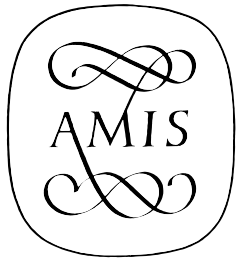
Journal of the American Musical Instrument Society

VOLUME XXX • 2004



THE HECKELPHONE AT 100

Robert Howe and Peter Hurd

The heckelphone is a conically-bored woodwind instrument played with a double reed, sounding an octave below the oboe (fig. 1). Introduced in 1904, the heckelphone was purportedly suggested by Richard Wagner and was first used in the orchestra by Richard Strauss. After an initial period of enthusiasm on the part of composers and performers its production and use declined; during the latter half of the twentieth century the instrument became an esoteric rarity and is now played only by specialists, although a revival may be underway. This article will review the invention and history of the heckelphone as it begins its second century, and will provide a checklist of all such instruments produced to date.[1]

The Invention of the Heckelphone

Prior to the widespread use of keywork, bass woodwind instruments presented numerous problems of ergonomics, pitch, and tonal consistency.[2] In the baroque and classical eras the bassoon was the only useful orchestral bass woodwind, as its narrow, long, slanted toneholes can be stopped by the player's fingers and thumbs, even in the bassoon's lowest register.

1. Before 2004, we could find no discussion of the heckelphone in English more extensive than the entry in the *New Grove Dictionary of Music and Musicians* (2nd edition, London: Macmillan, 2001), 11:305–06, originally written by Philip Bate, revised by Michael Finkelman. The standard German article was Gunther Joppig, "Achtzig Jahre Heckelphon," *Das Musikinstrument* 11 (1987): 22–25. An analysis of the differences between heckelphone and bass oboe appears in Robert Howe, "Oboes Built an Octave Lower: A Heckelphone by Heckel and a Bass Oboe by Lorée," *The Double Reed* 25/4 (2002): 69–74. With the one hundredth anniversary of the heckelphone, there has been a flurry of review articles; besides the present paper, these include Georg Otto Klapproth, "Hundert Jahre Heckelphon," *'rohrblatt* 19/2–3 (June, September 2004): 54–66, 113–23, which offers a thorough centennial review of the instrument, and Michael Finkelman, "The Heckelphone: A Centenary Salute," *The Double Reed* 27/4 (2004): 33–54, which emphasizes the personalities and repertoire of the heckelphone's early years.

2. This and the following two paragraphs draw on material previously presented in Howe, "Oboes Built an Octave Lower," 69.

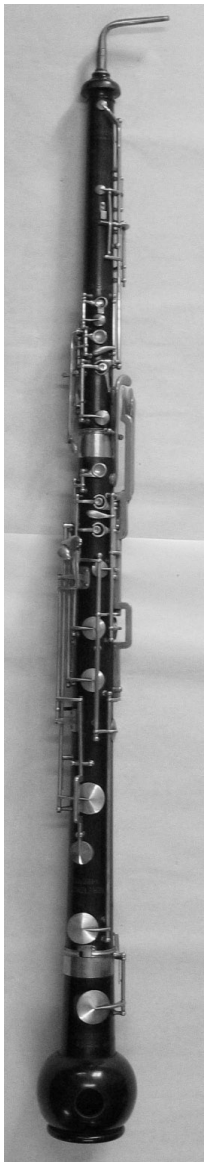


FIGURE 1. Heckelphone no. 3. Note that all toneholes are closed by keys acting at a distance. Courtesy Patryk Miernikiewicz, by kind permission of the Museum of Musical Instruments, department of the National Museum in Poznan, Poland (item MNP I-432).

During the nineteenth century, improvements in materials, acoustical knowledge, and manufacturing techniques allowed the use of larger toneholes than had hitherto been practical. Thus, as woodwind mechanisms became more reliable, makers developed larger species of woodwinds. Johann Heinrich Gottlieb Streitwolf in Germany[3] and the young Adolphe Sax in Belgium devised the first reliable bass clarinets in the 1820s and 30s. The first saxophones, invented in the 1840s, were also bass-range instruments, while the sarrusophone family was accepted only in its bass and contrabass species.[4] Johann Adam Heckel introduced a practical contrabassoon in 1876.[5] The improved bass clarinet was quickly adopted across Europe, but other new instruments were at first used only in a local fashion. The contrabassoon was mainly used in German-speaking lands, and the saxophones and sarrusophones in France, Spain, and Belgium.[6]

3. William Waterhouse, *The New Langwill Index* (London: Tony Bingham, 1993), 389–90 (hereafter cited as Waterhouse, *NLI*).

4. Robert Howe, "The Invention and Early History of the Saxophone, 1840–1855," this JOURNAL 29 (2003): 97–180. Early saxophones were copied with double reeds as sarrusophones by Gautrot in the 1850s: see Anthony Baines, *Woodwind Instruments and Their History* (rev. ed., New York: W. W. Norton, 1962), 167–68.

5. Werner Seltmann and Günter Angerhöfer, *Das Fagott. VI: Das Kontrafagott* (Leipzig: Deutscher Verlag für Musik, 1984), 12–16.

6. The contrabassoon was not widely used in France, nor the saxophones in Germany, until the early twentieth century. The earliest documentation we have found of saxophones in Germany is in Richard Strauss's *Sinfonia Domestica* (1904); but when this work was premiered in Berlin, the required quartet of saxophones could not be found locally. See Adam Carse, *Musical Wind Instruments* (London, 1939; reprint, New York: Da Capo Press, 1975), 179.

Being pitched an octave below their standard instruments, the contrabassoon and bass clarinet showed the practicality of extending the lower ranges of other woodwind families. During the mid-nineteenth century there arose a movement, championed by the musicologist François Joseph Fétis, to create large families of instruments, consorts possessing similar physical proportions and thus uniform timbres from the top to the bottom of the orchestra's compass.[7] Such a group of double reeds was lacking; in contrast to families of instruments such as the orchestral strings, clarinets, saxhorns, and saxophones, the timbres of the oboe and bassoon do not meet smoothly in their common middle range. Indeed, the contrast of timbres between the low oboe and the high bassoon has been exploited by composers since the classical period. The idea of an octave oboe was thus an attractive one, especially in the swollen orchestrations of the late nineteenth century.

Wagner and the Heckelphone. It is often stated that composer Richard Wagner suggested the development of the heckelphone. Wilhelm Heckel noted in 1905 that

> I was ordered to Bayreuth in 1879 to resolve the [contrabassoon] problem . . . and when the improvements on the contrabassoon were finished . . . [Wagner] said to me that this matter was now resolved, but that there was still a sound missing in the family of the double reed instruments, which should be an octave lower than the oboe; the instrument should combine the character of the oboe with the soft but powerful sound of the alphorn. . . .
>
> The long-familiar baritone oboe, also sometimes called the bass or bassett oboe, would never gain true acceptance and could naturally not be used as a basis [for the needed instrument], because it is nothing more than an English horn whose tone color has been extended downwards and therefore has a thin and not very distinct tone in the orchestra; rather, a completely new type must be produced. With my sons Wilhelm [Hermann] and August, I made the successful calculations for building such an instrument and manufactured the prototype.
>
> This instrument, which was desired by the great master Richard Wagner, has now been created as the "Heckelphone."[8]

7. Frédéric Triébert, *Nouveau Prix-Courant* (Paris: Caillet, c. 1861), reprinted in *Larigot* 4 (January 1989): 4–7, at p. 6. The saxhorns were the first successful modern family of instruments organized on such lines. Of instruments now in use in orchestras and bands, only the saxophones and clarinets constitute such families.

8. "Ich wurde im Jahre 1879 zur Erledigung dieser Frage nach Bayreuth berufen . . . und als die Verbesserung des Contrafagotts durchgeführt war . . . da sagte er zu

Heckel's account certainly rings true, as the composer had already stimulated the invention or modification of several other instruments. Unfortunately his story, while attractive, lacks verification. Gunther Joppig, in quoting the passage given above, notes that he was "unable to find corroborative evidence for this in the letters and diaries I have consulted."[9] A Heckel catalog from c. 1906 makes no claim for Wagner's role in the birth of the heckelphone, even though it discusses the composer's relationship with the firm and extols the heckelphone.[10] While Wagner's requests for an *Althoboe*, small tubas, a contrabass trombone, and bassoons extending to low A were all fulfilled within his lifetime (1813–1883), Wilhelm Heckel's telling comment "with my sons" suggests that he could not have begun to work on the heckelphone until after

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mir, diese Frage sei nun gelöst, aber noch ein Klangfaktor in der Gattung der Doppelrohrblattinstrumente fehle, welcher eine Octave tiefer als die Oboe stehe; das Instrument müsse den Charaker der Oboe mit dem weichen, aber mächtigen Ton des Alpenhorns verbinden. . . .

"Die längst bekannte Baryton-Oboe, auch teilweise Bass- oder Basset-Oboe genannt, welche, obwohl ein Octave tiefer als die Oboe stehend, nie richtigen Eingang finden konnte, da sie weiter nichts als ein in seiner Klangfarbe nach unten verlängertes Englisch Horn darstellt und infolgedessen nur einen dünnen, unmerklichen, im Orchester nicht besonders hervortretenden Ton hat, durfte natürlich nicht als Basis zu einem neuen Instrument dienen, sondern ein ganz neuer Typ musste entstehen. Ich machte mit meinen beiden Söhnen Wilhelm und August die so günstig ausgefallenen Berechnungen zum Bau eines derartigen Instrumentes und fertigte das Modell.

"Dieses vom grossen Meister Richard Wagner bereits begehrte Instrument ist nun erstanden im 'Heckelphon'." Wilhelm Heckel, *Heckelphon* (Biebrich: Heckel, 1905), a prospectus with fingering chart and testimonials. We thank Michael Finkelman for providing a clear copy of this text, which is illegible in Robert Howe's copy of the original. The passage is also quoted in Joppig, "Achtzig Jahre Heckelphon," 22, and Gunther Joppig, trans. Alfred Clayton, *The Oboe and the Bassoon* (Portland, Ore.: Amadeus Press, 1988), 110.

Wilhelm Heckel (1856–1909), the son of Johann Adam Heckel, took over the direction of the family firm in 1877. Under his leadership it became a prominent German bassoon maker, but it was only after he in turn was succeeded by his son Wilhelm Hermann Heckel (1879–1952) that "the 'Heckelfagott' achieved its incomparable reputation worldwide" (Waterhouse, *NLI*, 167–68).

9. Joppig, *Oboe and Bassoon*, 110.

10. This catalog is undated, but describes the company as having been founded in 1831 and having been in business for "more than 75 years"; thus a date no earlier than 1906 is required and a date prior to 1911 is likely, since otherwise the claim would likely have been presented as "more than 80 years." Edith Reiter, the proprietor of Wilhelm Heckel GmbH, has assigned it a date of 1906. As in the 1905 prospectus, portions of the text are given in German, French, and English. These pages were kindly made available to us by Albert Rice.

1900.[11] Furthermore, in a section of text from the 1905 prospectus that has not been quoted by other writers, Heckel noted:

> Meanwhile, the significance of such an instrument was repeatedly pointed out to me by many artists; I reflected a great deal about the matter, as I was convinced of its importance.
>
> The final stimulus for further researches was given to me by Messrs. Prof. W. Altenburg in Würzburg and Gustav Starke, the first Kapellmeister at the Municipal Theater in Freiburg im Breisgau, who likewise pointed out the great value of such an instrument.[12]

Thus, while Wagner may have played a role in stimulating the heckelphone's invention, we must conclude that the composer's role was indirect, as his reported conversation with Wilhelm Heckel predated active work on this project by fully two decades. Other German musicians of the late nineteenth century played a greater role than did Wagner himself in guiding Wilhelm Heckel towards developing the heckelphone.

Bass oboes in the late nineteenth century. The idea of an instrument to function as a bass to the oboe and English horn was not novel; such instruments had lurked on the fringes of the European instrumentarium since the early eighteenth century, variously described as "tenor," "baritone," "basset," or "bass" oboes.[13] Henri Brod illustrated a bass oboe in his *Méthode* of 1830.[14] The Triébert firm, the dominant French oboe maker of the nineteenth century, introduced new bass oboe models in

11. Wilhelm Hermann Heckel and August Heckel were born in 1879 and 1880 respectively (Waterhouse, *NLI*, 168).

12. "Inzwischen wurde ich von vielen Künstlern wiederholt auf die Bedeutung eines derartigen Instrumentes hingewiesen; viel dachte ich darüber nach, denn ich war von der Wichtigkeit eines solchen überzeugt.

"Die letzten Antriebe zu weiteren Versuchen gaben mir die Herren Professor W. Altenburg in Würzburg und Gustav Starke, I. Kapellmeister am Stadttheater zu Freiburg i. Br., welche ebenfalls auf den grossen Wert eines derartigen Instrumentes hinwiesen" (translation by Thomas G. MacCracken).

13. Two-keyed bass oboes were made as early as 1700 by Johann Christoph Denner of Nuremberg, likely as copies of French instruments (Martin Kirnbauer, *Verzeichnis der Europäischen Musikinstrumente im Germanischen Nationalmuseum Nürnberg. Band 2, Flöten- und Rohrblattinstrumente bis 1750* [Wilhelmshaven: Florian Noetzel Verlag, 1994], 159–61). A specimen by Charles Bizey (Paris, fl. 1716–after 1752) at the Musée de la Musique, Paris, is listed in Phillip T. Young, *4900 Historical Woodwind Instruments* (London: Tony Bingham, 1993), 23. Bizey bent the lowest part of the bore 180 degrees, so that the bell vented upwards.

14. (Paris: Chez Schonenberger, 1830), 107.

1827[15] and again in 1855.[16] The firm's catalog of c. 1861 (fig. 2, left) called this instrument "Baryton (hautbois ténor)" and stated that "This instrument is an octave below the oboe in C, and its fingering is identical; the quality of its tone is beautiful and does not lack power."[17] In 1879, this instrument's "thin and not very distinct tone" represented Wagner's understanding of the bass oboe.[18]

In 1889 the Triébert firm's ex-foreman, François Lorée, introduced a bass oboe in the modern straight form,[19] which attained a limited usage in France (fig. 2, right); at least one was used in Germany.[20] In addition, the early twentieth century saw several German makers working on a bass oboe. Hermann Ficker of Wiesbaden built one about 1905, and a similar instrument by his sometime associate Reinhold Lange has been reported.[21] It is uncertain whether these latter specimens were developed

15. Geoffrey Burgess and Bruce Haynes, *The Oboe* (New Haven: Yale University Press, 2004), 185.

16. Henri Marie François Lavoix, *Histoire de l'instrumentation depuis le seizième siècle jusqu'à nos jours* (Paris: Firmin-Didot, 1878), 108–09.

17. Triébert, *Nouveau Prix-Courante* (as reprinted in *Larigot*), 5: "Cet instrument est à l'octave basse du hautbois en ut, et son doigté est identique; sa qualité de son est belle et ne manque pas de puissance" (translation by Robert Howe). The Triébert baryton was offered in two mechanical configurations, corresponding respectively to the oboe designs known as Système 4 and Système 5; both had bent-up bells.

18. See Heckel's account of his 1879 meeting with Wagner, given above at n. 8. Nineteenth-century writers who mention the bass oboe are virtually limited to those promoting the instrument, including the makers Henri Brod, Frédéric Triébert, and A. M. R. Barret (the latter in *A Complete Method for the Oboe* [London, 1855; reprint London: Boosey and Hawkes, no date], 2). This suggests that it had inadequate volume and character of tone to be useful, so Wagner's desire for something similar but more powerful was understandable. Two other double-reed instruments filling the octave between the oboe and bassoon, namely the fagottino and the tenor sarrusophone, had serious deficiencies in tone color and volume; neither instrument achieved orchestral usage. Fagottinos were advertised by Heckel in catalogs of c. 1906 and c. 1919, but not thereafter. See Klapproth, "Hundert Jahre Heckelphon," 55.

19. Philip Bate, *The Oboe* (London: Ernest Benn Limited, 1956), 104–05. The British oboist and scholar James Brown, who has studied the Lorée archives, reports that Lorée sold its first bass oboe, serial no. E75, in 1889; seven more bass oboes were manufactured before 1900, including one made to English high pitch (letter of March 8, 2004, to Robert Howe).

20. By Carl Erkert in Cologne: see below at note 29.

21. Waterhouse, *NLI*, 115, 224. Waterhouse notes that Ficker and Lange, in 1889, made bassoons "under clandestine supervision of W. Heckel's foreman Stritter," who was largely responsible for Heckel's successful contrabassoon. Stritter joined Lange in 1901, even while suing Heckel for patent infringement; perhaps he brought the idea of the heckelphone from the Heckel workshop to Ficker and Lange. Ficker succeeded Lange in 1905.

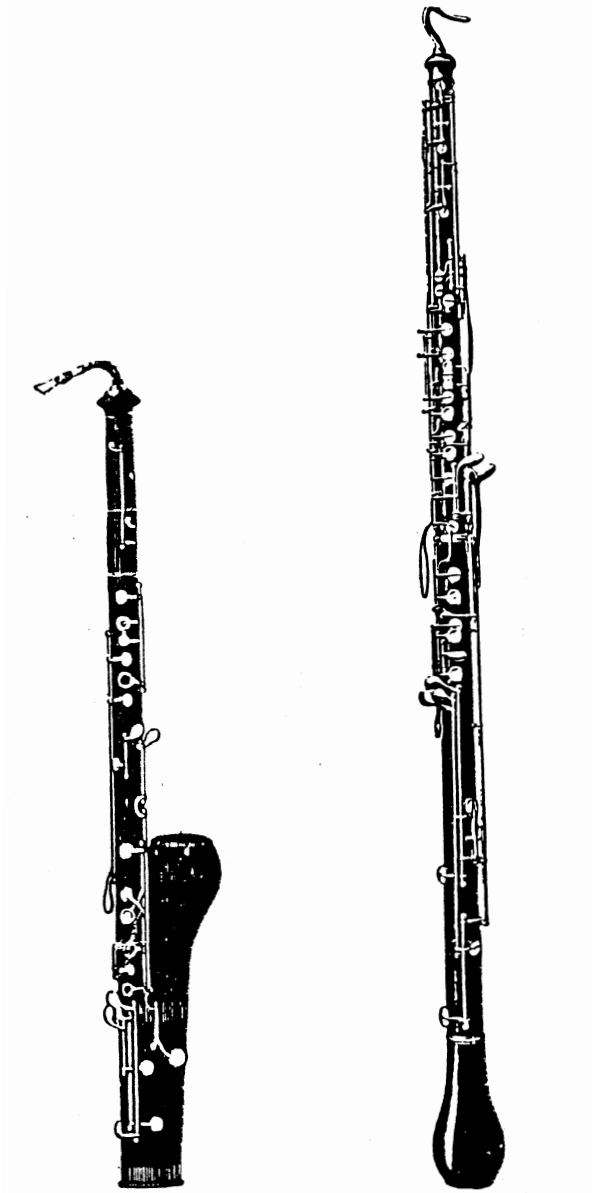

FIGURE 2. Left, Triébert's bass oboe, from his catalog of c. 1861. Right, Lorée's bass oboe, from catalog of 1913, showing the modern form. Both illustrations courtesy of of Bruno Kampmann.

in parallel with the heckelphone, or as a response to it. Heckel's catalogs of c. 1906 and c. 1926 show "Heckel-bass-oboen," distinct from heckelphones and looking for all the world like the Lorée model.[22]

Heckel's twenty-year period of reflection allowed him to consider the acoustical characteristics necessary for the heckelphone. To achieve a more robust sound than that of the bass oboe, Heckel came to realize that his instrument would require a wide bore and large toneholes. Heckel simply projected the bore dimension of his own oboes (which were uncommonly wide for German oboes) onto the new design, and enlarged the toneholes relative to the bore. A Heckel catalog of 1931 notes that "The bore of the Heckelphon has a diameter exactly double that of the Heckel-Oboe,"[23] hence the cross-sectional area is four times that of the Heckel-Oboe. The bore of a bass oboe is actually less sharply conical than that of the standard oboe;[24] for example, in a 1986 Lorée bass oboe, the cross-sectional area is less than double that of a contemporary Lorée oboe at the same location. Thus the bore of a heckelphone contains more than twice the volume of the bass oboe's.

