* (Cambridge: Cambridge University Press, 1995), p.147.

[38] See Eric Halfpenny, 'The English Baroque Treble Recorder', *The Galpin Society Journal* 9 (1956), pp.82–90.

[39] Francis Darwin, *Springtime and Other Essays* (London: John Murray, 1920), p.72.

[40] Darwin (1920), p.84. On the Galpin recorder quartet see Stanley Godman, 'Francis William Galpin: Music Maker', *The Galpin Society Journal* 12 (1959), pp.14–15.

customers.[41] Had Dolmetsch wanted access to the Darwin Stanesby after Sir Francis's death in 1925, for closer inspection than might have seemed worthwhile in 1917, that probably could have been arranged through other members of his family.

1980s evidence of Carl's preference for Stanesby pattern recorders is unambiguous. When J. & M. Dolmetsch split off from Arnold Dolmetsch Ltd in 1978 Carl designed a new range of instruments for the seceding company. These, as he told J.M. Thomson, looked somewhat different on the outside but did still 'use the Stanesby design'. Drawing on '55 years of experience', all his own (not counting Arnold's), Carl 'used an ancient root and grafted a new twig on to it'.[42] Adverts placed by J. & M. Dolmetsch were explicit: 'Models designed by Dr. Carl Dolmetsch after the fine instruments of Thomas Stanesby Senior. Sopranino, Descant, Treble, Tenor and Bass at low and modern pitches, as well as Sixth Flutes and Voice Flutes; made from exotic hard woods including Grenadilla, Rosewood, Kingwood, Genuine Boxwood, Satinwood, Coralwood and Zebrawood …'.[43] While claims made in a firm's promotional material should not be over-interpreted, a strong Stanesby thread running the full length of Carl's recorder-making career can be made out.

Arnold Dolmetsch Ltd ceased trading in 1981. J. & M. Dolmetsch regained control of legacy assets, rebranded to draw a line under recent misadventures, and as Dolmetsch Musical Instruments kept the full Stanesby range in production until 2010. New 'Bressan' descant and treble models catered for customers wanting 'waxed string joints … [a] narrow windway … traditional beak shape … undercut finger holes', but whole sets of instruments could only be supplied to the Stanesby specification.[44]

5. CLONING DOLMETSCH: RECORDERS BY ROBERT GOBLE

Figure 4 shows Dolmetsch treble **O** alongside another treble, strikingly similar in appearance as it is in sound. Figure 5 shows their two windways blowing end on; Figure 6 shows their small thumb-holes, both bored very close to the top of the centre joint (tenon section excluded), both passing through the wall of the centre joint at a steep downward slant. This allows some extra room for thumb action unimpeded by projecting ornamental rings at the bottom end of the head joint.

The recorder on the right in Figure 4 was made by Robert Goble in the late 1940s (#175), and is to all intents and purposes a *c*1930 Dolmetsch clone. Goble joined Dolmetsch's staff in the mid 1920s, learned to make recorders and keyboard instruments in the Dolmetsch way, was a regular player in Haslemere Festival concerts, and met his future wife while working for the firm.[45] Elizabeth Goble, née Brown, had arrived in Haslemere to study with Arnold, taking up one of the Dolmetsch Foundation's first scholarships.[46] As Oskar Dawson had done a decade before, Goble left his Dolmetsch job to set up independently in the late 1930s, staying in Haslemere initially. In the early months of the Second World War he advertised 'The Perfect Instrument for present conditions | PORTABLE AND DURABLE | ENGLISH HAND-MADE GOBLE RECORDERS | are well known for possessing all the good qualities a musician demands',[47] no doubt hoping to fill the gap in recorder supply that Dolmetsch's diversion to aircraft component mass-production had created; but that plan went awry when Goble too was called up for war-related industrial service. After the war the Gobles moved to Headington, Oxford, and

[41] Carl Dolmetsch, personal communication reported in Eve O'Kelly, *The Recorder Today* (Cambridge: Cambridge University Press, 1990), p.6. O'Kelly lists 'Sir Bernard Darwin, son of Charles Darwin' among Arnold Dolmetsch's first recorder customers. Since Bernard Darwin was Charles Darwin's grandson, and never knighted, his father Sir Francis was probably intended.

