

BRIEF REPORTS

COMMENTS ON MATTHEW CRON'S ARTICLE "IN DEFENSE OF ALTENBURG: THE PITCH AND FORM OF FOREIGN TRUMPETS," *HBSJ* 8 (1996)

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Matthew Cron's article on Altenburg and trumpet pitch is enlightening. Building on the researches of Dahlqvist's groundbreaking article in *HBSJ* 5, he carefully cites nine sources on the subject, ranging over the century from 1698 to the 1790s. It is always satisfying to find a way to legitimize statements in original sources, as Cron has done for Altenburg's reports of French and English trumpets.

Cron dealt with interval relations. I would like to add a footnote on the probable absolute *Hz* values of these various trumpets, based on what we now know of seventeenth- and eighteenth-century pitch standards.¹ I hope this will give a useful perspective.

In the earliest of the sources Cron cites, the *Abbildung* of 1698, Christoph Weigel wrote,

French [trumpets] ... are a tone higher than [the German so-called *Ordinari* or court trumpets²] the English ... are a major 3d higher than the [German] court trumpets.³

In other words, whatever German court trumpet pitch was, French trumpet pitch was a whole tone higher and English two whole tones higher. Cron cites other sources spread over a long period, and (except for two later ones, Altenburg and Haydn, which we will consider separately), all of them—Janowka (1701), Marperger (1712), [? Friese (1715-21)], Zedler (1732-54), and Jablonski (1767)⁴—are in essential agreement with the pitch relationships Weigel describes. Janowka noted a small difference in the trumpet practice in the Habsburg Empire. While agreeing on the pitches of the standard German and French trumpets, he noted that in the Habsburg Lands a lower trumpet existed at $a' \approx 415$ (the lower pitch was there called *Chorton*).⁵ Janowka did not mention the English trumpet. Even Altenburg (who wrote his book in the early 1770s, despite its date of publication)⁶ confirms the standard German trumpet pitch, writing,

Here in Germany the trumpet in *Chorton* C is clearly the most preferred. It is given this name from the fact that its C is the same—or officially should be the same—as that of the organ (which is normally in *Chorton*)... And because *Chorton* and *Cammerton* are usually only a tone from each other, if one is a tone higher and the other a tone lower, it is easy to see that this trumpet tunes in D from the point of view of *Cammerton*. For this reason,

it could just as well be called the trumpet in *Cammerton* D, although many are tuned to E \flat .⁷

The reference pitch for Weigel and these later sources is “the German so-called court trumpets.” The evidence on that pitch is overwhelming: it was $a \approx 465$,⁸ a semitone above $a = 440$, known as *Chorton*.⁹ Weigel’s reckoning, when the German court trumpet played a C it sounded *Cammerton* D; when the French trumpet played a C it sounded *Cammerton* E; and when the English trumpet played a C it sounded *Cammerton* F \sharp (*Cammerton* being $a \approx 415$).

A pitch level at a had been standard since Praetorius’s day. At that time, it had been the normal pitch of instruments in general, and was therefore called “*Cammer-Thon*.”¹⁰ It was only with the arrival of French woodwinds at the end of the seventeenth century that the general instrumental pitch (that is, *Cammerton*) dropped to a and below. Organs were too expensive and venerable to be changed, so they retained the traditional level at $a \approx 465$ (a tone above $a \approx 415$, a pitch that came to be called *Chorton*). As heirs to a proud tradition, trumpets also remained at *Chorton*.

There are two puzzling aspects of Altenburg’s report on French and English trumpets. The first he shares with all the other German sources: given that pitch standards for church, chamber, and theater music in France and England at this time were not very different from those in Germany, why were these trumpets so high? Between 1698 and about the 1760s the German *Cammerton* level was usually $a \approx 415$ (and sometimes lower, though rarely after the 1720s). Depending on the function and venue, French instrumental pitch varied within the same frequency range until the 1730s, then gradually moved upwards to $a \approx 435$. The usual pitch in England in 1698 was $a \approx 403$; in the 1720s it was often a semitone higher at $a \approx 423$; and by the 1740s and ’50s it too was at $a \approx 435$. In the notes on musical instruments he made in ca. 1692-95 (and also proven to be a reliable source), James Talbot said the English trumpet’s C sounded E \flat ,¹¹ probably at a reference pitch of $a \approx 403$. Yet Weigel in 1698 called it F \sharp in *Cammerton* (or $a \approx 415$). Cron’s well-supported suggestion that these were special “field” pitches for French and English trumpets, intended for military use, is convincing.¹²

The second curiosity, as Cron points out, is that Altenburg describes the French and English trumpets differently from all the earlier sources: he raises them by a semitone. Instead of a whole tone above the German trumpet, he says the French trumpet is “a minor third, or one and a half tones higher,” and the English trumpet is “a whole tone higher still,” thus fully a fourth above the German trumpet.