In making these design choices Heckel was undoubtably influenced by other woodwinds that came to his attention in the late nineteenth century. The first was a rare variety of bass oboe from eighteenth-century Switzerland, the wide-bored *basse de musette*. Klapproth reports that in 1900 Heckel, a keen wind instrument collector, made a copy of such an

22. The c. 1926 catalog was made available to us courtesy of Michael Finkelman. Edith Reiter has assigned it a date of 1925–27 by comparison to materials in the Heckel archives.

23. Heckel, *Centennial Catalogue,* 20. (This catalog bears no real title; on the cover is written only "In der Kunst ist das Beste gut genug!" [In art the best is good enough!] and "Heckel-Instrumente sind Kunstwerke!" [Heckel instruments are works of art!], together with the legend "1831 / HECKEL Über 100 Jahre Weltruf [More than 100 years of world-wide fame] / 1931." Edith Reiter has described it to Peter Hurd as the firm's "Centennial Catalogue," so we will use this title for all subsequent references. We thank Henry Skolnick for sharing this catalog with us.) The volume of sound available to a conical woodwind increases directly with conicity (the rate of expansion of the bore, expressed as a percentage), tonehole size, and the ratio of tonehole to bore diameters. Extensive data to this effect are presented in Robert Howe, "The Boehm Oboe and Its Role in the Development of the Modern Oboe," *Galpin Society Journal* 51 (2003): 27–60, at pp. 32–33. All bore measurements in this discussion are by Robert Howe.

24. The conicity of Robert Howe's bass oboe, Lorée HW13 (1986) is 1.8%, markedly less than that of recent Lorée oboes (2.4–2.5%). This is likely a deliberate attempt to keep the air column to a manageable size, which allows the bass oboe to avoid some of the problems of over-loudness that have plagued the heckelphone.

instrument, which remains to this day in the firm's museum (fig. 3).[25] Alain Giraud has measured several original *basses de musette*, whose composite bore profile has a conicity of 2.9%, compared to 2.6% for heckelphone no. 3985.[26] By 1890 Heckel also knew of another instrument that was just coming into use outside of France, the saxophone, whose bore and toneholes were larger than those of any previous woodwind.[27] The ratio of tonehole to bore diameter of the heckelphone (0.74–0.80 for no. 3985) is similar to that of the saxophone (0.70–0.76) and greater than that of the bass oboe (0.51–0.64), or of any other oboe, modern or historical. Thus the heckelphone resembles a saxophone in its tonehole design, although not in its external appearance.

It is important to emphasize that the heckelphone is a different kind of bass oboe from the designs developed by Lorée and Triébert, even though—like them—it has a conical bore, a three-piece body, and is sounded by double reed entirely governed by the lip. Because its bore is so much wider than other kinds of oboes, and because it was designed independently to meet a specific orchestral need, Philip Bate reminds us correctly that it is "better considered as an instrument *sui generis*."[28]

The early heckelphone. Heckel introduced the heckelphone on August 11, 1904, at the Villa Wahnfried in Bayreuth. The first player was Carl Erkert, an oboist from Cologne, who wrote of the event in a laudatory testimonial:

> At the request of Mr. Heckel I introduced his new instrument, called heckelphone (a prototype), to Messrs. Dr. Carl Muck, Prof. Nikisch, Dr. Hans Richter and the festival orchestra at the Villa Wahnfried. I was able to play on this wonderful-sounding instrument immediately.
>
> The heckelphone should not be confused with the French baritone oboe, which I often play in Cologne, because the heckelphone is a completely new type of woodwind. The response, slurs, tuning, mechanism, in short, everything one expects from a first-class woodwind instrument, were combined to

25. Klapproth, "Hundert Jahre Heckelphon," 57.

26. Giraud's data are taken from Finkelman, "Centenary Salute," 38–39; heckelphone data were measured by Robert Howe. Finkelman's analysis, which uses data from an unspecified source, overstates the difference between the heckelphone and the standard oboe, because he overlooks the fact that the bass oboe is actually less acutely conical than French or German oboes.

27. The Heckel *Centennial Catalogue,* 24, states that "The Heckel-Clarina is a brass instrument, similar to a Saxophone. . . . The instrument was invented in 1890 by Wilhelm Heckel . . ." (text in English in the original).

28. Bate, *The Oboe*, 104.

FIGURE 3. *Basse de musette*, copy by Wilhelm Heckel (c. 1905) of original by Jeanneret, c. 1775. Courtesy of Ralf Reiter, Wilhelm Heckel GmbH.

> the highest degree. The masters mentioned above were greatly surprised by the beautiful tone of the heckelphone, and confirmed this to Mr. Heckel.[29]

The reaction to this new instrument was very positive, although Wilhelm Altenburg, a most perceptive critic, concluded a lengthy article devoted to it by expressing the hope that "the splendid 'Heckelphone' may really have a future and not disappear silently from the scene, perhaps only in order to one day decorate some museum as a curiosity of the twentieth century."[30]

29. "Auf Wunsche des Herrn Heckel habe ich dessen neues Instrument, genannt Heckelphon—Modell—in der Villa Wahnfried, sowie auch den Herren Dr. Carl Muck, Prof. Nikisch, Dr. Hans Richter und dem Festspielorchester vorgeführt. Ich konnte sofort auf diesem wunderbar klingenden Instrument blasen.

"Das Heckelphon ist nicht zu verwechseln mit der französischen Bariton-Oboe, auf welcher ich in Cöln öfters blase, denn das Heckelphon ist ein ganz neuer Typus von einem Blasinstrument. Die Ansprache, Bindungen, Reinheit, Mechanik, kurz alles was man von einem erstklassigen Holz-Blasinstrument verlangen kann, war im höchsten Maasse vereinigt. Obengenannte Meister waren aufs höchste überrascht von dem schönen Ton des Heckelphons und haben dies auch Hernn Heckel bestätigt." This text (also quoted in Klapproth, "Hundert Jahre Heckelphon," 58) comes from the 1905 prospectus, which contains numerous testimonials from prominent musicians in addition to the description and fingering chart reproduced below as figure 4. Carl Erkert (b. 1873), identified there as a member of the Bayreuth Festival Orchestra and teacher at the Cologne Conservatory, was a member of the Cologne Gürzenich Orchestra from 1899 to 1921.

30. "Möchte das prächtige 'Heckelphon' wirklich auch eine Zukunft haben und nicht lautlos von der Bildfläche wieder verschwinden, um vielleicht einstens nur als eine Kuriosität des XX. Jahrhunderts irgend ein Museum zu zieren." Wilhelm

Heckel soon afterwards undertook a tour of Germany with his new instrument, showing and promoting it to composers and conductors at the Essen Municipal Music Festival,[31] where Strauss was conducting his *Sinfonia Domestica*. He also travelled to Würzburg, Berlin, Düsseldorf, Cologne, Mannheim, and Paris to promote his instrument, collecting letters of recommendation from his hosts at each stop.[32]

The initial state of the instrument is shown in a 1905 prospectus and fingering chart for the heckelphone, including an accompanying descriptive text, parts of which are given in French and English as well as in German (fig. 4). The instrument's range is shown as extending from (sounding) B♭ (or B♮) to g^2, with fingerings for $g\sharp^2$ and a^2 given but described as "rarely used" ("selten anzuwenden"). The text notes that "The fingerings of the 'Heckelphone' are the same as those of the oboe or the cor anglais. The instrument can therefore, immediately, be played by any oboe-player without having practised it." The standard pitch is said to be a' = 435 Hz, but "the Heckelphone can be furnished in any other pitch."[33]

The model 36a heckelphone is shown, with the fingering configuration of a typical early twentieth-century German oboe, including the arrangement of keys for use by the little finger of the right hand to produce C, C♯, and E♭, the arrangement of keys for the left little finger (producing E♭, F and low B), and an alternate B♭ touch for the left thumb (which is typical of and unique to Eastern European oboes). These details reveal the final but most important point of influence in inventing the heckelphone, namely the late nineteenth-century German oboe (fig. 5). Although morphologically remote from the modern oboe, the early heckelphone was similar to German oboes of the time.[34] German oboes of 1900 typically had a small rim of ivory partially closing the bell; this feature, which promotes the use of cross fingerings in the upper register, is imitated in the heckelphone (and in large oboes) by the small distal

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Altenburg, "Das 'Heckelphon', ein neues Blasinstrument," *Zeitschrift für Instrumentenbau* 24, no. 35 (September 11, 1904): 1023–24, at p. 1024; reprinted in full as part of Heckel's 1905 prospectus.

31. Joppig, "Achtzig Jahre Heckelphon," 24.

32. This remarkable tour is thoroughly described in Klapproth, "Hundert Jahre Heckelphon," 59–60.

33. Heckel prospectus, 1905; this and the previous quotation are taken from the original English text.

34. Present-day players find the heckelphone to be much less like the oboe than early examples suggest, perhaps because nearly all of us play French-model instruments.

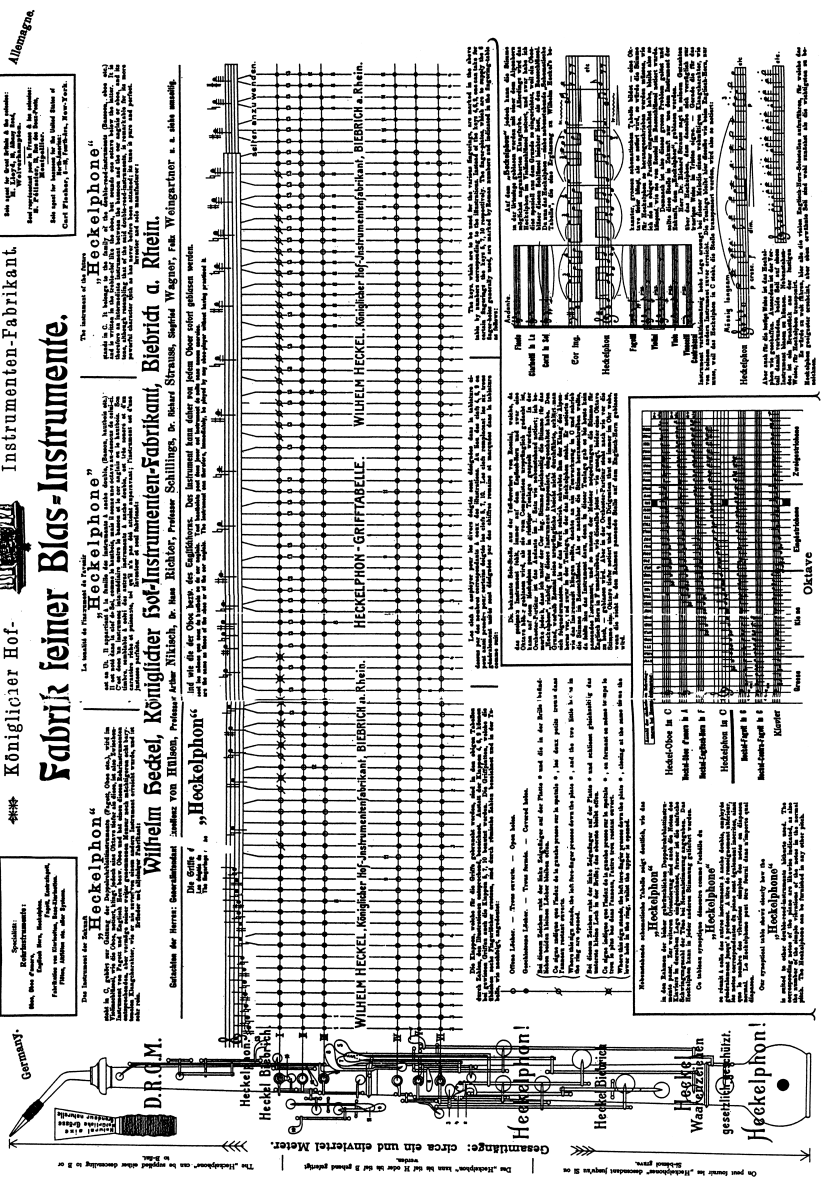


FIGURE 4. Heckelphone prospectus of 1905, showing a model 36a heckelphone. Note the reed in the upper left corner.

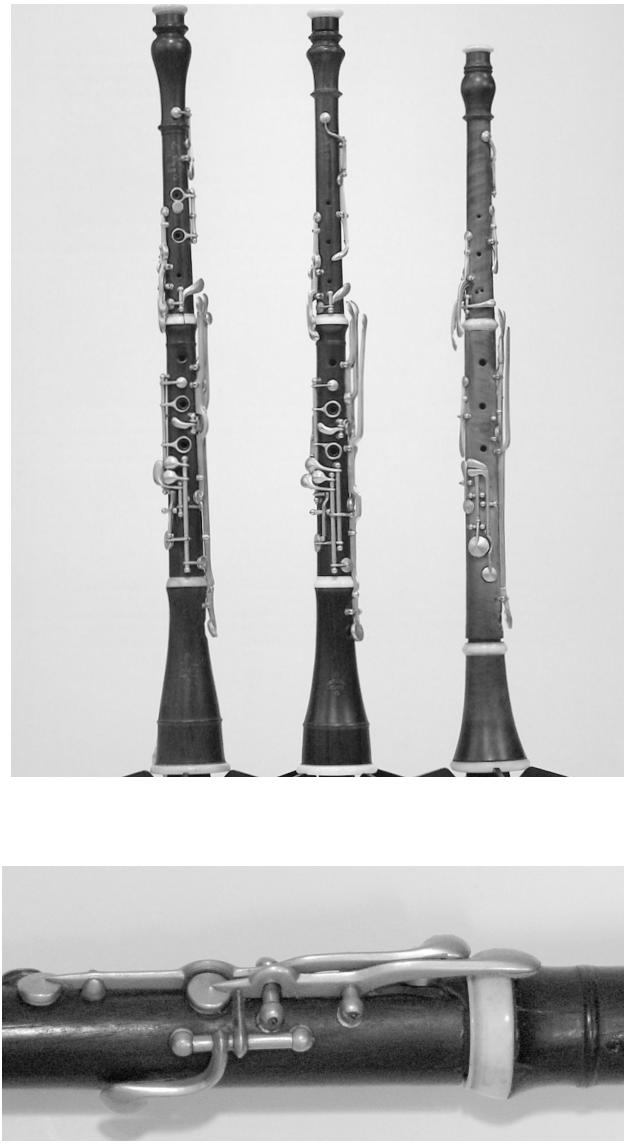


FIGURE 5. Top, oboes by Otto Mönnig (Leipzig, c. 1900–10 and c. 1915–17) and by Heckel (Biebrich, c. 1890), showing the simple key systems and the variable assignment of keys to the right little finger. Instruments on the far left and right show the "German" layout. Bottom, side view of oboe on far left, showing alternate thumb touch for B♭, also characteristic of "German" oboes. Collection of Robert Howe.

opening in a globular bell. The instrument shown in the prospectus has a single vent hole in the center of the bell and no evident floor peg. The reed is clearly illustrated (see discussion below). The fingering system shown is that of a typical German oboe of c. 1900, although the Heckel firm states its willingness to supply other systems as well.

The prospectus includes several short musical examples, which are taken from the English horn repertoire and thus exploit the uppermost register of the heckelphone; indeed, Richard Strauss is quoted as advocating that the heckelphone be used to play the two extended English horn solos from Wagner's *Tristan und Isolde*. Given the high ranges presented in these excerpts, one wonders if early heckelphones were more comfortable in the upper register than modern ones are.

The sound of the heckelphone. The first musicians to hear the heckelphone were captivated by its voice. Some noted it as having a noble or intense sound: a Cologne newspaper commented that it "sounds more beautiful and fuller than the English horn and the bassoon in the same range and forms the missing link between the bassoon and the oboe."[35] Hans Richter called it "a fine-sounding, noble instrument, a wonderful new stop of the woodwind choir," while in the opinion of Joseph Schlar, Kapellmeister at the Wiesbaden court, "it offers imaginative composers a very rich opportunity to be able to speak from heart to heart, and it forms an enrichment of our oboe family."[36]

The voice of the heckelphone is indeed distinct; the plaintive heckelphone solos in the soundtrack to the 1960 film *Spartacus* (composed by Alex North, orchestrated by Maurice de Palch) cannot be confused with any other instrument. As the early descriptions imply, it posesses timbral elements of other conical-bore woodwind instruments, including the English horn, bassoon, and tenor saxophone. It blends especially well with clarinets and bassoons, presenting a wonderful contrast to the more

35. "Das Instrument . . . klingt schöner und voller als das englische Horn und das Fagott in der gleichen Tonlage und bildet das bisher fehlende Bindeglied zwischen Fagott und Hoboe" (*Kölnischer Zeitung*, October 3, 1904, quoted in the Heckel prospectus of 1905).