[42] J. M. Thomson, 'Editorial', *Early Music* 10/1 (January 1982), pp.2–3.

[43] *Early Music* 9/3 (July 1981), Back Matter, p.402.

[44] *Early Music* 12/2 (May 1984), Back Matter, p.260.

[45] See Mary Bennett, 'Robert Goble': a biographical appreciation retrieved from the website of Robert Goble and Son harpsichord makers: <http://www.gobleharpsichords.co.uk/Robert_Goble_Biog.pdf>, accessed 20 May 2023. Previously published in *The Thursley Chronicle*, 1991.

[46] See M. Dolmetsch (1957), p.150. The scholarships were funded by a particularly generous Dolmetsch Foundation supporter and lapsed after his death in 1931.

[47] *The Musical Times* 80/1161 (November 1939), p.740.

Figure 4 (left). *Dolmetsch treble recorder* ***O*** *(left) alongside Goble treble #175.* ***O*** *at a*^{1}*439Hz; #175 slightly higher, as post-war instruments meeting the new a*^{1}*440Hz international standard needed to be.*

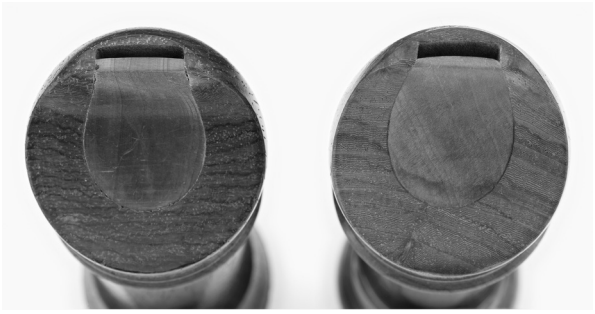

Figure 5. *Windways compared. Dolmetsch* ***O*** *(left), Goble #175 (right).*

Figure 6. *Thumbholes compared. Dolmetsch* ***O*** *(left), Goble #175 (right).*

opened a new workshop—making recorders along with keyboard instruments until about 1954,[48] keyboards only thereafter.[49]

In at most ten years, Goble sold over 1,300 recorders,[50] turning them out at twice Dolmetsch's 1930s rate. They were made in all five standard Dolmetsch sizes, sopranino down to bass, with or without ivory mounts; and they all seem to have had curved windways like Dolmetsch's pre-modernization type of recorder. This avoided

[48] Date inferred from Anthony Rowland-Jones, *Recorder Technique* (London: Oxford University Press, 1959), p.137: 'Goble … made all sizes of recorder up to about five years ago'.

[49] Marco Pallis provided funds to help the Gobles buy their house and equip their workshop, and for several years lived with his partner in part of the house. He had supported Dolmetsch in the same way a quarter of a century before. Pallis valued the communal atmosphere of pre-war Haslemere, evidently, and encouraged the Gobles to replicate it in Headington at least for a while. The firm Robert Goble and Son is still based in Headington, and still making harpsichords. See Paul Goble, 'Appreciation: Remembering Marco Pallis', in Joseph A. Fitzgerald (ed.), *The Way and the Mountain: Tibet, Buddhism, and Tradition* (Bloomington, IN: World Wisdom, Inc. [reprint edition], 2008), pp.xxiii–xxvi.