The reason for this anomaly probably has to do with the rises in pitch in most of Europe by the 1770s, including France and England. It seems he was the first to relate how this rise affected French and English trumpets. Between Weigel’s and Altenburg’s times, standard instrumental pitch had risen about a semitone almost everywhere in Europe. The major exception was Brandenburg and Saxony, where Altenburg worked. There, until the end of the century, *Cammerton* generally remained a tone below *Chorton*.¹³ Altenburg’s German trumpet pitches at *Cammerton* \rightarrow D = *Chorton* \rightarrow C were thus still the same absolute frequen-

cies as Weigel's. But at the time he wrote, the standard instrumental pitch in France was $a \approx 415$, so the French E would have been about the same as the Saxon F. When Altenburg says the French trumpet is in F, French writers would have called the same frequency an E. And this is indeed the case: both Francoeur (1772) and Laborde (1780) identified the pitch of the normal trumpet as E.¹⁴

Altenburg gives hints that the high French F-trumpet he describes is relatively new. On page 11 he writes that the chamber-pitched F or French trumpet was so called, "weil sie bey den Franzosen eingeführt ist." Cron translates this as "because it is used by the French." But the verb *einführen* really means "to introduce," "usher in," or "install." A more accurate translation of this passage would be, "because it has been introduced by the French." If the chamber-pitched F-trumpet had had to be introduced, it would not have previously existed. On page 111 he writes (in Cron's translation, p. 22) of an unmuted trumpet in E, and says, "It is presupposed that the French, or F trumpet, is lowered a half tone with a tuning bit. Perhaps this kind of tuning has been neglected up to now for lack of a shorter F trumpet."¹⁵ This seems to mean that the shorter F-trumpet was a new development, and that the older trumpet was in E (as French trumpets were in all the earlier sources), and did not therefore require a tuning bit.¹⁶

If Altenburg in the late eighteenth century was reporting new developments in pitching the French trumpet, perhaps the semitone rise he described for the English trumpet was also a recent development. It is true that the general concert pitch in England rose in the course of the century. All the historical evidence I've seen for the last quarter of the eighteenth century indicates a general standard close to modern pitch—similar to pitch in Paris and Vienna at the time. The least moveable woodwinds of the period, like the clarinets and traversos, are centered unambiguously on 435. This level was probably reinforced by the regular visits of wind soloists from Italy, playing at 430-35. Trumpet pitch may thus have followed suit, perhaps to retain an established interval relationship with other instruments.¹⁷

The question of the pitch of the "French" trumpet is interesting for a special reason. It is generally thought that J.S. Bach composed the Brandenburg concertos at Cöthen, and there are good reasons for thinking that the instrumental pitch standard at Cöthen was $a \approx 390$, known as *tief-Cammerton* (and sometimes *französischer Thon*). This same *tief-Cammerton* was associated with the city to which Bach sent the concertos, Berlin.¹⁸ Since the normal German trumpet was in D at standard *Cammerton* ($a \approx 415$), the "French" trumpet a step higher would have been in E → *Cammerton* ($a \approx 415$). As I have suggested elsewhere,¹⁹ in terms of *tief-Cammerton*, then, this same instrument would have been in F. And that is of course the key of the second of the "Six Concerts avec plusieurs Instruments" dedicated by Bach to the "Marggraf de Brandenburg" in 1721, a piece that may well have been built around this "French" instrument, conceived as an F-trumpet at $a \approx 390$.²⁰ There are a number of other German works from this period that feature F-trumpets,²¹ some of which we know were performed at *tief-Cammerton*. If this argument makes sense, and performing groups used these pitches, "Mt. Everest" (as Friedemann Immer calls the Second Brandenburg) would be somewhat more practical to climb.

NOTES

¹Bruce Haynes, *Pitch Standards in the Baroque and Classical Periods*. Ph.D. diss., Université de Montréal, 1995. (UMI order number NN 08519.)

²Christoph Weigel (*Abbildung der gemein-nützlichen Haupt-Stände*, 1698) probably uses the word “Ordinari-Trompeten” not to mean “normal” trumpets, but rather the trumpet of a court musician, as in “trumpet in ordinary” (“ordinaire” in French). “Ordinare,” etc. is not a German word; for a “normal” or “common” trumpet, Altenburg uses “gewlich.” T.B. Janowka (*Clavis ad thesaurum magnae artis musicae*, 1780; reprint 1972, 1978) uses the word “ordinari”; [? Friese] “Ordinar,” Zedler “so genannte ordinaire,” Jablonski “ordinare,” Marperger “ordinaire” in italics, Altenburg “ordinarie.”

³The original text is in Cron, “Defense,” n. 17.