36. "ein klangschönes, edles Instrument; ein herrliches neues Register der Holzharmonie-Orgel" (Richter); "es bietet phantasiereichen Componisten reichste Gelegenheit, vom Herzen zum Herzen sprechen zu können, und bildet eine Bereicherung unserer Oboefamilie" (Schlar); both quotations appear in the Heckel prospectus of 1905.

melancholy sounds of the English horn and bass oboe. Later commentators agree with those of 1904, and Bate's description is as good as any: "When well controlled, the tone of the heckelphone is rich and satisfying, with great body and considerable prominence in the orchestral ensemble."[37]

The heckelphone's timbre, like those of other double-reed instruments, is thickest and most gruff in the lowest fifth of its range. The middle range is full and firm. The range from written f^2 to c^3 introduces a certain chiff into the sound, while the uppermost notes can be thin and wild, resembling the same tones sounded on a bassoon but with more substance. The different parts of the instrument's range blend more completely than those of the oboe or bassoon. As Bate implies, the heckelphone colors any ensemble that employs it; once a sophisticated listener has heard Strauss's *Salome* or the *Alpensinfonie* with heckelphone, omitting the instrument will seem a travesty.

The nature of the heckelphone's tone has turned out to be a disadvantage for the instrument. In the hands of an inexperienced player, the heckelphone is easily blown too loudly and can unduly dominate the double-reed ensemble, particularly in the lower and middle ranges. Heckel would later introduce a series of changes to the bell to try to control this aspect of the heckelphone's sound.

Later Development of the Heckelphone

Fingering systems. Modern oboes are, with the sole exception of those used in Vienna, derived from a series of models developed in the mid-nineteenth century by the Triébert firm and later perfected by Lorée. However, at the turn of the twentieth century, oboe making had two major viable schools, the German and the French. These differed in many ways: the German oboes had wider bores and less complex keywork (generally ten to twelve keys, compared to thirteen to sixteen for the French),[38] used cross-fingerings routinely in the upper register, had a

37. Bate, *The Oboe*, 105. Many descriptions of the heckelphone, including Bate's, hint that the bottom register of the instrument can be excessive in volume and coarse in sound. This is a typical problem when the instrument is taken up on short notice by an inexperienced player.

38. Many German school players used "simple system" oboes, in which there are minimal mechanical connections between the keys.

lowest note of B rather than B♭, and employed a wider, more resistant reed. They have a distinctly "fuzzier" sound than we hear from German players today, who, like their French counterparts, use instruments modelled after the Système 6bis invented by Alphonse Lucien Lorée and Georges Gillet in 1906 (fig. 6).[39] (Until then, no clear winner had emerged from among the several models of oboe competing for dominance within the French school.)

The early years of the twentieth century saw a wholesale abandonment of the German oboe in favor of French models. This process was encouraged by Strauss and other well-travelled composers and conductors, mirroring the abandonment of the French *basson* in favor of the Heckel *Fagott*. This change is evident in makers' catalogs; late nineteenth-century German woodwind catalogs show no French-style oboes. Heckel's catalog of c. 1906 shows ten models of "deutsche Oboen" (only four of which are simple-system instruments) and four "französische Oboen." By 1931, the Heckel centennial catalog shows eleven varieties of oboe: five models with more fully mechanized German key systems and German bores ("Heckel-Bohrung"), two with French keywork on a German bore, and four with French key systems and bores ("Konservatoriums-Bohrung"). The simple system oboes are absent, indicating that by 1931 Heckel was no longer making such instruments (fig. 7).[40]

As German oboists moved to the French-model instruments, it was logical to adapt the heckelphone to match the fingering and reed systems now used on the oboe; indeed, it was incumbent upon Heckel to do so, in order to facilitate international sales of the new instrument.[41] During the century of the heckelphone's existence instruments have therefore been built with a variety of mechanisms, falling into three basic groups, as shown in figure 8. German or simple system instruments—models 36 (with range to low B), 36a (to B♭), and 36b (to A)—follow the

39. Howe, "Boehm Oboe," 48.

40. These Heckel catalogs are from the collections of Peter Hurd, Albert Rice, Michael Finkelman, and Henry Skolnick. Bate (*The Oboe*, 86) and Burgess and Haynes (*The Oboe*, 175) reproduce a "table of models available from Heckel, c. 1935" that shows oboes identical to those illustrated in Heckel's 1931 *Centennial Catalogue*.

41. Most woodwind players find it very advantageous for an auxiliary instrument to finger and feel as much like the principal instrument as possible. Since the heckelphone was intended as a doubling instrument, it made both musical and commercial sense for Heckel to offer it in whatever mechanisms oboists were currently using.

FIGURE 6. French oboe models from which heckelphones are derived: left, Triébert Système 5 (36i); center, Système 6 (36k); right, Système 6bis ("Full Conservatory"; 36 cons and 36 voll cons). From F. Lorée, *Prix Courante* (Paris, 1913). Courtesy of Bruno Kampmann.

fingering patterns of late nineteenth-century German oboes.[42] Heckelphones with what the c. 1906 catalog (fig. 9) calls "French oboe finger-

42. The c. 1906 Heckel catalog states that on these models "The fingering system is exactly like the Heckel oboe (German model)" ("Die Griffweise ist genau wie bei der Heckel-Oboe [Deutsche Bauart]").

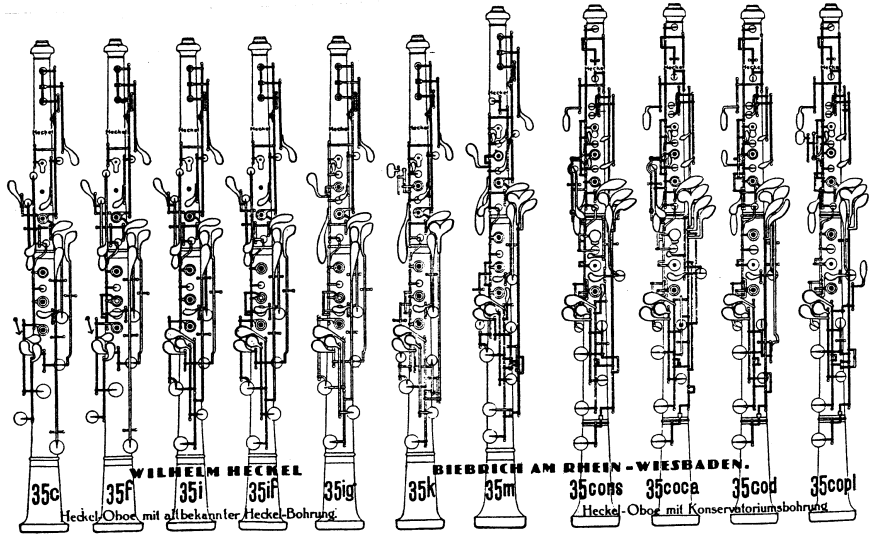


FIGURE 7. Oboes from Heckel catalog of 1931, p. 15.

ing" ("französischen Oboegriffen") were modelled after the Triébert Système 5 oboe and were likewise offered in three models differing only in the lowest note available: 36g (to low B), 36h (to B♭) and 36i (to A).[43] (Heckelphones with range to low A were not described in the 1905 prospectus but are noted in the c. 1906 catalog; the choice of lowest note served no apparent purpose except to allow the sale of a cheaper model of the instrument.[44]) The basic Conservatory system (Model 36k, to low A) and the full Conservatory system heckelphones (models 36 cons and 36 voll cons, also to A) are modelled on the modern French oboe.

The German key system (models 36, 36a, and 36b) is the earliest, made from 1904 until 1937. Here, as on other simple-system woodwinds, the standard fingering for written c^2 is – 2 – / – – – (in this case adding

43. The various Triébert-derived oboe systems are explained more fully in Howe, "Boehm Oboe," 47–50, and in such standard books on the oboe as Burgess and Haynes (133–145), Baines (100–111), and Bate (60–71). Système 4 oboes remained in use until the mid-twentieth century.

44. In Heckel's c. 1906 catalog the prices of the model 36, 36a, and 36b heckelphones were 655, 690, and 730 marks, while the 36g, h, and i cost 675, 710, and 750 marks respectively (in each case with silver keys; there were significant discounts for nickel-silver or silver-plated keys). In comparison, the most expensive oboe, clarinet, and bassoon models sold for 525, 420, and 1250 marks respectively.

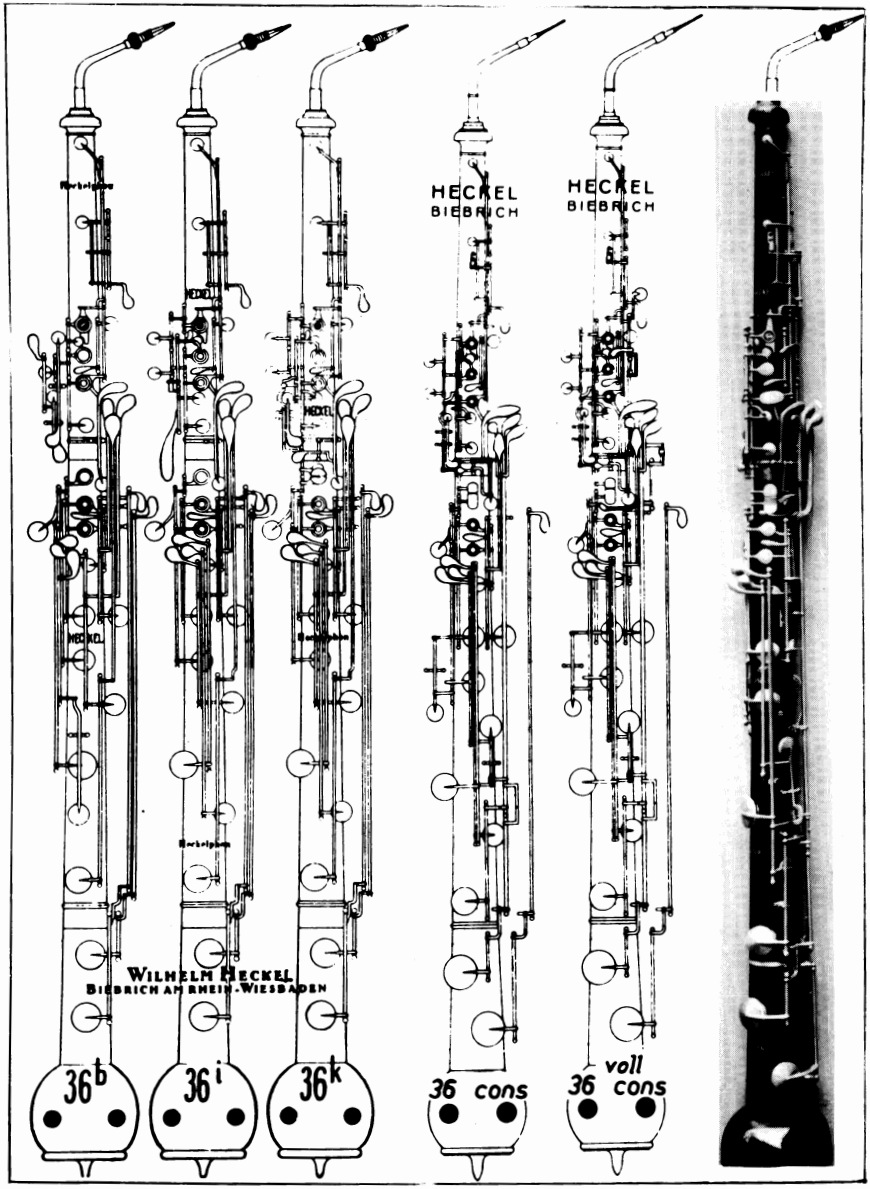


FIGURE 8. Heckelphone schematics, showing (from left to right) models 36b, 36i, 36k, 36 cons, and 36 voll cons. Courtesy of Edith Reiter, Wilhelm Heckel GmbH.

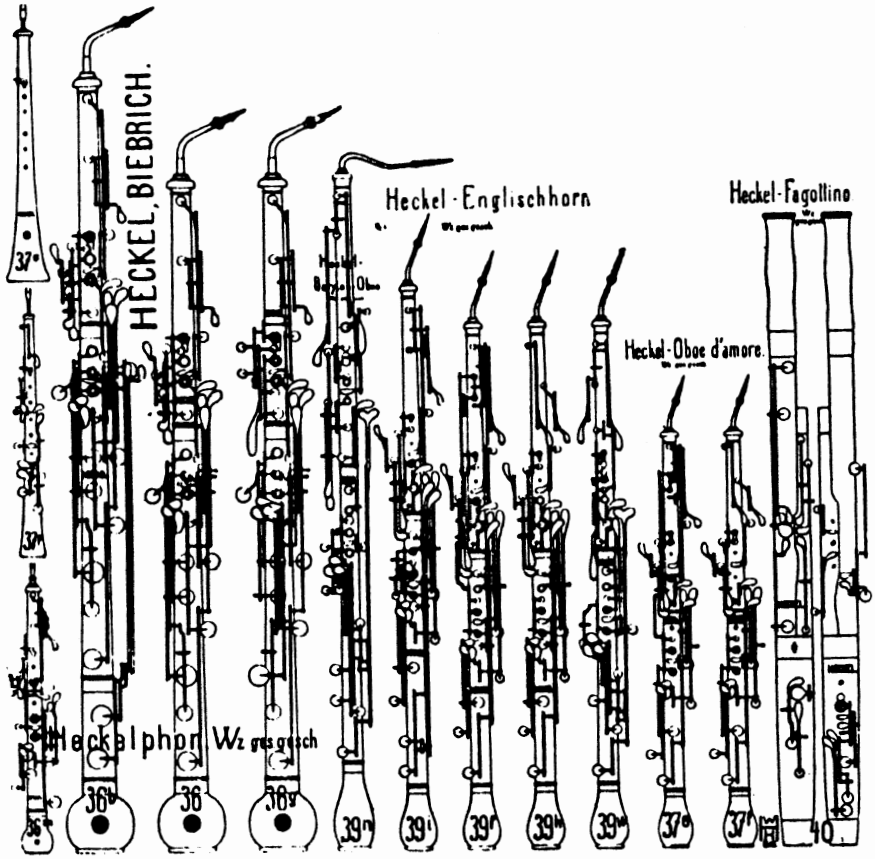


FIGURE 9. Heckelphones and other double reed woodwinds from catalog of c. 1906, including F piccolo heckelphone (left, model 36m) and faggotino (right). Heckelphone models shown are 36b, 36, and 36g.

4 and 5 for better voicing).[45] This note can also be played with the B fingering (1 – – / – – –) plus an upper side key actuated with the side of the right palm. Similarly, B♭ is played with the A fingering (1 2 – / – – –) plus another adjacent palm key, which is duplicated for the left thumb.

45. Fingerings are here represented by numerals to indicate holes closed by the player's fingers and dashes to indicate holes left open. Fingers 1, 2, and 3 are the index, middle, and ring fingers of the left hand, while 4, 5, and 6 are the same fingers on the right hand. Keys for the little fingers and spatulas activated by any one of the other fingers are identified by the name of the tone thus sounded.

The lower joint of all heckelphones is fingered like an oboe or Oehler clarinet, using 1 2 3 / 4 – – for F♯ and 1 2 3 / 4 – 6 for F. On models 36, 36a, and 36b the key cluster for the left little finger (operating keys to sound E♭, low B, and F) has different key positions from those of the Conservatory system oboe: in the "German" arrangement, the three keys for the left little finger are, from outside to inside, E♭, B, and F, while in the French system they are B, F, and E♭. The arrangement of the right little-finger cluster likewise follows that of the German oboe, with the C key below and E♭ above, the reverse of the French oboe.

Models 36g, h, and i are listed in the Heckel catalogs as early as c. 1906, with the first known specimen (serial no. 50) being a model 36i made in 1911.[46] The mechanism used for these heckelphones resembles that of Triébert's Système 5 oboe in having a single side key for the right hand to activate keys on the upper joint for C and B♭; this is called a Barret action when used on oboes and a Clinton action on clarinets.[47] No bridge exists between the upper and lower joints. The single side key of the model 36i minimizes awkwardness for the player, who does not have to use adjacent keys for the right palm to go from B♭ to C, and produces a clear B♭. Had a bridge key existed between the joints to allow the F♯ key to actuate the vent for B♭ and C (as on a Conservatory oboe), hole 4 would also be closed and the note would sound stuffy; this was solved in the model 36k with a split key for 4, itself an imperfect solution.

Before 1925, the lower joints of model 36i heckelphones had the German arrangement of the cluster of keys for the left little finger. Since 1925, the lower joint of this model fingers like a Conservatory-model oboe, a change made simultaneously with the introduction of the one-piece heckelphone bell (see below and fig. 8; the key cluster in question is half-way up the instrument to the reader's left). However, as the c. 1926 catalog shows (fig. 10), the German arrangement remained available on the model 36b.

Model 36k was introduced about 1927; the Heckel catalog of 1931 shows it together with models 36b and 36i (fig. 11). This model fingers

46. This delay of six years points out the preponderance of initial sales to German and other Eastern European musicians, who would have been most accustomed to the simple-system fingerings of models 36, 36a, and 36b. No heckelphone of either model 36g or 36h is known, nor is any listed in the Heckel archives.

47. Waterhouse, *NLI*, 66. Contrary to the modern oboe and English horn, heckelphone joints separate above the G♯ key cup, thereby eliminating the possibility of having an A resonance key as found on the English horn. Without this feature the standard fingering for middle-register B (left index finger only) may sound stuffy; as a result, many players add the G♯ key, or 5 and 6, to voice this note.