[50] The Goble descant and treble recorders in the University of Edinburgh's musical instrument museum collection (MIMEd 5749, MIMEd 5750) are numbered 1330 and 1327 respectively.

unseemly Dolmetsch-Goble competition: Goble was persevering with models from which Dolmetsch had moved on.[51]

Goble's hectic rate of recorder manufacture had quality control implications unfortunately. Anthony Rowland-Jones, in 1959, commended their 'beauty of tone' but warned players looking to buy them second hand that 'not all [would be] easy to manage … from the point of view of intonation'.[52] A reputation for inconsistency hindered appreciation of the quality of Goble recorders at their best, and killed what Rowland-Jones and others making recorder brand comparisons in the 1950s could have turned into a useful debate about the relative merits of Baroque vs modernized voicing.

Friedrich von Huene's quest for original instruments worth copying might have started ten years earlier than it actually did, had he recognized Alfred Mann's Goble treble for what it was back in 1956—as a Stanesby-derived Dolmetsch design successfully scaled from low pitch to high pitch but otherwise not much modernized. (Mann played a well-behaved Goble, evidently; and as the USA's best and busiest recorder professional through the decade 1945–55 he would have had no trouble obtaining one.) Von Huene measured the Mann Goble and at the start of his own recorder-making career sold trebles modelled on it.[53]

6. 'A RANGE OF TWO OCTAVES AND ONE NOTE, CHROMATICALLY COMPLETE'

The question whether top f#^{3} on treble recorders (c#^{3} on descants, so notated though sounding an octave higher) is or is not a note for which reliable fingerings exist has been much debated in organological and specialist recorder journals.[54] Returning to it in 1994, in *The Galpin Society Journal*, Edgar Hunt pointed out that the Ø | 1 3 | 45 | 7 fingering for f#^{3} given in J.F.B.C. Majer's *Museum Musicum*, 1732, 'works on most original Baroque trebles (Bressan, Rottenburgh, Denner) and on good copies—slightly sharp, but acceptable'.[55] Ø | 1 3 | 45 | 7 produces well or adequately well in tune f#^{3}s (c#^{3}s) on all the Dolmetsch treble and descant recorders discussed in BfB (including the firm's early Bakelite models), on this article's Dolmetsch **O** and Goble #175; on the Herwiga descants and trebles imported for use in British schools in the 1930s; on Schott's early plastic instruments—and no doubt on many other recorders made from the 1930s through to the present. However un-Baroque in external appearance or voicing, a modern recorder is reasonably likely to play f#^{3} (or c#^{3}) when the Majer fingering is tried if it preserves or accidentally reproduces the bore proportions of an eighteenth-century instrument with that capability.

Ø | 1 3 | 45 | 7 will work if a recorder's foot joint is the length it needs to be to flatten regularly-fingered g^3 (Ø | 1 3 | 4 6 |) by just under a semitone when the player closes tone-hole 7.[56] That length in turn will vary with the foot joint's bore profile. In their efforts to optimize recorder performance across the instrument's normal working range, to extend that range upward or strengthen low note tone, eighteenth century makers developed different foot joint designs—some of which made Majer-fingered f#^{3} (c#3) possible while others did not. In case readers of *Principes* (1707) wondered why his treble recorder fingering chart left it out, Jacques Hotteterre told them matter-of-factly: 'There is no f''' sharp'.[57] In Hotteterre's experience that must have been true. Other eighteenth-century composers and arrangers, used to instruments on which f#^{3} (c#^{3}) could easily be played, used the note freely.

[51] Goble instruments are well represented in public collections, and from time to time come up for sale on online auction and other sites. I used information and images accessible online to conduct a very rough survey of Goble numbers and of Goble design characteristics. Goble #175 was, it must be admitted, a far from random addition to the author's research collection. Figures 4–6 were carefully staged: it would be hard to imagine a clearer demonstration of Goble's design affinity with early Dolmetsch. I leave others to decide whether Goble improved on early Dolmetsch designs when departing from them, and whether he did that with deliberate intent or in manufacturing haste.

[52] Rowland-Jones (1959), p.137.

[53] See Geoffrey Burgess, *Well-Tempered Woodwinds: Friedrich von Huene and the Making of Early Music in a New World* (Bloomington, IN: Indiana University Press, 2015), pp.55–56; 105–113 ('The Quest Begins').