⁴Jablonski qualifies the English trumpets as “about” a whole third higher than the German, which is interesting, considering the relation of English to continental pitches (cf. Haynes, *Pitch Standards*, Section 8).

⁵As it had often been for Praetorius, “Chorton” in Austria was a term for a low pitch— $a \approx 415$ —until well into the 18th century. See Haynes, *Pitch Standards*, p. 353.

⁶*The New Grove Dictionary of Music and Musicians* (London, 1980), s.v. “Altenburg, Johann Ernst,” by Edward H. Tarr.

⁷Johann Ernst Altenburg, *Versuch einer Anleitung zur heroisch-musikalischen Trompeter- und Pauker-Kunst* (Halle, 1795), p. 11: “Hier hat nun wohl ohnstreitig die chortönige C-Trompete bey uns Deutschen den Vorzug. Sie wird deswegen so genennet, weil sie mit dem Orgelwerk, (das ordinaire im Chortone stehet) in das C einstimmet, oder von rechts wegen einstimmen soll.... Da nun gewöhnlich der Chor- und Kammerton nur um einen Ton von einander differiren, indem jener einen Ton höher und dieser einen Ton niedriger ist, so ist leicht einzusehen, daß diese Trompete nach Kammerton in D einstimmen muß. Und deswegen kann sie eben so gut die kammertönige D-Trompete heissen, wiewohl auch manche in Es stimmen.”

⁸The symbol \approx in this and similar expressions means “equals approximately.”

⁹Specifically, this was the most common level of *Chorton* (which was a general pitch concept) called *Cornet-ton*. Cf. Haynes, *Pitch Standards*, Sections 5-3 and 5-4.

¹⁰Cf. *ibid.*, Section 5-1.

¹¹Anthony Baines, “James Talbot’s Manuscript, I: Wind Instruments,” *Galpin Society Journal* 1 (1948): 9.

¹²The consistent use of the word “Ordinari” (or something similar) in referring to the German trumpets (see above) implies a distinction in musical function from the French and German instruments.

¹³Cf. Haynes, *Pitch Standards*, Sec. 9-2b.

¹⁴Reine Dahlqvist, “Pitches of German, French, and English Trumpets in the 17th and 18th Centuries,” *Historic Brass Society Journal* 5 (1993): 29-41.

¹⁵Original text in Cron, “Defense,” n. 70.

¹⁶Cron (“Defense,” n. 73) cites another, probably later, writer (J.H. von Oroll, *Vollständige theoretische und praktische Geschichte der Erfindungen* [Basel, 1789-95], 1:217) who reports the same interval relationships for French and English trumpets as the other eighteenth-century sources. But Altenburg’s description is apparently confirmed by the Haydn score he mentions.

¹⁷The foot used by instrument makers in Nuremberg was called the *Werkfuß* and was 303.8 mm long. It was divided into 12 *Zoll* at 25.32 mm each, and when only 11 *Zoll* were used, it became the so-called *Architekturfuß* (278.4 mm; see Martin Kirnbauer and Dieter Krickeberg, “Untersuchungen an Nürnberger Blockflöten der Zeit zwischen 1650 und 1750,” *Anzeiger des Germanischen Nation-*

almuseums 1987, pp. 245-81 [here, 251]). By comparison, the English foot and inch, according to Anthony Baines, “were exactly as now in the 1690s” (* 12 June 1973. See also W.J. Owen, *The History of the English System of Weights and Measures* (U.S. National Bureau of Standards miscellaneous publication no. 272; 1966), pp. 130-36. (1 Foot = 304.8 mm, 1 inch = 25.4 mm, 1/8 inch = 3.175 mm). Remarkably enough, then, the two foot standards differed by only a millimeter (or 0.3%). Altenburg’s trumpet at 8 Nuremberg feet would have been 2430.4 mm long. An interesting “Table of the Foreign Measures, carefully compared with the English,” which first appeared in Stone’s *New Mathematical Dictionary* in 1726 (under “ME”) is reproduced in *FoMRHIQ* 81 (October 1995): 6. In that table, the “Noremburgh Ell” is given as 2.227 English feet, which does not correspond to the numbers above.

¹⁸Haynes, *Pitch Standards*, Section 5-6b.

¹⁹*Ibid.*, Section 7-3.

²⁰Dahlqvist (“Pitches,” p. 33) notes that two *trombe courte* were used in a Kyrie performed at Weisenfels, and there is mention there of *trombe francese*. He notes that T. Volckmar wrote for *clarino ô curta* in D→Chorton in the eighth cantata in his collection *Gott gefällige Music-Freude* (1723).

²¹Dahlqvist (*ibid.*) mentions works by Telemann, von Wilderer, Erlebach, Stölzel, and Endler.