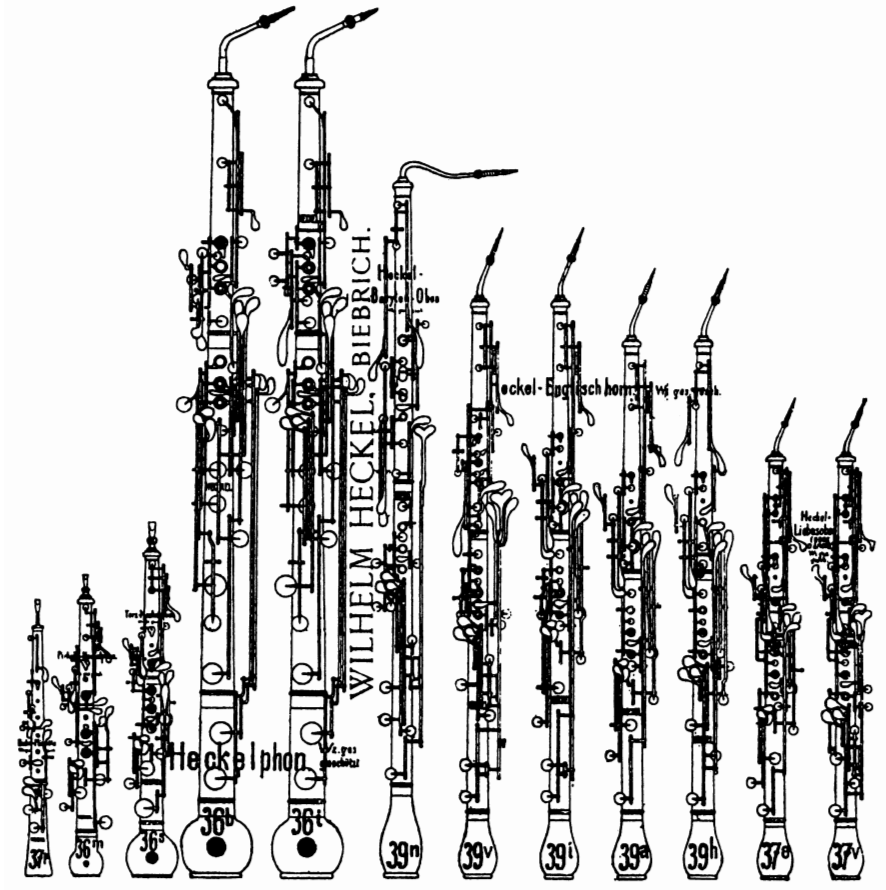
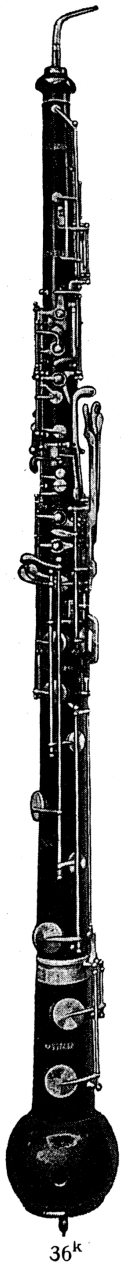


FIGURE 10. Heckelphones and large oboes from catalog of c. 1926, including the model 36s *Terz-Heckelphon* as well as models 36b and 36i.

like a basic Conservatory-model oboe (Système 6) throughout, but lacks an F resonance key and articulations for F♯–G♯, E♭–D♭, and low B–C♯.[48] It is the first heckelphone to have the duplicate G♯ key for the right palm,

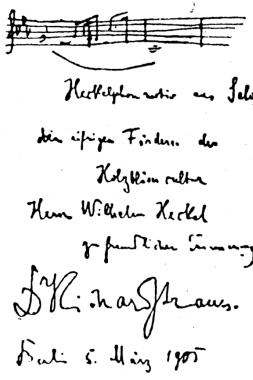
48. "Articulated" notes here means those whose keys are mechanically linked. Articulations permit the player to hold one key down while opening and closing another; the linkage causes both keys to open and close as necessary to produce a clear, in-tune interval. This can facilitate smooth slurring and is essential for many trills. The articulations listed are integral to the technique of the modern oboe. The F resonance key is a mechanism that opens a small pad low on the bottom joint when the note F is fingered as a "fork" (1 2 3 / 4 – 6). Absent the resonance key, this fingering is intolerably stuffy; it can be improved by the judicious use of keys from the little-finger clusters, but at the expense of smooth technique and accurate pitch.

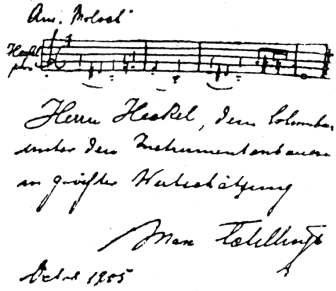


Die berühmten modernen **Komponisten** verwenden das **Heckelphon** in ihren Werken.

The **Heckelphon** already takes a prominent part in the orchestration of works by celetrated modern **Composers.**

Le **Heckelphone** est adopté par les **Compositeurs** modernes.





Werke für Heckelphon:

Kurt Atterberg: Dollar-Symphonie in C-Dur.

A. Bax: Symphonie Nr. 1 in Es.

Frederick Delius: Fennimore and Gerda, Ton Poem „Paris", Tanzrapsodie.

Paul Hindemith: Trio op. 47.

Gustav Holst: The Planets.

R. Klose: Sonnengeist.

Franz Moser: 3. Symphonie in Fis moll op. 48.

Max Schillings: Moloch, Mona Lisa.

Richard Strauß: Salome, Elektra, eine Alpensymphonie, Josefslegende.

William Vaughan: London-Symphonie.

Felix Weingartner: Symphonie Nr. 3 op. 49.

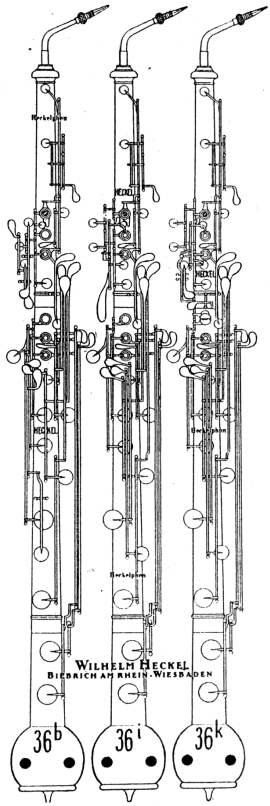


FIGURE 11. Heckelphones from Heckel catalog of 1931, showing models 36b, 36i, and 36k; note the prominence given to model 36k.

as in Système 6, which simplifies certain combinations between G♯, D♯, and low B. Key 4 is a split (double) plate, akin to the split plate key for 1 found on the modern English horn (fig. 12). Here, the upper half is pressed when playing B♭, and acts across the upper joint to open a small tonehole between 2 and 3 without closing 4 (which would dull the sound of B♭). The full plate closes hole 4 and is employed when playing F♯ and all lower tones.[49] With this model Heckel finally abandoned the choice of lowest note, setting A as the standard.

A characteristic of mechanized woodwinds is the linkage of touch-pieces for fingers 1–6 to remote keys, thus permitting action at a distance. These linkages vary between instruments and manufacturers. Early heckelphones have a split-ring key linkage copied from Heckel's English horns (fig. 12). This often-awkward mechanism requires the player's fingerpad to depress two touches simultaneously, one inside the other; at times the finger can be pinched. The split-ring links were replaced by 1955 with plateau keys as on a Système 6bis oboe. The model 36 cons and 36 voll cons (i.e., "Conservatory" and "full Conservatory") heckelphones have all the keys and mechanisms of the modern French oboe, with plateau keys. Model 36 cons (made from 1955 to 1963) adds an F resonance key and an articulated D♭–E♭ to the model 36k; model 36 voll cons (1963–present) completes the process of imitating the Conservatory oboe by adding articulations for F♯–G♯ and low B–C♯ (the latter only since 1985), as well as a C–D trill.

On older heckelphones, low B♭ and A were obtained through the use of two keys for the right thumb, located just below the thumb rest (fig. 13). (Given that the Heckel bassoon has four key touches for each thumb, one is not surprised to find this maker giving extra responsibility to the player's thumbs.) These both require that the B key also be depressed, by the left little finger. This system was changed on the 36 cons and 36 voll cons models: now, the key cluster for the left-hand little finger includes the touch plate for the low B♭ key as on an oboe, while the right thumb operates only the key for low A. Older heckelphones have oversized touches for the left little-finger cluster, which are impressively

49. The first split plate, on model 36k, was round in shape and evenly split. Later examples, on model 36 cons and 36 voll cons instruments, are long ovals, with the upper plate having about one third the total length. Because this placement of the split makes it ergonomically difficult to play B♭ using the standard fingering, most heckelphone players of models 36k, 36 cons, and 36 voll cons use alternate fingerings such as 1 2 – / 4 – 6 or 1 2 – / 4 5 – plus the F key so as to avoid using the upper plate for B♭.

FIGURE 12. Heckelphone no. 4244, showing (from top to bottom) split key 4, old-style key linkages, and French arrangement of right little-finger keys. Collection of Peter Hurd.

FIGURE 13. Thumb keys for B♭ and A from heckelphone no. 4244.

sculpted but can be hard to reach (fig. 14, left).[50] Late twentieth-century heckelphone left-hand clusters work exactly as on a modern oboe, with touch plates moving hinge tubing in rotation (fig. 14, center), whereas the older models employ long levers directly to the key cups. The oboe-like design keeps the keys out of each other's way, while the smaller excursions of the rotating hinge tubing minimize rotational inertia and the force necessary to move the keys, producing a more supple technique. However, the large pads of a heckelphone, particularly those low on the bottom joint, can require a greater force for surety of closure than such a mechanism provides. Therefore, Heckel has replaced the individual finger touches for the left little finger with flat plates as on a modern saxophone, which again activate long parallel levers. This impressively ergonomic design (fig. 14, right) became standard in 2002.

50. Robert Howe has removed the left F touch from his heckelphone no. 3985 because it gets in the way of the E♭ key.

FIGURE 14. Left-hand key clusters from three heckelphones: left, no. 3985, showing the massive, overlapping touches (collection of Robert Howe); center, no. 4963, showing gracile touches sculpted as on a French oboe (collection of Cornelia Biggers); right, no. 5012, showing new saxophone-derived mechanism, as well as rollers on the C (above) and C♯ (center) keys of the right hand cluster, and the general reshaping of all finger touches (courtesy of Ralf Reiter, Wilhelm Heckel GmbH).

Bell types. Until 1926 the heckelphone bell had a single large vent hole in the globular section, at the point of greatest circumference (fig. 15). The bottoms of these bells are open. A metal peg 22 mm long, mounted on the rear bottom lip of the globular section, keeps the instrument off the floor. The globular section of the bell is detachable from the segment of lower joint leading to the globe (the "bell chimney"), which varies in length with the model of heckelphone (fig. 16). Thus for model 36, with range to low B, the detachable globular bell fits directly onto the bottom of the lower joint of the heckelphone.[51] Model 36a, with range to low B♭, has a small extension between the lower joint and the globular section, on which the B♭ key cup is mounted. Model 36b, which goes to low A, has a longer extension upon which both the B♭ and A key cups are mounted. Such bells are shown in Heckel catalogs of c. 1906, c. 1919, and c. 1926.

There were several advantages to building the bell in this way. It was technically easier to build the bell in two parts, one globular and the other with a gentle taper. Also, the player, when faced with a piece having no low A or B♭, could potentially dispense with the bell chimney and attach the globe directly to the bottom of the lower joint, thus making the heckelphone smaller and lighter. Heckelphones having these old-style bells have been characterized as having "an overwhelming volume of sound, with great resonance and warmth."[52]

Two heckelphones demonstrate an intermediate style of bell.[53] This was still made in two detachable pieces, but rather than having a large anterior vent hole it has three 20-mm holes in the side of the globular section.

In 1927 the model 36k was introduced, at which time the two-piece bell was discontinued; catalogs of 1931 and c. 1935 show only one-piece bells. The modern heckelphone bell has three 20-mm vent holes, equally

51. The only example known to us is in the Kunitachi Museum in Japan, catalog no. 1889; the museum has not shared that instrument's serial number with us.

52. This comment was made at the 2003 meeting of the North American Heckelphone Players' Association by heckelphonist and oboe maker Thomas Hiniker of Rochester, Minnesota, who has studied many specimens; the authors concur. This tonal complexion, however appealing, is subjective, and is not entirely due to the bell; it is undoubtedly also influenced by the thinner walls of heckelphones made before the introduction of the new-style bell.

53. These are no. 4107, from 1929; and another, which has no serial number. The latter is said by its owner (an American collector) to have been made c. 1925, based on his conversations with the original owner.

FIGURE 15. Two-piece detachable bell from heckelphone no. 50, showing globe only. Collection of Peter Hurd.

spaced around the globe (fig. 17). The bell mouth is capped by a circular metal plate having six 6-mm perforations in a circular pattern around a tapered central floor peg, which is 25 mm long and attaches to the plate; the chimney is integral with the globe. Since nearly all heckelphones manufactured from 1926 onward have a range to low A (rarely to B♭), the bell has been constructed in one standard size. A few heckelphones have been made with two bells, one for low B♭ and one for low A. When using the B♭ bell, the player may be able to sit on a chair of normal height rather than a stool.

Several efforts have been made to mitigate the heckelphone's loud lower register by altering the bell. Heckelphones from 1927 and later have a wooden divider, known as a septum, in the chimney of the bell. The septum is 8 mm thick and bisects the full length of the inner diameter of the bell section; it has two 30-mm holes evenly spaced in the middle opposite the toneholes.

A heckelphone "muting" bell also exists (fig. 18). First noted as an extra-cost option in the c. 1906 catalog and first sold with heckelphone no. 42 in 1909, the muting bell is designed to dampen the sound in the lower register on instruments descending to low A. It is shorter than the new standard bell (measuring 178 mm instead of 264 mm, excluding the floor peg), its bore shrinks from 32 to 21 mm as a reversed cone, and it has no septum. The B♭ and A key cups are positioned closer together, and the tonehole beneath the low A key cup (venting the note B♭) is smaller than the tonehole under the B♭ key cup (venting B). The muting bell has no bottom plate; instead, a metal bridge spans the opening and the floor peg is affixed to the center of this bridge. Heckelphones

FIGURE 16. Detachable bell assembled, from heckelphone no. 51. Courtesy of Theo Peeters, Amsterdam.

FIGURE 17. Standard modern heckelphone bell as used on models 36i (after 1926), 36k, 36 cons, and 36 voll cons; from no. 3985. This bell has three 20mm side holes and a perforated bottom plate with center floor peg. The lowest note is A.

FIGURE 18. Heckelphone muting bell from heckelphone no. 4963. Courtesy of Cornelia Biggers, Tampa.

equipped wtih a muting bell are exceedingly rare; perhaps no more than six have been made, each of which has a standard bell as well.[54]

A unique bell, consisting of a metal tube bent 135° to which the globe is attached, is found on a heckelphone in the Musikinstrumenten-Museum at the University of Leipzig.[55]

Octave key systems. Heckelphones have three octave vents. The first, used for fingered $c\sharp^2$–$e\flat^2$, is a half-hole of the first tonehole, such as those used on the oboe and bassoon as octave vents.[56] Heckel designed a unique half-hole mechanism for English horns, which remains in use on heckelphones today (fig. 12). The half-hole key has two separate tiny vents; the player can expose both (for $c\sharp^3$–g^3) or only one (for $c\sharp^2$–$e\flat^2$). Two more octave vents help the player produce e^2–$g\sharp^2$ and a^2–c^3, using the same fingerings as those for notes an octave lower. All known heckelphones have an automatic octave system, in which a single touchpiece opens one of two vent holes on the upper joint, the selection being made by whether the left ring finger is down (as for $g\sharp^2$ and below, causing the lower vent to open) or up (as for a^2–c^3, causing the second vent to open).[57]

The first automatic octave system for heckelphones was employed from 1904 until about 1963, well into the production of the model 36 voll cons (fig. 19). This system is robust and reliable, relying on a simple rocker mechanism to actuate the two octave vents; it has no adjustment screws. The newer design is more complicated, with five adjustment

54. Heckel may have derived the idea of the muting bell from Charles Triébert's "Nouveau Boehm" oboe of 1855, the lower register of which was similarly made tractable by narrowing the bore and making the toneholes smaller: see Howe, "Boehm Oboe," 32–39.

55. The bell is shown in Joppig, *Oboe and Bassoon*, 114. Unfortunately, we have been unable to obtain more specific information, including serial number, from the museum.

56. On the bassoon the half hole is accomplished manually, by simply opening the hole halfway, to produce the octave notes $f\sharp$, g, and $g\sharp$ from the fingerings for $F\sharp$, G, and $G\sharp$. On the oboe, low $c\sharp^1$ through $e\flat^1$ (which use fingerings analogous to the bassoon's $F\sharp$, G, and $G\sharp$) are similarly overblown. The small size of tonehole 1 on the oboe leads to difficulties with half-holing on simple instruments. These were corrected c. 1830 by Henri Brod, who invented the first half-hole mechanism (Waterhouse, *NLI*, 45–46; Bate, *The Oboe*, 59).

57. This mechanism was invented c. 1850 by the French-English oboist Apollon Marie Rose Barret, and was first applied to the Triébert Système 5 and Barret system oboes. It was soon used also for saxophones, which have two octave vents, also changing at written a^2 (on modern saxophones; the change occured at $a\sharp^2$ on Sax's early models [see Howe, "Invention of the Saxophone," 153]).

screws, allowing the player to correct for compression of the soft heckelphone pads, thus theoretically affording less lost motion and improving technique (fig. 20).[58] It also permits on-the-spot corrections with a screwdriver, whereas failure in the traditional mechanism requires the replacement of tiny corks, which is impractical in a rehearsal or concert situation.

Most modern oboes used outside of Germany use semi-automatic octave systems, in which the two upper vents are chosen independently by the thumb or left index finger, but are interconnected to improve slurs. Modern German oboists typically use an automatic octave key system, which is supplied on demand by all major makers. American oboists often initially dislike the heckelphone's automatic octave keys, finding themselves reaching for a key which does not exist in order to play a^2–c^3. However, since the heckelphone is played perpendicular to the floor, the automatic system, by minimizing lost motion in the left hand, improves efficiency more than on the oboe. For a heckelphone with a semi-automatic system, the fingers of the left hand would be shifted far away from the corresponding touchplates in order to actuate a separate, independent second octave key with the first joint of the left index finger. No heckelphones are known to have a semi-automatic system; no. 50 was built with a second octave-key touchplate for the left index finger, but this was simply a keyed link which depresses the left thumb's touchplate.

Toneholes. Heckelphone toneholes are parallel-sided, bored straight without undercutting; voicing is accomplished after purchase by altering their diameters and chimney shapes. This design choice is odd, as undercutting improves both response and pitch in woodwind instruments by reducing the turbulence that arises at the junction of a sharply-cut tonehole and the bore.[59] For this reason, the toneholes of most late nineteenth- and twentieth-century oboes and bassoons are undercut. Heckelphone no. 3985 has been extensively undercut by Robert Howe in order to adjust the instrument's pitch and tuning; a wonderful side

58. In practice, however, the modern system is a nightmare to keep adjusted, since the adjustment screws must be tightened often to take up the slack created by the bite of the screw on the cork bumpers upon which the screws land. If any one of these screws is not perfectly adjusted, many notes will simply refuse to sound. The notes g^2 and $g\sharp^2$ are especially vulnerable to cracking when the modern design system does not seal perfectly.

59. Arthur Benade, "Woodwinds: The Evolutionary Path Since 1700," *Galpin Society Journal* 47 (1994): 63–110, at pp. 103–05.

FIGURE 19. Automatic octave vent mechanism from heckelphone no. 3985, showing the early form.