[54] For an overview of literature to 2010–11, see Richard Griscom and David Lasocki, *The Recorder: A Research and Information Guide*, 3rd edition (Abingdon, Oxon.: Routledge, 2012), pp.348–350; 376–377.

[55] Edgar Hunt, 'High F Sharp and the Treble Recorder', *The Galpin Society Journal* 47 (1994), p.161.

[56] Just under a semitone, because the Majer fingering for f#^{3} also involves a | 45 | for | 4 6 | finger substitution that has a further slightly flattening effect.

[57] David Lasocki (trans. and ed.), *Principles of the Flute, Recorder & Oboe by Jacques Hotteterre le Romain* (London: Barrie & Rockliff, 1968), p.80.

His own original Bressan playing experience, combined with knowledge of Bach's Brandenburg Concerto recorder parts, led Arnold Dolmetsch to describe recorder intonation as 'perfect … right through the chromatic compass of two octaves and one note … if you know how to manage the instrument'—in 1915, before he had made any.[58] In a slightly amplified form the same claim appeared in advertisements promoting the new Dolmetsch Bakelite treble recorder, around the time of its public début (1947): 'Range of nearly 2½ octaves, chromatically complete and in perfect tune, with pure, round tone'.[59]

The Dolmetsch instruction booklet *Tablature and Tunes for the … Recorder* stayed silent on the f#^{3} (c#^{3}) subject,[60] neither suggesting fingerings nor ruling the note completely off limits by adding disclaimers like Hotteterre's or Edgar Hunt's.[61] Beginners would never encounter it in elementary repertoire. By the time they progressed to pieces like Brandenburg 4, players would have the technical facility needed to find f#^{3} (c#^{3}) and other relatively rarely called-for high notes for themselves: this was a fair assumption.

Carl shared his own thoughts on f#^{3} (c#^{3}) fingering expedients with readers of *The School Recorder Book*, Part Three, first published in 1954. The note was 'exceptional … not generally considered to form part of the normal range';[62] yet schoolchildren could access it if they followed Carl's advice and practised the relevant exercises. Ø | 123 | 45 | 7, a Majer variant, 'succeeds on some recorders, but it usually produces a rather sharp note and requires very low breath pressure to keep the pitch down'.[63] He recommended Ø | | 45 | more enthusiastically, as a better way to play f#^{3} (c#^{3}) in tune despite its drawbacks. Ø | | 45 | only worked on a slur up from notes a semitone or tone below, and would crack if the player let breath pressure sag.

In June 1958 Arnold Dolmetsch Ltd made two separate patent applications, both relating to (as was claimed) newly-invented keys that would solve the f#^{3} (c#^{3}) problem once and for all. Application number 852,164 described a key mounted on the centre joint of the recorder. This key, when opened, would raise the pitch of normally-fingered f#^{3} (c#^{3}) by a semitone. Application 852,165 described a more versatile bell key arrangement enabling players to block and unblock the recorder's bell opening at will.[64] The note f#^{3} (c#^{3}) could be played easily and in tune using a normal g^3 (d^3) fingering and activating the key. Since the bell key helped with other previously troublesome high notes too it was a far more useful invention, and did go into production. Carl and a number of other players influential in the recorder world of the 1960s took it up. (Bell keys can be retrofitted to any make of recorder.) Their vigorous promotion of bell-stopping possibilities, combined with spreading realization that keyless bells could be stopped against a knee or thigh in 'more relaxed [modern] style' recital contexts,[65] to impressively athletic effect, weakened the incentives that advanced players would otherwise have had to keep exploring historical f#^{3} (c#^{3}) fingerings, and this in turn fed a curious belief that there never were any.