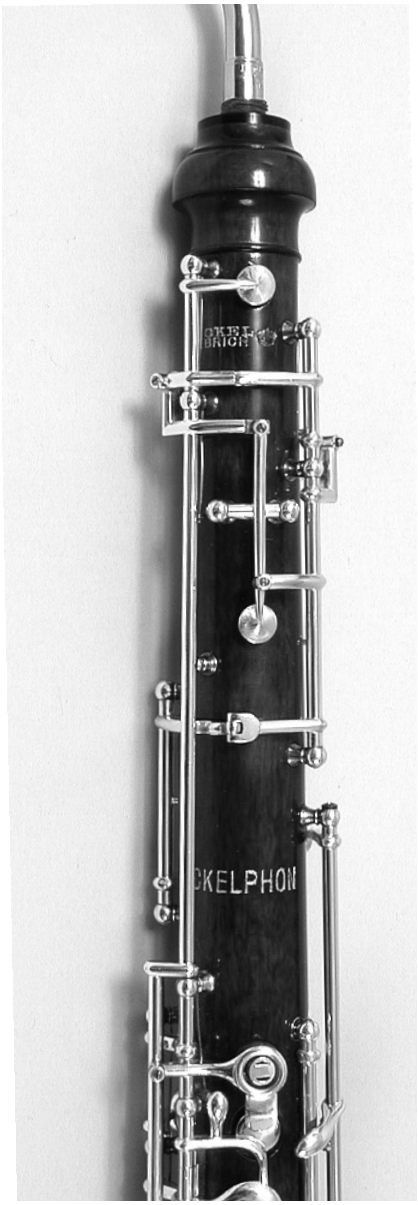


FIGURE 20. Automatic octave vent mechanism from heckelphone no. 4963, showing the modern form. Note also the half-hole mechanism.

effect to this work was to soften the tone of the heckelphone in the lower register and to improve the response.[60]

Many heckelphones, especially those from the 1930s, have cylindrical brass tube liners in some toneholes, rounded at the outer lip of the tonehole, which act as pad seats (fig. 21).[61] Commonly found on the lowest six toneholes and on the side holes for B♭ and C, these provide the pad with a perfectly flat surface against which to seat, even if the wood of the instrument's body changes. Later model 36 cons and 36 voll cons heckelphones may have brass liners only on the bell. The liners are never undercut.

Wall thickness. The internal bore measurements of the upper and lower joints of heckelphones are very consistent,[62] because the Heckel factory uses copies of the original 1904 reamers.[63] But while the bores have remained constant, heckelphones have become thicker in their outside diameters.[64] This may have musical consequences: the thin-wall instruments (those made before 1926) have a greater resonance of tone compared to the later thick-wall models. One wonders, then, why Heckel thickened the heckelphone's walls. While this change may have been intended to diminish the instrument's volume of tone (by lengthening the tonehole chimneys and thus increasing the resistance), or may simply echo the trend towards thicker walls in bassoons made by Heckel, a pertinent observation is that the key-posts in early heckelphones sometimes pierce the bore; thus, thicker walls are a practical matter of manufacturing, it being safer and easier to anchor the posts in thicker material.

Wood and key materials. The heckelphone's body, like that of the Heckel bassoon, is entirely of maple. Grenadilla, the wood of choice for oboes, is denser than maple and would make for an impractically heavy

60. Felix Kraus, recently retired after forty-one years as oboe and English horn player of the Cleveland Orchestra, considered no. 3985 to be "the best-sounding heckelphone I ever sat next to" (conversation with Robert Howe, April 2000).

61. Similarly, mechanized woodwinds made of boxwood, rosewood, and violetwood often have extensive tone-hole inserts made of a more rigid material, to preserve hole dimensions and permit accurate pad seating as the wood changes.

62. Measurements by Thomas Hiniker, privately communicated to Peter Hurd, 2003.

63. Edith Reiter, personal communication to Peter Hurd, July 2003.

64. Measurements taken by the authors on heckelphones nos. 50, 3628, 3916, 3951, 3985, 4244, and 4963 (1911–1957) show an average increase in the wood's thickness at the top joint of 1.0 mm, at the bottom and bell joints of 1.6 mm.

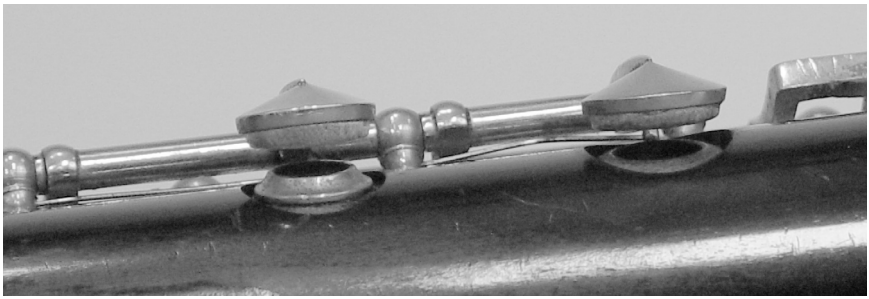


FIGURE 21. Toneholes from heckelphone no. 3985: left, for C, with liner; right, for B♭, without liner.

instrument. The large diameter of the heckelphone provides another reason for not using the more expensive tropical hardwood.

The earliest heckelphones (nos. 3 to 38) have a jet-black stain. By no. 50 (1911) a light reddish-brown stain was employed, with the grain of the wood showing through slightly. This finish was also used on the 3000 series of instruments until the early 1930s. At about no. 4000 the finish became a solid dark brown stain with French polish overlaid, so that the grain of the wood does not show. By 1963 the finish had changed to a brilliant darkish cherry red with clear lacquer overlaid; again, little or no wood grain is visible. The keywork of heckelphones was nickel silver, silver plate, or sterling silver until 1963; since then, the keys are lacquered sterling silver.

Reed and bocal styles. The 1905 prospectus shows a heckelphone reed at "natural size" (fig. 4); it is 14.8 mm across the tip and has an overall length of 58.5 mm. The portion of the cane extending past the wrapping, which determines the size of the interior chamber of the reed, is 28.9 mm long. In shape it is consistent with a then-contemporary German oboe reed, being less flared than a modern-day bassoon reed and similar to the heckelphone reeds supplied by the manufacturer today.

The modern heckelphone reed has a tip width of 12.5 mm and length of 56 mm (fig. 22). The free cane is 35 mm long. Allowing for imprecision in printing and measurement, this hardly varies from the reed illustrated in 1905, except that the cane extending past the wrapping in that illustration was half, rather than five-eighths, the length of the reed.

FIGURE 22. Left to right: reeds for bassoon, heckelphone (standard form), heckelphone (on brass staple), bass oboe and oboe.

Catering to oboists, who make their reeds on brass tubes known as staples, Heckel has made two styles of brass staples for heckelphone reeds, both now discontinued.[65] Instead, the reed is now formed on a mandrel like a bassoon reed. Some players use a metal baroque oboe staple to make heckelphone reeds with dimensions and a scrape similar to an English horn reed. A well-defined spine, long lay, and short tip are commonly found in such reeds. Another variation is to shape the heckel-

65. Dimensions of the old style are 24.5 mm length, 0.32 mm wall thickness, 6.1 mm internal diameter at the bocal end, and 3.05 mm x 4.12 mm at the reed end (the small end is flattened, as is usual for English horn and oboe d'amore staples). The new style is perfectly conical, measuring 22.8 mm length, 0.29 mm wall thickness, 6.5 mm at the bocal end, and 4.71 mm at the reed end.

phone reed like a spade, with parallel sides from the tip to the back for 10–12 mm. This diversity in reed style is noted as early as the c. 1906 catalog.

The design of the heckelphone bocal changed only slightly from 1904 until about 1998. Comparison of a dozen historical and recent specimens[66] shows that the curve varies randomly, albeit within a small range, as may be expected of a hand-crafted accessory (fig. 23). The original bocals had a wall thickness (at the reed end) of approximately 0.48 mm; more recent bocals have a wall thickness of 0.31 mm. A special reamer was manufactured from 1904 until about the mid-1980s for fitting reeds to the bore of the original-design bocal. A standard Heckel contrabassoon reamer is used to fit reeds onto the new thin-wall bocal. Many players, including the authors, find that the new bocals are more responsive and thus allow greater dynamic and musical flexibility.[67]

Longevity. Unlike oboes, which have a limited professional lifespan, old heckelphones continue to be used very successfully; indeed, of the six most-used examples in the United States, four date from before 1930. Perhaps the wide bore minimizes vibrational wear on the wood; that most heckelphones are little used surely also contributes to their longevity. This is fortunate, as many players find that instruments made before World War II possess playing qualities that make them preferable to newer examples. Used heckelphones therefore command a high price, even though the number of potential buyers is severely limited.

66. Conducted by Robert Howe at the 2003 and 2004 meetings of the North American Heckelphone Players' Association, New York.

67. Peter Hurd, "Heckelphones on High," *The Double Reed* 26/2 (2003): 29–35. A new heckelphone bocal was developed in 2000 by Thomas Hiniker. It has a double curve resembling a bass clarinet neck or a bass oboe bocal, with a sideways bend at the reed end to allow the heckelphone to be held to the side like a saxophone if desired. Playing the instrument to the side improves the position of the right hand, and allows the use of a chair rather than a special high stool. The reed end of the Hiniker bocal is smaller than that of the Heckel bocal. Hiniker uses a reed with a long metal staple resembling a huge English horn reed, 11.5 mm wide at the tip. This bocal/reed combination increases the resistance of the instrument and makes the heckelphone more tiring to play; it also produces a more "focused" sound for some players, permitting greater projection and resonance at softer dynamic levels. The authors differ on whether the Hiniker bocal represents an improvement (Hurd) or an overly-loud capitulation to modern fashions of oboe-playing (Howe). As if to show that there is nothing new under the sun, heckelphone no. 4141 has three bocals similar to Hiniker's, all stamped "Heckel" and believed to be original to the instrument.

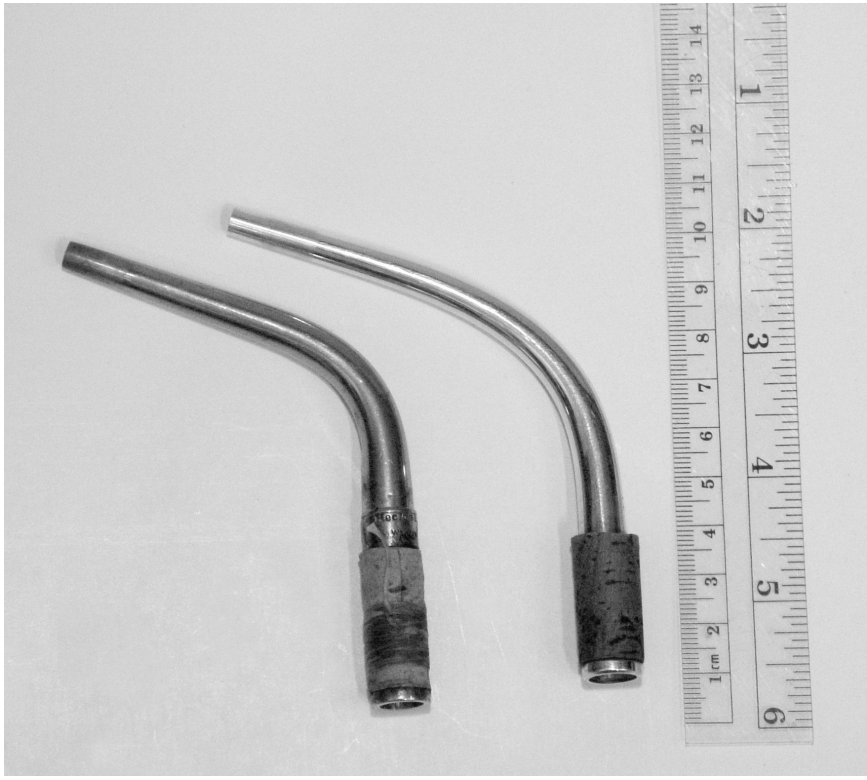


FIGURE 23. Heckelphone bocals associated with (left to right) heckelphone no. 3985 (1926) and newly-made in 2002.

The fact that early heckelphones were often built with mechanisms unfamiliar to today's oboists has led to the retrofitting of several instruments. Examples known to us include nos. 25, 50, 3951, and 4141 (converted to model 36k) and no. 4773 (changed from a model 36k with split-ring keys to a plateau instrument). Several German-system heckelphones used in America have been reengineered to change the configurations of the little-finger key clusters to Conservatory style. Additionally, F♯–G♯ articulations have been fitted to some 36i, 36k, and 36 cons instruments, and the low B–C♯ articulation has been added to early 36 voll cons heckelphones. Heckelphone players, conservators, and collectors (including the authors) disagree as to the merits and validity of these alterations.

Playing the heckelphone. The heckelphone is neither a large oboe nor a small bassoon, and requires a unique approach to play well. Despite Heckel's assertions that it could be immediately played by any oboist or bassoonist, the heckelphone has a very different feel and aural complexion from either of these instruments. The heckelphone's enormous bore requires that the player use a reed with relatively little resistance, yet a forceful airstream is needed to excite the large volume of air to vibrate in the tenor and alto registers. This can make the low register very loud and brusque; in the hands of an inexperienced player, the heckelphone can overpower an ensemble. A major challenge for the player thus is to derive a reed that has the proper balance between resistance and control.

Just holding the instrument can be another challenge; when seated in a standard orchestra chair, musicians of normal physique find that the heckelphone reed enters their mouths at an uncomfortably flat angle, which encourages a loud sound and makes articulation difficult (fig. 24). It is thus better to sit on a slightly-raised stool so that the heckelphone can be held vertically, allowing the reed to enter the player's mouth at a 40–50° angle. Because the bell rests on a peg on the floor, the player's mobility is limited. In a live hall, or when working in a small ensemble, it can be useful to place a square of thick cloth on the floor under the bell to dampen the sound.

We cannot overemphasize the need for patient, time-consuming practice. Any oboist can play tunes on the heckelphone in a moment, but we have heard excellent oboe and bassoon players, given access to a heckelphone, encounter serious technical and artistic difficulties as the result of taking too little time to learn the instrument before performing in public or making a recording. Andrew Shreeves, who as heckelphonist at the Metropolitan Opera can reasonably be considered the leading player in the United States, has aptly noted that "All that can pass for orthodoxy in the Heckelphone world are the high standards we bring from our major instruments. Indeed, every heckelphonist has to invent a way of playing, necessarily incorporating whatever woodwind resources lay at his or her command."[68]

68. Andrew Shreeves, "A Plain and Easy Introduction to Playing the Heckelphone Redux," *The Double Reed* 27/4 (2004): 55–58. Of heckelphonists known to us, about 60% are primarily oboe players, the rest mostly bassoonists; at least one began life as a tenor saxophonist, which is actually not a bad background to have, as the two instruments feel very similar to the player.

FIGURE 24. Heckelphone player, showing the awkwardness of an instrument that is too tall for a standard orchestra chair; this is a model 36i heckelphone. From Arthur Edward Johnstone, *Instruments of the Modern Symphony Orchestra* (New York: Carl Fischer, 1917; 2nd edition, 1928), 19.

Small heckelphones. In keeping with the notion of a family of instruments, Heckel designed not only the standard (bass) heckelphone in C but also two smaller varieties (fig. 25). Pitched respectively a minor third (the *Terz-heckelphon* in E♭) and a perfect fourth (the piccolo heckelphone in F) above the oboe, these were intended to function analogously to the E♭ clarinet. The piccolo heckelphone was made in two models, 36m and 36o, which differed only in the arrangement of the keys for the right little finger (German-style for the 36m and French-style for the 36o). Analogous models of terz-heckelphones were the 36s and 36t. While the latter instruments, like the heckelphone proper, separate in the middle, the bodies of all finished F piccolos are one-piece, made of black plastic with maple bells.[69]

Small heckelphones are not mentioned in the 1905 prospectus. The two models pitched in F appear in the c. 1906, c. 1926, and 1931 catalogs; the c. 1919 advertisement mentions only the terz-heckelphone, but in the c. 1926 catalog models 36s and 36t are both described, and model 36s is illustrated (fig. 10).

Fourteen small heckelphones have been completed, three of which are Eb terz-heckelphones and the rest piccolos in F. The Heckel factory museum holds a pair of finished F piccolos (serial numbers 11 and 12) and eight others (nos. 6–8, 15–17, 4308, 4874, and 4876) were sold. No. 4308 is in the collection of Ernest Rombaugh (Utrecht), and one is in the Musikinstrumenten-Museum at the University of Leipzig (inventory no. 1354); the locations of the others are unknown. Five maple piccolo heckelphone bodies that were never fitted with keys, evidently made for experimental purposes, remain at the Heckel factory to this day.

Heckel also holds two E♭ terz-heckelphones, one unmarked and one marked "151"; this is probably not intended as a serial number, as it does not fit in with the other sequences of heckelphone serial numbers. The single E♭ terz-heckelphone listed in the Heckel archives as having being sold (no. 3519, made in 1915) has been lost.

The playing qualities of the piccolo heckelphone are described in a recent letter:

> Regarding the piccolo heckelphone: it . . . plays much more in tune than I would have expected and has a tone which greatly resembles that of the heckelphone in its richness and depth, even in the extreme high register.

69. Samuel Andreyev, private communication to Robert Howe, February 22, 1905; Finkelman, "Centenary Salute," 47.

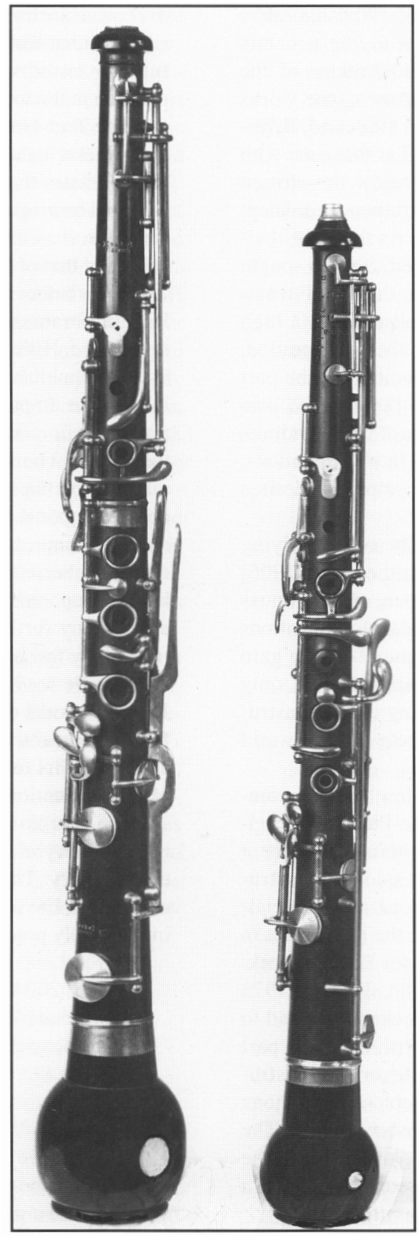


FIGURE 25. Piccolo heckelphones: left, E♭ *Terz-heckelphon*, no. 151, model 36s; right, F piccolo heckelphone no. 12, model 36m. Courtesy of Edith Reiter, Wilhelm Heckel GmbH.