The f#^{3} (c#^{3}) 'problem' is one of perspective, essentially. As a passing note going by at eighteenth-century concerto fast movement speed it could have been played well or well enough in tune by almost everyone handed that task originally, on an ordinary recorder, using a forked fingering of the standard eighteenth-century woodwind type. (Not the same fingering on every recorder. There were alternatives, and skilled players surely knew how to find them.) As a prominent, sustained note in twentieth-century music specially written for Carl Dolmetsch or some other active player-commissioner to perform in the pre-bell key era it put reputations at risk. To avoid embarrassment, Dolmetsch asked composers to steer clear; and he marked up parts into which it had slipped despite advice with particular care. Composers were

[58] Arnold Dolmetsch, *The Interpretation of the Music of the XVIIth and XVIIIth Centuries* (London: Novello, 1915), p.457.

[59] See (for instance) *The Musical Times* 87/1241 (July 1946), p.198: 'Treble available shortly'.

[60] First edition for treble recorder 1929 (see facsimile pages in BfB's Appendix Two); first edition for descant 1930; frequently reprinted through the next half century.

[61] The fingering chart in Edgar Hunt, *A Concise Tutor for Descant, Treble and Tenor Recorders* (London: Boosey & Co., 1935), p.7, labelled f#^{3} (c#^{3}) 'impracticable'.

[62] Carl Dolmetsch, *The School Recorder Book*, Part Three (Leeds: E.J. Arnold, n.d. [1954]), p.10.

[63] C. Dolmetsch ([1954]), p.11.

[64] 852,165 envisaged a new key-covered opening in the side wall of the bell, and a plug almost blocking the end of the bell. (A small drainage hole through the plug would be needed to let water out.) The bell key finally marketed simplified this design, opening and closing over the end of the bell instead.

[65] Hunt (1994), p.161.

free to do as they liked after 1958, when Carl had his bell key fitted. Repeat performances of works premièred before that watershed year could be given with less risk of mishap, on less preparation.[66]

Carl, as brand ambassador for his own firm's products, could not afford to play them out of tune in public, or encourage others to do that. Hence his equivocation on f#^{3} (c#^{3}) fingerings, until he had invented a method that would deliver totally dependable results. Other leading players were free to blame their tools, but when shopping round for new ones of course pushed makers to transcend the 'normal' limitations of the instrument.[67] f#^{3} (c#^{3}) assumed mythic status, as a note that could be played as easily as any other only on recorders of outstanding quality. Makers, very sensibly, refused to concede that f#^{3}s (c#^{3}s) as well behaved as this ever could be guaranteed. Recorders felt by their purchasers to fail the f#^{3} (c#^{3}) test would have been returned for refund or replacement otherwise, rendering much even of a conscientious maker's output unsaleable.

Tuning tolerances entered the debate. Dolmetsch dealt in absolutes: 'in perfect tune'. Frans Brüggen, about a decade into his journey towards historically-informed enlightenment, challenged this position on philosophical-aesthetic grounds:

> I think the modern ear is almost crazily attached to playing in tune. Why should one play in tune? That's a 19th century ideal. Of course, one should play in tune within a certain limit. But, as a melody instrument player, you have the obligation to play and to colour with a tone—and this also involves colouring and playing with pitch a little.[68]

Whether f#^{3} (c#^{3}) is or is not acceptably in tune on a given instrument, in a given context, is in the end a matter of opinion not of objectively determinable fact.

Eighteenth-century English recorder concerto composers did write f#^{3}s (c#^{3}s) when necessary (in major scale runs rising to top g^3 (d^3) for instance); and since most of them were also players they clearly understood the implications. The leaflet that Thomas Stanesby junior had printed to promote interest in his remodelled tenor recorder, or 'true Concert Flute', included 'a full and perfect scale of all the Notes on the C Flute', taking it up to top d^3 via Majer-fingered top c#^{3} and a slightly brighter top d♭^{3}, Ø | 1 3 | 45 | 7 and Ø | 1 3 | 4 6 | 7 respectively.[69] f#^{3}s (c#^{3}s) were common player property across much of northern Europe throughout the Baroque recorder's half century of high ascendency;[70] not, as is sometimes suggested, notes only manageable on a few magically-endowed Jacob Denner instruments that gave their lucky possessors special powers.[71]

ACKNOWLEDGEMENTS

These six addenda bring my work on Dolmetsch recorders to a likely close. Without reprinting BfB's original acknowledgements section here I would like to thank everyone named in it again: for hard information, for letting me examine instruments in their care, for sourcing and selling me instruments as some did, and for research leads that seemed to me to be worth following up.