> The only real flaw in the design is that the lowest two semitones are quite sharp. Otherwise, these instruments appear to be very well conceived and built and have a marvelous sound. . . .[70]

Neither the piccolo nor the terz-heckelphone appears in any score contemporaneous with their invention. Richard Strauss used a piccolo heckelphone as an ersatz trumpet in performances of Bach's second Brandenburg concerto. Certain high-lying oboe operatic solos were suggested as repertoire, but there is no evidence that the instrument was ever used in this fashion.

The heckelphone-clarinet. This instrument, which is neither a heckelphone (as it has a single reed) nor a clarinet (as it is conically bored) is noted in the Heckel catalogs of 1931 and c. 1935 (fig. 26). A photograph of a military musician holding a heckelphone-clarinet is included in Heckel's recent (1998) prospectus for new heckelphones. The 1931 catalog notes that

> The following Heckelphon-Clarinet is a Wood-Wind Instrument with a pronounced conical bore and a Beak-Mouthpiece. The Bell is hollow and spherical. – The tone-colour recalls that of the Heckelphon, the clarinet-like tone of the Instrument is excellent, extraordinarily harmonious, and powerful; nor is it sharp or metallic [in sound] like that of the Alto-Saxophone. . . . Nr 18z Heckelphon-Clarinet in B♭, entirely in wood, of magnificent tone; fingering similar to that of the Clarinet. – Not to be confused with the Heckelphon.[71]

According to the Heckel firm, twelve to fifteen heckelphone-clarinets have been built. The instrument is described in their 1998 prospectus as having "just a very slight cone and therefore a much weaker tone compared to the tarogato or the soprano saxophone."

The Conn-O-Sax. Imitation being the sincerest form of flattery, it is not surprising that the American maker C. G. Conn created a heckelphone-like saxophone, the Conn-O-Sax, in 1929 (fig. 27). Pitched in F, with a

70. Samuel Andreyev, personal communication to Robert Howe, February 16, 2005, referring to the instrument owned by Ernest Rombaugh, a well-known Dutch oboist. Mr. Andreyev claims to know of three terz-heckelphones in European collections, but has not seen these putative specimens, which do not appear in the Heckel archives.

71. Heckel, *Centennial Catalogue*, 24 (original text in English).

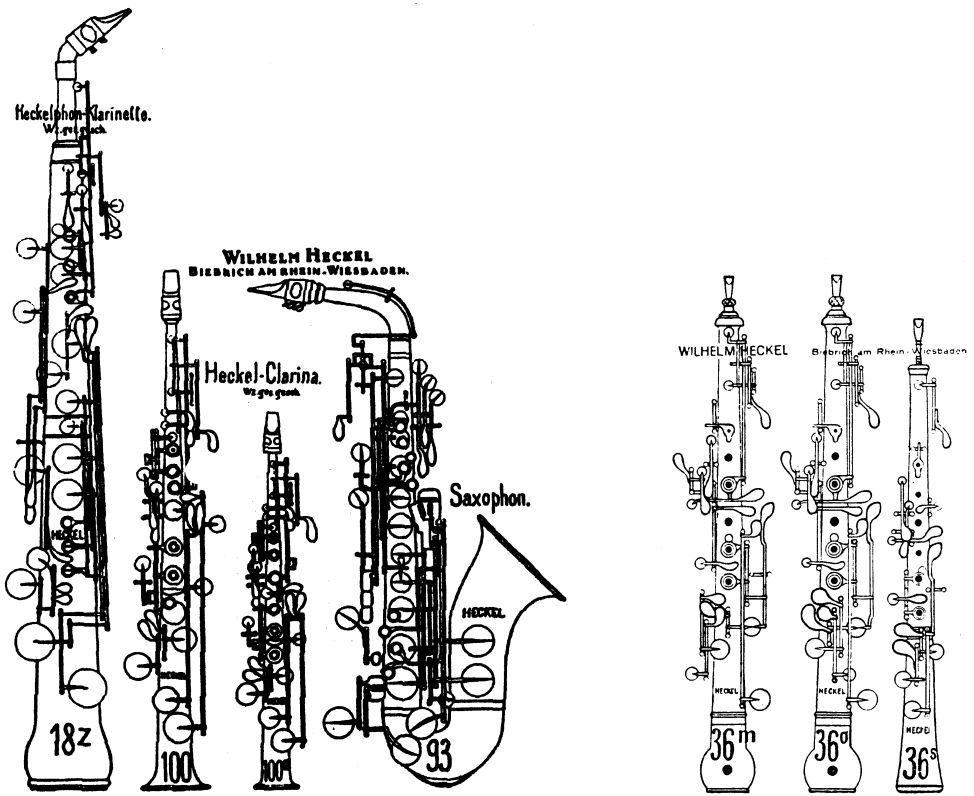


FIGURE 26. Illustrations of miscellaneous woodwinds from Heckel catalog of 1931: left, *Heckelphon-Klarinette*, *Heckel-Clarina*s in B♭ and E♭, and *Heckel-Saxophon* (alto saxophone) in E♭; right, piccolo heckelphones in F and *Heckel-Musette* in F.

FIGURE 27. Conn-O-Sax advertisement, from Conn's *Musical Truth*, July 1929. Courtesy of Dr. Paul Cohen.

range from written a to g^3 (sounding d to c^3), it has a curved neck but a straight body and bell. Although its bore and tonehole dimensions are virtually the same as those of Conn's F mezzo-soprano saxophone,[72] the Conn-O-Sax has a darker and warmer tone, more closely akin to the deep oboes than to a soprano or alto saxophone. Both instruments are very rare, with perhaps two dozen Conn-O-Saxes and about a hundred mezzo-soprano saxophones known to exist.[73] Its introduction in the fall of 1929, with the first instruments shipped two days after the American stock market crashed, assured that the Conn-O-Sax was stillborn.

Musical Uses of the Heckelphone

Early compositions. Initial reaction to the heckelphone was very encouraging. Richard Strauss, who had also experimented with oboe d'amore and saxophones, was the most fervent advocate of the new instrument, using it not only in *Salome* (1905) and *Elektra* (1909),[74] but also the 1913 *Festliches Präludium*, the ballet *Josephslegende* (1914), and *Eine Alpensinfonie* of 1915. Other composers soon followed suit: Max von Schillings used it in his operas *Moloch* (1906) and *Mona Lisa* (1915), and it was included in two symphonic works written in 1909, Felix Weingartner's *Third Symphony* and the *Symphonic Epilogue to a Tragedy* of Ernst Böhe. Others who created parts for heckelphone during the first two decades of its existence included Friedrich Klose in his oratorio *The Spirit of the Sun* (premiered in Basel in 1918), Eduard Erdmann in both *Rondo for Orchestra*

72. This is actually an F alto saxophone, to which Conn chose to give the designation "mezzo-soprano" as an advertising gesture. Conn-O-Sax measurements were graciously provided by Paul Cohen and Nick Ryan; mezzo-soprano saxophone measurements are by Robert Howe. The conicity of Dr. Cohen's Conn-O-Sax is 5.03% (less than that of saxophones, but greater than the heckelphone's), the tonehole to bore diameter ratios are 0.50–0.67 (typical of oboes, less than the heckelphone's).

73. For more information on the Conn-O-Sax, see Peter Hurd, "Heckelphones on High," *The Double Reed* 26/2 (2003): 29–35, at pp. 29–30; and Paul Cohen, "Vintage Saxophones Revisited: The Conn-O-Sax," *Saxophone Journal* 12/4 (1988): 22-29. The estimated number of extant mezzo-soprano saxophones comes from a conversation between Paul Cohen and Robert Howe in September 2003.

74. For the premieres of both these operas the heckelphone part was played by the bassoonist Emil Sehnert (1871–1940), using heckelphone no. 10, which remains in service at the Dresden Staatskapelle: see Klapproth, "Hundert Jahre Heckelphon," 54, together with the subsequent correction ibid., 113, n. 2, of his original statement that the player for *Salome* was the oboist Christian Ritter Schmidt (1865–1915).

(1918) and *First Symphony for Large Orchestra* (Weimar, 1920), and Kurt Magnus Atterberg in his *Sinfonia Funebre* (Stockholm, 1922).[75]

In America, use of the heckelphone in art music is difficult to document. The Metropolitan Opera in New York was one of the first institutions to purchase a heckelphone, in 1906; the instrument is still used today. No other American opera house or orchestra can be proven to have had a heckelphone before World War II. Leopold Stokowski's Philadelphia Orchestra listed "Heckelphon" or "Heckelphone" as a doubling instrument for oboists on concert programs during the period 1916–26, even though one writer believes that "the orchestra owned no such instrument; all of the heckelphone parts were played on the bass oboe."[76] Edgar Varèse wrote for heckelphone in his *Amériques* and *Arcana*, which premiered in Philadelphia in 1926 and 1927, respectively;[77] however, the parts were likely played on bass oboe.[78]

The instrument had more success in lighter repertoire, achieving something of a minor mystique. Paul Whiteman's band included a heckelphone, played by the noted multi-instrumentalist Russ Gorman in such tunes as the *Indian Love Call*, in Ferde Grofé's *Metropolis,* and in Grofé's small-ensemble arrangement of George Gershwin's *Concerto in F.*[79] Albert

75. These early works are listed and discussed in Klapproth, "Hundert Jahre Heckelphon," 61–63. The Belgian Raymond Moulaert's 1907 *Andante, Fugue et Final* for oboe, oboe d'amore, English horn, and heckelphone is often held up as an example of early heckelphone chamber music. This seems odd, as a Belgian would seem more likely to encounter the bass oboe than the heckelphone. Michael Finkelman, in a paper now in press for *The Double Reed*, has solved this puzzle by demonstrating that Moulaert wrote in 1907 for saxophone quartet, rescoring the work in 1942 for double reed instruments.

76. Michael Finkelman, "Philadelphia Story," *The Double Reed* 24/3 (2001): 48, 50, 51, 62. Second oboist Edward Raho is listed as heckelphone soloist in "Il Sogno" by Bartaletto, performed at a children's concert on February 1, 1922. Finkelman notes that this event "featured each member of the oboe section in solos, variously for oboe, for oboe d'amore, for English horn and for bass oboe (dubbed 'Heckelphone' in the program, though as we have noted previously, the orchestra owned no such instrument, and had already several years before begun misdenominating the bass oboe in this fashion)."

77. Klapproth, "Hundert Jahre Heckelphon," 65.

78. At the time, the orchestra owned a Lorée bass oboe, serial no. GG06, made c. 1920 (personal communication from the Philadelphia Orchestra's instrument manager to Robert Howe, March 2005), and Varèse's heckelphone parts do not extend below B♮ (Harry Searing, e-mail to Robert Howe, February 19, 2005).

79. Gorman is famous for inspiring the opening clarinet glissando in George Gershwin's *Rhapsody in Blue*. His stage kit included E♭ and B♭ soprano saxophones, alto saxophone, oboe, heckelphone, E♭ and B♭ soprano clarinets, alto and bass clarinets,

Austin Harding used heckelphone in his bands at the University of Illinois from 1925 to 1948, and it was also used in the Yale University Band.[80] Even today, the American Wind Symphony uses a heckelphone in a section with two oboes and English horn; director Robert Boudreau notes that the heckelphone works better outdoors than does a bass oboe.[81]

The heckelphone's greatest American use, however, was in Hollywood. Bassoonist Don Christlieb, who was very active as a film musician after 1925, told of using the heckelphone extensively in movie scores, including several Academy-Award winning films.[82] Two instruments were used in Hollywood by film musicians, nos. 33 (1907) and 4244 (1934).

Obstacles to acceptance. Twenty years after its invention, the heckelphone seemed well on its way to becoming a standard member of symphony orchestras. However, the instrument ultimately failed to achieve lasting popularity after its initial use in the works of Strauss and his circle. Perhaps the most important reason for this is that the heckelphone is difficult to play well, and given the limited repertoire, few oboe and bassoon players were (or are) willing to make the necessary investments of time and effort to play it.

Notwithstanding Philip Bate's observation that "The heckelphone . . . is probably unique in that, right from its introduction, it has been

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and octavin. See George Gershwin, *Rhapsody in Blue: Commemorative Facsimile Edition* (Secaucus, NJ: Warner Brothers Publications, 1987), 8. Gorman is shown with a heckelphone in a 1922 photograph of the Whiteman band: see Don Rayno, *Paul Whiteman: Pioneer in American Music. Volume 1: 1890–1930* (Lanham, Md.: Scarecrow Press, 2003), pl. 17; reprinted in Finkelman, "Centenary Salute," 42. The instrument has a range to low A and a single vent hole in the bell. We believe it is heckelphone no. 3283. Klapproth cites information from Gunther Schuller identifying Charles Strickfadden as Whiteman's heckelphonist ("Hundert Jahre Heckelphon," 66); most likely both men, being capable multi-instrumentalists, handled this instrument.

80. Finkelman, "Centennary Salute," 43–44 (Illinois); private communication from Don Christlieb to Robert Howe, c. 1984, confirmed in conversation with Susan Thompson, 2003 (Yale).

81. Robert Boudreau, conversation with Robert Howe, March 3, 1905. In a band, the lower register of the heckelphone is not unduly prominent, as it may be in the orchestra. Robert Howe's experience playing heckelphone in a thirty-piece gazebo band shows that the heckelphone fills the tenor/baritone range well, with more volume than the bassoon and more color than the tenor saxophone.

82. Letters to Robert Howe, c. 1986. The Oscar winners included Otto Preminger's 1946 *Laura* (music by David Raksin), *Spartacus* (1960, mentioned above), and *The Manchurian Candidate* (1962, music by David Amram).

employed by influential composers without having to struggle for recognition or to compete with rival instruments,"[83] another great difficulty it encountered was competition from other instruments; additional adverse factors included provincialism and changing musical tastes.

At the turn of the twentieth century a host of conically-bored woodwinds vied for the attention of composers and players. The Heckel firm itself produced not only the heckelphone but also the Heckel-clarina, heckelphone-clarinet, and Heckel-musette, in addition to the two smaller sizes of heckelphone (fig. 26). Saxophones and sarrusophones vied with each other for popularity in western Europe, where the Boehm oboe remained popular in military bands[84] and where the Mahillon firm in Brussels had reinvented the oboe d'amore more than twenty years earlier. The modern tarogato was invented in Hungary and rothophones were introduced in Italy.

The most serious competitor of the heckelphone, however, was the instrument it was meant to replace, the bass oboe, which had been introduced by Lorée fully a decade and a half before Heckel made his first heckelphone. Each of these instruments at first achieved only a geographically limited popularity, with the bass oboe found more often in France and the heckelphone in Germany. This trend is reflected in orchestration textbooks of the period, which tend to echo the preferences of their countries of origin. Richard Strauss's 1904 revision of Hector Berlioz's treatise briefly mentions both instruments in adjacent sentences,[85] but more typical is a German publication of 1927 that ignores the bass oboe while including an important chapter on the heckelphone by Emil Sehnert, an early player of the instrument.[86] In contrast, a 1933

83. Bate, *The Oboe*, 104.

84. Howe, "Boehm Oboe," 35–46.

85. "The baritone oboe, constructed by F. Lorée in Paris, is a new accession to the orchestra. It has recently found a rival in Wilhelm Heckel's Heckelphon." Hector Berlioz and Richard Strauss, *Treatise on Instrumentation*, translated by Theodore Front (New York: Kalmus, 1948; reprint New York: Dover, 1991), 188.

86. Emil Teuchert and E. W. Haupt, *Musik-Instrumentenkunde in Wort und Bild* (Leipzig, 1911; 2nd ed., Leipzig: Breitkopf & Härtel, 1927), 2:69–76. (Sehnert had played heckelphone in the premieres of Strauss's operas *Salome* and *Elektra*: see n. 74 above.) Egon Wellesz, *Die neue Instrumentation* (Berlin: M. Hesse, 1928), 67–68, discusses both instruments in two paragraphs entitled "Die Baßoboe," but this is unusual. As late as 1988 the German writer Gunther Joppig, in his thorough history of the oboe and bassoon, devotes five pages to the heckelphone but only three sentences to the modern bass oboe (Joppig, *Oboe and Bassoon*, 108–15).

French orchestration textbook takes some interest in the bass oboe, but does not even mention the heckelphone.[87]

English writers of the same period tended to take an evenhanded approach but did not always get their facts straight, often treating the instruments as if they were identical. Cecil Forsyth, writing in 1914, stated that "The Heckelphon owes its existence to Heckel, the well-known instrument maker of Biberich [sic]. It is practically what the French call an '*Hautbois baryton.*' "[88] The 1927 edition of *Grove's Dictionary* likewise described the heckelphone under its entry for oboe:

> (4) Baritone Oboe, Basset Oboe (Ger. *Heckelphon*), is a development of the tenor pommer. Various efforts have been made from time to time to establish a bass oboe, an instrument, that is, an octave lower than the ordinary oboe and with a similar compass. Such an one was exhibited at the Paris Exhibition in 1889. The 'Heckelphon' is a German instrument of this type made by Heckel, and was used in Strauss in 'Salome'.[89]

Later texts published in England or the United States equate the two instruments or ignore them, only rarely recognizing or discussing them as separate entities; a notable exception is Adam Carse, who, writing in 1939, discussed both instruments thoroughly and dispassionately, favoring neither but lamenting the difficulties they faced in gaining widespread acceptance.[90]

In England, during the first two decades of the twentieth century, both instruments were rare but available. Gustav Holst clearly specified

87. Ernest Guiraud, *Traité pratique d'Instrumentation*, 2nd ed., edited by Henri Busser (Paris: Durand, 1933), 52. Guiraud (1837–1892) was professor of composition at the Paris Conservatoire, a position in which his pupil Busser (1872–1973) eventually succeeded him. The original edition of this treatise was published just before Guiraud's death in 1892, at which time Lorée's newly introduced bass oboe would have been important and novel. Busser's failure to mention the heckelphone in his edition of his mentor's book suggests that the heckelphone had made little headway in France. (We thank Thomas G. MacCracken for his help in deriving this conclusion.)

88. Cecil Forsyth, *Orchestration* (London: Macmillan, 1914; reprint of 2nd ed. [1935], New York: Dover, 1982), 228.

89. *Grove's Dictionary of Music and Musicians*, 3rd ed. (New York: The MacMillan Company, 1927), 3:676–67, unsigned article s.v. "Oboe."

90. Carse, *Musical Wind Instruments*, 145–47. Carse succinctly describes bass oboes by Denner (c. 1700), Bizey, Riedlocker (c. 1775), Triébert, and Lorée, and gives the heckelphone a full description, even mentioning the F piccolo heckelphone and E♭ terz-heckelphone.

bass oboe in *The Planets*, while the score of Arnold Bax's *Symphony No. 1* calls for either heckelphone or bass oboe.[91]

The heckelphone's rarity has often led to confusion among conductors and players (though rarely among composers) as to what it actually is and how it differs from the French-style bass oboe (fig. 28).[92] Most orchestral musicians have never seen or played either one, and are therefore unaware of their characteristics and differences; to a certain extent this is understandable, as the two instruments do indeed have a number of similarities.[93] Both are pitched an octave below the regular oboe and are used as the bass of the oboe section, with their parts appearing directly underneath the English horn in the score, normally notated in treble clef and sounding an octave lower than written.[94] Both require specialist players.

In addition to the common characteristics already mentioned, both instruments are rare and expensive (the heckelphone more so than the bass oboe), and both have such limited repertoire that only seldom will an ensemble or individual musician posesses either one, much less both. To the best of our knowledge, out of some twenty-five heckelphones currently located in the United States only about a dozen see regular use.

91. As Klapproth has remarked ("Hundert Jahre Heckelphon," 65), available evidence suggests that in this milieu the tonal differences between the two instruments were not considered to be very important. He alludes to a comment by the eminent British oboist Leon Goosens (1897–1988), who observed, not quite correctly, that "There is very little distinction between the sounds of the bass oboe and the heckelphone. Parts written for an oboe in this range can be played on either instrument with equal quality" (Leon Goosens, *Oboe* [New York: Schirmer Books, 1977], 26–27). This attitude emphasizes the pragmatism of an experienced orchestral musician.

92. Robert Howe has found that music he has played—for heckelphone by Hindemith and Strauss, and for bass oboe by Delius and Holst—suits the specified instrument well, showing that composers can take the trouble to learn their different characters and to write accordingly. Peter Hurd reports ("Renaissance for Heckelphone," *The Double Reed* 24/1 [2001], 86) a pertinent anecdote told by the bassoonist Frederick Dutton, who once "played the heckelphone part to Aaron Copland's Short Symphony under the direction of the composer. During a break in the rehearsal, Fred approached Mr. Copland and asked, 'Why did you score for Heckelphone?' The maestro replied (without missing a beat), 'Because that is what I wanted!' "

93. See Howe, "Oboes Built an Octave Lower," for a more extended discussion of this topic.

94. An exception is Delius, who wrote for the bass oboe at pitch in the bass clef; when his parts move into the treble clef, the player must finger an octave higher than the written pitches.

FIGURE 28. Lorée bass oboe HW13 (1986), left, and heckelphone no. 3985 (1926), right, showing the physical differences between the two instruments. Collection of Robert Howe.

Because a bass oboe costs roughly one third as much as a heckelphone and is much easier for an oboist to learn to play, such instruments are more common; we are aware of about thirty in use in this country and suspect there may be twice that many, although this is a relatively recent development.[95] Yet the continuing presence of a handful of works in the active repertoire—notably by Strauss and Varèse for the heckelphone, Delius and Holst for the bass oboe—keeps these instruments in use by our symphony and opera orchestras. Since few organizations or players have the luxury of choice between them, it is a common practice to use whichever one is available in a given community of musicians, often leading to their interchange.

Such an approach is practical and pragmatic, but often musically unsatisfactory; even Heckel warned against doing so, noting that "Owing to the Heckelphon having a tone peculiar to itself, the Baryton-Oboe cannot be substituted to give the same effect."[96] Indeed, depending on the context, other instruments such as the tenor saxophone or bassoon can make more convincing heckelphone substitutes than the bass oboe, which often does not have the projection required to cover heckelphone parts. The rambunctious music written for the latter by Varèse and Strauss, and Hindemith's magnificent 1928 trio for viola, heckelphone, and piano, op. 47, lack life when played on the more softly-voiced bass oboe.[97] A further difficulty in attempting to play heckelphone parts on bass oboe is one of range: since the latter's lowest note is normally B (rarely B♭), it cannot correctly render any passages that use the low A and B♭ routinely available on the former.

Conversely, the heckelphone's tone, while not necessarily loud, has such presence in the orchestra that it can overburden a bass oboe part.[98] Works such as Delius's *Mass of Life* and Holst's remarkable part in *The*

95. As Robert Howe has noted ("Oboes Built an Octave Lower," 72 and n. 13), "As recently as 1977, the Cleveland Orchestra could not find a bass oboe to use for performances of *The Planets*. The late Harvey McGuire, then the orchestra's English horn player, told me that neither of the *two* bass oboes he knew of in the United States [at that time] were available for the 1977 concerts. Similarly, the St. Louis Symphony recorded *The Planets* in [1974] without a bass oboe. This unfortunate practice is widely followed, as the bass oboe solos are cued in other parts."

96. Heckel catalog c. 1926, 16 (in English).

97. Robert Howe has played these works on both instruments; his opinions here are supported by Peter Hurd. Hindemith specified tenor saxophone as a substitute for the heckelphone in his trio if the latter instrument was unavailable.

98. Philip Bate noted in 1956 that "The bass oboe . . . is often replaced nowadays by the heckelphone, not always to the advantage of tonal balance" (*The Oboe*, 105).

Planets are very idiomatically written for for bass oboe. Holst, for example, repeatedly begins solos on the lowest B, a note which speaks well on the bass oboe but is difficult to produce at the requested pianissimo dynamic on the heckelphone.

Even as the heckelphone and bass oboe each reached relative musical perfection, however, changing tastes led to the marginalization of both instruments. On account of its voluminous and voluptuous sound the heckelphone is most suited to the palette of the late Romantic orchestra; it was invented at a time when instrumental groups had achieved maximum sizes throughout the orchestra. The heckelphone was thus first used in massive orchestrations, such as are found in the works by Richard Strauss and Max von Schillings mentioned above. After World War I, musical taste rebelled against the excesses of Strauss, early Stravinsky, and Mahler; smaller orchestral forces became the norm, and these had no room for the heckelphone and its large sound. Thus, despite its popularity in the first decades of the twentieth century, the heckelphone appears in no works by composers of the Second Viennese School, and only rarely in other contexts after about 1930; it had effectively dropped out of musical sight by World War II. Gunther Joppig, who has helped to fuel the current (and very modest) heckelphone revival, wrote that when he arrived at the rehearsal for *Salome's Dance* at the Bremen Philharmonic State Orchestra in 1965, even older orchestra musicians could not recollect having heard or seen the instrument before.[99]

The Heckelphone Today

Beginning about 1980, the heckelphone has enjoyed a renaissance in composition, orchestral performance, chamber music, musicals, and in the film industry. It is now usual for European conductors to request that orchestral heckelphone parts be played on the correct instrument rather than substituting a bass oboe, bassoon, bass clarinet, or tenor saxophone. However, in America there is no standard approach to music calling for heckelphone. For example, an informal survey by Robert Howe of ten American orchestras and opera companies that programmed works calling for heckelphone during the 2002–03 season

99. Joppig, "Achtzig Jahre Heckelphon," 23.

showed that three performances were played on heckelphone and two on bass oboe; in the remaining five, the part was ignored.[100]

In the United States and Europe, composers are again writing for heckelphone.[101] Hans Werner Henze has replaced Strauss as the champion of the heckelphone, calling for it in an impressive list of pieces beginning in 1968.[102] Eric Ewazen, a professor at the Juilliard School of Music, has written *Quintet for Heckelphone and Strings*, Paul Winter included heckelphone in *Prayer for the Wild Things*, Dorothy Pappadakis has scored for heckelphone in three of her major works, and Henri Wolking has composed *Concertino for Heckelphone and String Orchestra*. The Boston Symphony Orchestra recently commissioned *The Light at the End* for large orchestra (2003) by Sofia Gubaidulina, which included a part for heckelphone; unfortunately, however, this was played on bass oboe, as is the normal practice for all heckelphone music in that orchestra.[103] Apart from the orchestral works mentioned above, most new writing for the heckelphone is in the context of small chamber ensembles and was presumably created with a particular player in mind.

Heckelphone Production History

The original intent of the present paper was to gather and study heckelphone production data. Edith Reiter, proprietor of Wilhelm Heckel GmbH, has generously spent many hours extracting data from company logs, providing a solid foundation for the list given in the appendix to this article.[104] Further details have been obtained from the owners of extant specimens. Taken together, these data clear up many earlier misconceptions and erroneous assumptions about the early heckelphone. Despite gaps in the information available to us, we reliably estimate that 160 heckelphones have been manufactured since the instrument's

100. No doubt many of these decisions were influenced by practical issues of availability, as not all organizations own or have access to these instruments.

101. Peter Hurd has compiled a list of nearly 500 pieces written for heckelphone or bass oboe, which he has made available on the Internet (*www.Contrabass.com/pages/heckel-rep.html*); approximately 300 of these compositions call for heckelphone.

102. See Klapproth, "Hundert Jahre Heckelphon," 66, for a detailed discussion of Henze's heckelphone writing.

103. Douglas Yeo, personal communication, 2003.

104. In a 2004 note to Peter Hurd she describes "working in my private office at home, where I have the lists on the floor. The writing is not good to read and sometimes I need a magnifying glass. . . ." We deeply appreciate her help.

invention a century ago, including 146 full-size instruments and 14 smaller models.

From 1904 to 1911, heckelphone serial numbers were assigned in a unique series separate from any other kind of instrument made by the Heckel firm, running from 1 to 52. Eight of these (nos. 6–8, 11–12, and 15–17) were piccolo heckelphones in F, with the remaining forty-four being full-sized instruments in C.[105] Beginning in 1912, heckelphones were included in a four-digit serial numbering system used for all the Heckel woodwinds other than bassoons. A further 104 numbered heckelphones were sold from 1912 to 2002, of which only four were smaller models: one terz-heckelphone in E♭ (no. 3519) and three piccolos in F (nos. 4308, 4874, and 4876). Added to the earlier 52, this brings the total of heckelphones with serial numbers to 156.[106]

In addition, four instruments have no serial numbers, two of which are not listed in the Heckel factory archives. One, a model 36b heckelphone, is stamped "Mollenhauer"; as it is otherwise identical to Heckel instruments, this is most likely a "stencil," made by Heckel and sold under the Mollenhauer trademark. Another unmarked instrument is identical to no. 4055. There is also an unnumbered terz-heckelphone at the Heckel factory, and a companion instrument there bearing the number 151, which (as explained above) is unlikely to be a serial number. Thus, we have evidence for the manufacture of (at least) 160 heckelphones: 52 made from 1904 to 1911, 104 with serial numbers dating from 1912 to the present, and four that lack serial numbers.[107]

Of these 160, we have determined the locations of 69. We know of 34 other players, museums, and orchestras that own heckelphones but would not share serial numbers with us. Counting these unidentified instruments, it appears that no fewer than 103 heckelphones are extant.[108]

105. The earliest known heckelphones are serial numbers 1, 3, 4, 10, and 13, all made in 1905.

106. Curiously, three of these (nos. 3805, 4142, and 4720) are not listed in the Heckel factory archives, although we have independently confirmed their existence.

107. One additional example was not made by Heckel: in 2004 the Norwegian woodwind craftswoman Borghild Hillestadt built a heckelphone, using measurements taken from nos. 50 and 4054. This instrument, a graduation project at the Musik Instrument Akademiet in Sarpsborg, Norway, was built under the supervision of the Canadian clarinet maker Stephen Fox (Stephen Fox, personal communication to Peter Hurd, November 30, 2004).

108. The authors will be grateful to learn of other heckelphones; any reader knowing of one not listed in the appendix is invited to contact one or both of us. Robert

Further analysis of the production of the 146 full-size heckelphones made to date leads to several interesting observations. First, heckelphone production occurred in bursts of activity separated by long dry spells. The initial burst, responsible for the creation of a third of all heckelphones, took place during the first decade after the instrument's invention, 1904–1914; during these years forty-nine heckelphones are known to have been made. This corresponds to the first enthusiasm for the instrument, a time during which, as Klapproth has fastidiously documented,[109] a great deal of music was written to include heckelphone. Although the original purchasers of most heckelphones are not known, the tabulated data suggest that most were sold in Germany and eastern Europe. No doubt many went to opera houses to satisfy the requirements of then-current opera composers such as Strauss and von Schillings.

No heckelphones were made during World War I, but a surge in production was seen in the following decade, from 1919 to 1929. Of the thirty-seven heckelphones made in these years, the original nation of sale is known or can be inferred for twenty-three. Sixteen of these were originally sold in the New World and seven in Europe. This distribution reflects the great prosperity America enjoyed during the Roaring Twenties, while the social and economic hardships inflicted upon Europe by World War I minimized heckelphone sales on the Continent.

The upheavals of the world-wide depression of the 1930s and of World War II made their mark on heckelphone sales as well, which totalled only ten in the twenty years from 1930 to 1949. Fourteen instruments were made in the 1950s, but this modest post-war revival was in turn followed by a total lack of heckelphone sales from 1958 to 1971, a period that therefore represents the nadir of interest in this instrument.[110] As Western prosperity increased in the last part of the twentieth

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Howe may be reached at One Baldwin Lane, Wilbraham, MA 01095, USA, or on line at arehow@charter.net; Peter Hurd may be reached at phurd@waypt.com.

109. Klapproth, "Hundert Jahre Heckelphon," 60–63.

110. Production of all types of Heckel woodwinds other than bassoons and contrabassoons was minimal during the 1960s, as shown by the twelve-year interval between heckelphones nos. 4963 (1957) and 4971 (1972). This may reflect a deliberate manufacturing policy. In an uncorroborated 1999 conversation with Robert Howe, John Mack, the recently-retired first oboist of the Cleveland Orchestra, claimed that Heckel would not make heckelphones even to order during these years. As a result, the orchestra was obliged to hire musicians from other cities to play music calling for heckelphone.

century, heckelphone sales resumed, amounting to thirty-six instruments in thirty years.

It is also interesting to look at the distribution of the specific models made. We have noted that heckelphone models fall naturally into three broad classes: the simple-system instruments 36, 36a, and 36b; the Triébert Système 5-derived model 36i; and three increasingly sophisticated models imitating the Conservatory oboe, models 36k, 36 cons, and 36 voll cons. From 1904 to 1915, forty-seven simple-system heckelphones and one model 36i were made. From 1919 to 1949 seven simple-system, twenty-two model 36i, and six Conservatory heckelphones were sold. Since 1950, three 36i and forty-seven Conservatory heckelphones are noted.

Thus, heckelphone making fell into three great epochs, defined by historical circumstances and the preferences of the players. In the first, 1904–15, simple-system heckelphones proliferated in Europe, a process that was arrested by World War I; no heckelphones were sold from 1916 to 1918. In the next, 1919–50, model 36i heckelphones dominated and the instrument spread to North America; again, non-musical events dictated the level of heckelphone sales. In the final and longest epoch, extending from 1950 to the present, the Conservatory heckelphone has established a virtual monopoly throughout the heckelphone-playing world. It remains to be seen, in the current time of relative prosperity, whether this wonderful instrument can establish more than a tenuous place in the symphony orchestras, opera houses, and chamber music venues of the world; or if Altenburg's misgivings of 1904 (quoted above at note 30) will ultimately prove to be correct[111] (fig. 29).

111. Many people helped us with this project. Georg Otto Klapproth, a prominent German heckelphonist, kindly made a copy of his article "Hundert Jahre Heckelphon" available to us prior to publication. Michael Finkelman similarly provided a draft of "The Heckelphone: A Centenary Salute." We thank them, the editors of *'rohrblatt*, and Daniel Stolper, editor of *The Double Reed*, for their courtesy. Thomas MacCracken edited this paper with tact and finesse, and made many improvements in texts translated from German. Christian Begai (New York, NY) and Thomas Potter (Ludlow, MA) also helped with German translations. Albert Rice provided archival materials, reviewed the manuscript and made valuable suggestions. Edith Reiter and Ralf Reiter of Wilhelm Heckel GmbH provided invaluable help, including extensive data and photographs. Others who assisted us were Sarah Berger (Peabody Conservatory), Geoffrey Bridge, Tim Chance, Fred Cohen (University of Massachusetts), Dr. Paul Cohen (Manhattan School of Music), Ronald Fox, Michael Fredericks (Houston Symphony Orchestra), Christa Garvey (Denver Symphony Orchestra), Julie Ann Giacobassi (San Francisco

FIGURE 29. Heckel brand mark, from heckelphone no. 3985. Collection of Robert Howe.

Symphony Orchestra), Alain Giraud (Les Roseaux Chantants), Grant Green, Bonnie Houser (Cleveland Institute of Music), Mark Hill, Bruno Kampmann, Daniel Leeson, David Lurie, Diane Napier (Hartt School of Music), Henry Skolnick, Stephen Toombs (Case Western Reserve University), Sharlotte de Vere, and William Waterhouse. Information on specific instruments was provided by various heckelphone owners, players, and conservators as indicated in relevant footnotes; we thank them again for their kindness. Robert Howe also thanks his children Jonathan and Sarah, who helped to prepare the illustrations. He dedicates this paper to the memory of his wife, Joyce Kingsbury-Howe (1955–2004), who, in addition to putting up with the many hours he spent on this project, helped to collect and analyze data on heckelphone production and distribution.

HECKELPHONE PRODUCTION, 1904–2004

Data on serial and model numbers, completion dates, country of original sale, and intended pitch were kindly provided by Edith Reiter, proprietor of Wilhelm Heckel GmbH. Other information comes from our contacts with current or recent owners; in many cases, we have seen or played the instruments.