Addendum 2 builds on a fairly recent article by Andrew Mayes, published in the Dolmetsch

[66] For more on Carl's pre-bell key aversion to f#^{3} (c#^{3}), as expressed in correspondence with composers writing for him, and implied by his careful marking up of parts that did contain the note, see Andrew Mayes, 'Aspects of Performance Practice in Works for Recorder Composed for Carl Dolmetsch Between 1939 and 1989', PhD Thesis, Birmingham City University, 2008, Vol.1, pp.49–72 (Chapter 2: 'High F# (f'''#) and the Bell Key').

[67] See, for instance, David Munrow's 1965 letter to Friedrich von Huene, quoted in Burgess (2015), pp.112–113. Munrow underestimated Dolmetsch instruments. These at their best already met the 'nine essential criteria for his ideal Baroque alto' (Burgess), or came creditably close to doing so.

[68] 'Frans Brueggen on the Baroque Recorder' [edited transcript of a conversation with BBC Radio 3 interviewer Keith Horner], *Early Music* 2/2 (April 1974), p.103.

[69] See here for a facsimile: <https://www.flute-a-bec.com/textestanesby.html>, accessed 20 May 2023.

[70] Arnold Dolmetsch made G recorders for his 1926 Haslemere Festival performance of Brandenburg 4 not to avoid f#^{3} on the ordinary F treble but to create instruments sufficiently unlike the ordinary F treble to justify a special name—*fiauti d'echo*. Scholarly consensus on what exactly Bach meant by *fiauti d'echo* has yet to be reached; but Dolmetsch was right to look behind the name for a distinctive type of instrument to which perhaps it applied.

[71] By Friedrich von Huene for instance (from whom other writers take their cue): 'The Copenhagen [Denner] treble recorder is one of the finest of the Baroque period. Its sound, ease of playing and intonation are excellent … The instrument plays easily all the notes required by Bach and Telemann, including high f#''', a''' and c'''' All the usual problem notes of many other eighteenth-century recorders do not present any difficulties on it'. See Robert Austin Warner and Friedrich von Huene, 'A Jacob Denner Recorder in the United States of America', *The Galpin Society Journal* 21 (1968), p.93.

Foundation's journal *The Consort* (Mayes 2020). I interpret the evidence a little differently but credit for its assembly belongs entirely to him. Since the sequence of dates on which catalogue entries were made and amended is pivotal to my argument I asked the University of Edinburgh's current Musical Instruments Collections Curator, Jenny Nex, to check them for me. She very kindly did so. Brian Blood, Marguerite Dolmetsch and Arnold Myers supplied very useful (and otherwise unavailable) information about the 1991 Horniman–Le Mans Arnold Dolmetsch anniversary exhibition. Mimi Waitzman at the Horniman Museum checked records relating to Arnold Dolmetsch #1. I thank them all.

As before, the Royal Academy of Music's Digitisation Officer Ian Breary took all necessary photos. I am grateful to him, to others at the Academy and to colleagues at the University of Southampton for their practical support.

BfB mentioned a forthcoming CD on which Tom Beets and Joris Van Goethem—the Flanders Recorder Duo (FR2)—would play a number of pre Second World War Dolmetsch recorders, giving anyone interested a chance to hear them in serious professional action. This CD may yet happen. FR2 will in the meantime produce a short series of video recordings using the same instruments, and make them freely available via their website http://www.flanders-recorder-duo.be/, forming a BfB sound supplement of sorts. Readers who want early access to the videos should keep FR2's website under review and click on links as these appear.