Serial Number*	Model	Date Completed	Location, Owner, Comments
1	36	12.19.1904	Scotland, private owner. Used in Scottish National and other orchestras. Silver keys, tiger-striped wood. First sold in Germany; resold in Edinburgh, 1943
2	36	12.14.1904	Sold in Sweden
3	36a	01.14.1905	Poznan (Poland), Musical Instrument Museum, no. MNP I-432, purchased by the museum in 1959; location of original sale unknown.[112]
4	36b	03.09.1905	Preserved at the Heckel factory as a prototype
5	36	03.09.1905	
6	36m/o	03.01.1905	Piccolo in F[113]
7	36m/o	06.01.1905	Piccolo in F
8	36m/o	06.01.1905	Piccolo in F
9	36a	09.10.1905	
10	36a	09.10.1905	Dresden opera, Kurt Mahn. Played in premiere of *Salome* and still in use[114]
11	36m/o	09.19.1905	Piccolo in F. On display at the Heckel factory
12	36m	10.06.1905	Piccolo in F. On display at the Heckel factory
13	36b	11.15.1905	Minneapolis, Hans Peterson; ex-Curtis Guckert
14	36a	12.15.1905	
15	36m/o	02.09.1906	Piccolo in F
16	36m/o	02.09.1906	Piccolo in F
17	36m/o	02.09.1906	Piccolo in F. Sold in Romania, 08.10.1916

112. Also marked "III MAA," which appears to be post-factory. Patryk Miernikiewicz, e-mail to Robert Howe, 06.01.04.

113. For those piccolo heckelphones marked as model "36m/o" we do not know if they were in fact 36m or 36o; the two models differed only in the arrangement of the key touches for the right little finger, with the 36m having the German and the 36o the French arrangement.

114. Alain Girard, e-mail to Robert Howe, 2003.

Serial Number*	Model	Date Completed	Location, Owner, Comments
18	36b	03.19.1906	Sold in Czechoslovakia
19	36b	05.01.1906	Paris, Samuel Andreyev; ex-George Meerwein, Bamberg. Played in Bamberg Symphony and Opera[115]
20	36b	06.09.1906	
21	36a	07.04.1906	Frankfurt, Museum Viadrina
22	36b	08.29.1906	Stuttgart, ex-Budapest Opera
23	36b	09.17.1906	
24	36a	10.10.1906	Strassbourg Symphony, France[116]
25	36a	10.10.1906	New York, Metropolitan Opera. Modified by Alfred Laubin to model 36k. Played by Andrew Shreeves
26	36a	11.09.1906	New Haven, Yale University Band. Used in New Jersey Symphony
27	36a	11.30.1906	
28	36a	12.01.1906	
29	36a	12.20.1906	
30	36	01.07.1907	
31	36a	01.18.1907	
32	36b	02.15.1907	
33	36b	02.19.1907	Studio City, CA (Los Angeles), John Clark; ex-Don Christlieb. Used by Christlieb in movie soundtracks including *Gone with the Wind* and *Laura*; by John Ellis for his famous recording of the Hindmith *Trio* opus 47[117]
34	36b	03.07.1907	
35	36b	04.29.1907	
36	36a	07.29.1907	Vienna, Gunter Lorenz[118]
37	36b	10.16.1907	
38	36b	01.25.1908	Düsseldorf, Thomas Keifer[119]
39	36b	01.25.1908	

115. George Meerwein, letter to Robert Howe, 02.05.

116. Carlo Colombo, e-mail to Peter Hurd, 09.12.03; Samuel Andreyev, e-mail to Robert Howe, 09.24.04. Colombo notes that heckelphone no. 24 proved unsuitable for a recording of the French-language version of *Salome* (Virgin Classics VCD-7-914477-2) because the key system "like German clarinet" was too cumbersome for the oboist, Jacek Piwkowski, "and the orchestra rented one from Heckel (that you can hear on the recording) more handy." Mr. Piwkowski, in an e-mail to Robert Howe 10.04, confirms the story.

117. Don Christlieb, letter to Robert Howe, circa 1986.

118. Alain Girard, e-mail to Robert Howe, 2003.

119. Alain Girard, e-mail to Robert Howe, 2003.

Serial Number*	Model	Date Completed	Location, Owner, Comments
40	36b	10.29.1908	With muting bell
41	36b	12.20.1908	Sold in Germany
42	36b	01.25.1909	Vienna State Opera / Vienna Philharmonic Orchestra.[120] With muting bell. Played by Alfred Hertel,[121] Gunter Lorenz
43	36b	02.03.1909	Lisbon, National Musical Instrument Museum
44	36b	02.23.1909	
45	36b	04.04.1909	
46	36a	05.07.1910	
47	36b	01.26.1910	
48	36b	11.15.1910	
49	36b	11.03.1910	
50	36i	04.08.1911	Seattle, Peter Hurd; ex-Alf Penn and James MacGillivray, London. Sold at Sotheby's, London, 1979. Thumbplate B♭/C mechanism added after purchase; keywork modified by Keith Bowen to model 36k, 2003. Used at Royal Opera, Covent Garden. Played and recorded in the Hoffnung Concerts for Malcolm Arnold's *Annie Laurie Variations*. First sold in Great Britain
51	36b	10.24.1911	The Hague, Hague Philharmonic Orchestra. One vent hole in bell, central peg. Gift to the orchestra from Richard Strauss for a performance of the *Alpine Symphony,* c. 1917. Played by Theo Peeters[122]
52	36b	10.27.1911	
——	36s	(no date)	Terz-heckelphone (piccolo in E♭). On display at the Heckel factory
151	36s	(no date)	Terz-heckelphone (piccolo in E♭). On display at the Heckel factory
3283	36b		Stolen in Detroit, 1983. Believed to be the instrument used in the Paul Whiteman Band

120. Alain Girard, e-mail to Robert Howe, 2003.
121. Werner Schulze, e-mail to Robert Howe, 02.14.05.
122. Theo Peeters and Dominique Slegers, e-mails to Robert Howe, 09.04.

Serial Number*	Model	Date Completed	Location, Owner, Comments
3414	36b	07.19.1912	London, Royal Opera House, Covent Garden. Two-piece bell. Played by Melbon Mackie[123]
3427	36b	12.20.1912	"Flame-maple" finish ("geflammt")
3432	36b	11.26.1912	
3476		02.05.1913	
3519	36s/t	01.12.1915	Terz-heckelphone (piccolo in E♭)
3628	36b	09.09.1919	Lubbock, TX, Richard Meek; ex-A. Mendelssohn (New York), Ponte's Music (New York), Alfredo Collection (Bridgeport, CT), Doug Koeppe (Texas), Arthur Grossman (Seattle). Rebuilt by Keith Bowen, 2003. Recorded several CDs, 2002–03. Originally sold in USA
——	36b	(c. 1920)	College Park, MD, Lee Lachman. Marked "Mollenhauer"; identical to 3628
3759	36i	01.03.1923	A=440
3770	36i	01.03.1923	A=440
3779		01.11.1923	Silvered keys
3809	36b	01.14.1923	Champaign-Urbana, University of Illinois. Used in the Chicago Symphony. A=440
3810	36b	02.11.1923	South Bend, IN, Fox Corporation. Extensively altered by unknown previous owner; not in playable condition. A=440[124]
3881	36a	07.21.1924	Goteborg, Christer Nystrom. Used in Goteborg Symphony. Altered to model 36h[125]
3896		10.06.1924	
3915	36i	05.30.1925	Hartfordshire, England, Paul Bennett. Nickel keys, A= 440[126]
3916	36b	05.30.1925	Minnesota, private owner. Used in the Detroit Symphony. A=440
3917		05.30.1925	Heidelberg, Matthias and Margaret Friedrich; ex-Werner Schulze, Vienna.[127] A=440

123. Melbon Mackie, e-mail to Robert Howe, 09.17.04.
124. Chip Owen, Fox Corporation, personal interview, June 2003.
125. Chip Owen, Fox Corporation, e-mails to Peter Hurd 1999 and 02.05.05.
126. Paul Bennett, conversation with Robert Howe, 09.14.04.
127. Alain Girard, e-mail to Robert Howe, 2003.

Serial Number*	Model	Date Completed	Location, Owner, Comments
3922		07.22.1925	Sold in Germany. A=440
3923		07.22.1925	
3928	36i	09.11.1925	
3929	36i	09.25.1925	
3950		01.21.1926	Hamamatsu, Japan, Hamamatsu Musem of Musical Instruments, A-0225R. Sold in New York, imported by Carl Fischer. Silver keys[128]
3951	36i	02.11.1926	Seattle, Peter Hurd; ex-Eric Selch, New York, ex-Richard Abel. Sold at Sotheby's, NY, 1985. An early example of the three-holed bell with perforated bottom plate and central floor peg. Modified to model 36k in 2004. A=440
3970	36i	04.10.1926	Detroit, Victoria Alexander; ex-Curtis Guckert. A=440
3985	36i	09.25.1926	Wilbraham MA, Robert Howe; ex-George Peabody College for Teachers. Used in Nashville and Cleveland Orchestras. A=440
4008	36i	01.18.1927	California, Grant Green; ex-Interlochen Arts Academy. A=440
4010	36i	02.07.1927	A=440
4013	36i	03.18.1927	A=440
4014	36i	05.23.1927	New York, private collection; ex-Jack Benny High School, Waukegan, IL. Used in the Milwaukee Opera for *Salome*, 2003. A=440
4018	36k	10.01.1927	
4019	36k	01.03.1928	
4026		12.02.1927	A=440
4051		10.06.1928	A=440
4052		10.16.1928	A=440
4053	36i	10.16.1928	Montreal Conservatory, played by Gerald Corey. A=440
4054	36i	10.30.1928	Toronto, Stella Amar; ex-Avrahm Galper. Used in Montreal and Vancouver Symphonies. A=435
4055	36i	11.12.1928	Bloomington, Indiana University School of Music. Two-piece bell with three vents, perforated bottom plate, center peg. A=440

128. Albert Rice, e-mail to Robert Howe, 09.24.04.

Serial Number*	Model	Date Completed	Location, Owner, Comments
——	36i	circa 1928	New York, Robert DeWar. Unmarked, identical to 4055
40xx[129]		05.28.1929	Sold in Germany. Silvered keys
4097		07.03.1929	Sold in the Netherlands. Nickel keys
4107		08.27.1929	Pittsburgh, private musician. Sold in Canada. Nickel keys. Two-piece bell with three vents, perforated bottom plate, center peg
4132	36k		Sold in USA
4141	36i	10.18.1930	Salt Lake City, Douglas Craig; ex-Dante Perfumo. Rebuilt to model 36k but without split 4. Used in the Utah Symphony Orchestra[130]
4143	36i	09.29.1930	Surrey, England, Richard Smith. Sold to the BBC Symphony. Made with muting bell, now lost. Only known specimen with thumbplate mechanism for B♭ and C. Nickel keys[131]
4145	36i	02.17.1932	Sold in Italy. Nickel keys
4146	36k	04.14.1932	Sold in Germany. Nickel keys
4244	36k	01.02.1934	Tokyo, M. Tamba; ex-Charles Gould, MGM Studios, Peter Hurd. Recorded soundtracks for *Spartacus* and *Manchurian Candidate*. Sold in Germany. Rebuilt and gold plated, 2002
4246	36k	01.02.1934	Sold in Germany. F resonance mechanism added, 2004
4308	36m/o	02.01.1933	Piccolo in F. Utrecht, Ernst Rombough; ex-George Meerwein[132]
4530	36b	09.30.1937	Sold in Russia
4701	36i	12.01.1940	Sold in Germany
4702	36i	01.01.1946	Cologne, Georg Otto Klapproth. Sold in USA (Chicago)
4720	36i	1947	Stockholm, Swedish Radio Symphony Orchestra. Rebuilt as a variant on

129. This appears in the Heckel records as no. 3922, which is untenable, that number having been produced in 1925. The correct number must lie between 4056 and 4096.

130. Douglas Craig, conversations with Peter Hurd, 2003–04.

131. In a conversation with Robert Howe, 03.05.05, Mr. Smith notes, "I played it in all the London Orchestras," including BBC, Royal Philharmonic, London Symphony, London Philharmonic, Covent Garden, Welsh and English National Operas.

132. George Meerwein, letter to Robert Howe, 02.05; Samuel Andreyev, e-mail to Robert Howe, 01.29.05; Ernest Rombaugh, e-mails to Robert Howe, 02–03.05.

Serial Number*	Model	Date Completed	Location, Owner, Comments
			model 36k by adding a bridge from 4 to activate side plate for B♭ and C[133]
4773	36k	05.03.1950	New York, Mark Perchanok; ex-Josef Marx. Used in New York Philharmonic. Split finger touches altered to plateaus by Carl Sawicki, 1985. Sold in USA
4775	36k	05.03.1950	Wiesbaden, Heckel rental instrument
4777	36i	05.03.1950	Wiesbaden, Heckel rental instrument
4784	36k	05.22.1951	Sold in Germany
4786	36k	05.22.1951	Sold in Germany
4788	36k	05.22.1951	Sold in Sweden. Marked "Special"
4864	36k	02.18.1955	Extra touch for low A
4874	36o	02.18.1955	Piccolo in F
4876	36o	02.18.1955	Piccolo in F
4900	36 cons	03.17.1955	Sold in Germany. Low B♭
4918	36 cons	05.14.1956	Düsseldorf, owned by the City of Düsseldorf. Used by Ulrich Brokamp in Düsseldorfer Symphoniker, Deutsche Oper am Rhein Düsseldorf/Duisburg, Opera Cologne, WDR Sinfonieorchester Cologne, Hamburg State Opera, Berlin State Opera, Bamberg Symphony, Berlin Philharmonic Orchestra. Sold in Germany[134]
4920	36 cons	07.14.1956	
4935	36 cons	03.24.1957	Hilversum, Radio Filharmonisch Orchester Hilversum, played by Frank von Koten.[135] Sold in the Netherlands. Extra touch for low A.
4937	36i	03.24.1957	
4961	36 voll cons	10.09.1957	
4963	36 voll cons	10.09.1957	Tampa, FL, Cornelia Biggers. Ex-M. Simpson, Dennis Adcock, Peter Hurd. Used in Edmonton and Calgary Symphony Orchestras. Silver plated, muting bell. Sold in Canada

133. This instrument does not appear in the Heckel records. Björn Uddén, e-mail to Robert Howe, 02.15.05.

134. Ulrich Brokamp, e-mail to Robert Howe, 11.02.04.

135. Alain Girard, e-mail to Robert Howe, 2003.

Serial Number*	Model	Date Completed	Location, Owner, Comments
4971	36 voll cons	07.01.1972	Pittsburgh, American Wind Symphony[136]
4973	36 voll cons	07.01.1972	Sold in USA
4975	36 voll cons	07.01.1972	Sold in Germany. Low B♭
4976	36 voll cons	07.01.1972	Sold in Germany. Low B♭
4977	36 voll cons	12.01.1978	Sold in Germany. Low B♭
4978	36i	08.01.1980	Sydney Symphony Orchestra[137]
4979	36 voll cons	11.01.1981	Sold in Japan
4980	36 voll cons	11.01.1981	Stuttgart, Otto Rainer. Used in the Württembergisches Staatstheater Stuttgart.[138] Sold in Germany
4981	36 voll cons	02.01.1982	Purchase, State University of New York. Played by Donald MacCourt in New York Philharmonic. Sold in USA
4982	36 voll cons	11.01.1982	Sauerlach (Munich), Wolfgang Piesk; ex-Winfried Petri. Used in Symphonieorchester des Bayerischen Rundfunks, Munich. Sold in Germany[139]
4983	36 voll cons	10.01.1983	Munich, Günter Joppig. Sold in Germany. Has bells to A and B♭[140]
4984	36 voll cons	12.01.1983	Sold in Germany
4985	36 voll cons	07.10.1984	Sold in Germany
4986	36 voll cons	12.27.1984	Melbourne Symphony. Sold in Australia[141]
4987	36 voll cons	09.02.1986	Sold in New Zealand
4988	36 voll cons	05.25.1987	Zurich, Opernhaus Zürich.[142] Sold in Switzerland
4989	36 voll cons	10.11.1987	Switzerland, Alain Girard.[143] Sold in Switzerland
4990	36 voll cons	04.19.1989	Sold in Switzerland
4991	36 voll cons	09.27.1989	Sold in USA

136. Chip Owen, e-mail to Robert Howe, 06.16.05.

137. Stephen Moscher, e-mail to Robert Howe, 11.10.04. The Sydney Symphony refused to provide information on the instrument.

138. Rainer Otto, letter to Robert Howe, 01.23.05.

139. Wolfgang Piesk, letter to Robert Howe, 01.14.05.

140. Ownership information: Alain Girard, e-mail to Robert Howe, 2003; bells: Joppig, *The Oboe,* 111.

141. Stephen Moscher, e-mail to Robert Howe, 11.10.04. The Melbourne Symphony refused to provide information on the instrument.

142. Alain Girard, e-mail to Robert Howe, 2003.

143. Alain Girard, e-mail to Robert Howe, 2003.

Serial Number*	Model	Date Completed	Location, Owner, Comments
4992	36 voll cons	10.25.1990	London, John Orford.[144] Sold in England
4993	36 voll cons	12.01.1990	Sold in Japan
4994	36k	07.01.1991	Sold in Austria
4995	36 voll cons	12.01.1991	San Francisco, San Francisco Symphony. Sold in Italy
5000	36 voll cons	05.01.1994	Frankfurt, Wolfgang Schottstaedt. Sold in Germany
5001	36 voll cons	06.01.1995	Sold in Germany
5002	36 voll cons	08.01.1995	Sold in Germany
5003	36 voll cons	12.01.1996	Helsinki, Finnish National Opera; played by Tapani Salonen[145]
5004	36 voll cons	03.01.1998	Birmingham, UK, Birmingham Contemporary Music Group, Margaret Cookhorn. Dark red mahogany finish.[146] Sold in England
5005	36 voll cons	04.01.1999	Sold in England
5006	36 voll cons	06.01.1999	Sold in Germany
5007	36 voll cons	10.01.1999	Sold in Denmark
5008	36 voll cons	02.01.2000	Sold in Germany
5009	36 voll cons	10.01.2001	Sold in Japan
5010	36 voll cons	12.01.2001	Sold in Japan
5011	36 voll cons	12.04.2002	Atlanta, Timothy Chance.[147] Prototype for new keywork designs; left-hand cluster like that on a modern saxophone. Sold in USA
5012	36 voll cons		Shown at 2002 International Double Reed Society meeting, Banff. Retained at Heckel as a demonstration instrument[148]

*Through 1911, heckelphones of all sizes had their own unique serial numbering; thereafter, they were incorporated into Heckel's serial numbering for all kinds of "non-standard" instruments, which over the years came to represent a

144. John Orford, e-mail to Robert Howe, 09.13.04.
145. Anu Ahola, e-mail to Robert Howe, 03.22.05.
146. Margaret Cookhorn, e-mail to Robert Howe, 09.15.04.
147. Timothy Chance, e-mails to Robert Howe, 09.04.
148. Ralf Reiter, e-mail to Robert Howe, 02.05.

progressively smaller proportion of the firm's output. Since 1968, Wilhelm Heckel GmbH has advertised only bassoons, contrabassoons, and heckelphones, making oboes and other instruments only to special order. Gaps in the list of recent serial numbers since 1972 thus reflect Heckel's production of other specially-ordered instruments.