

The Rise and Fall of the Bass Clarinet in A

A877 Dissertation

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ABSTRACT

The bass clarinet in A was introduced by Wagner in *Lohengrin* in 1848, and was used up to 1990 in more than fifty works by over twenty composers, including major compositions such as the *Ring* cycle, Mahler's *Fourth Symphony* and Strauss' *Rosenkavalier*. But only eight historic instruments are known to survive, there are probably less than twelve working instruments in the world and the instrument is regarded as obsolete by all but enthusiasts. It has been largely neglected in the organological literature. This dissertation examines the reasons for its sometime popularity and for its gradual decline.

Chapter 1 explains the organological and musical methodology, and introduces the terminology and notations.

Chapter 2 sets the investigation in the context of the history of the bass clarinet.

Chapter 3 discusses the extant or well-documented bass clarinets in A that have been identified. Several museum visits were made to identify or reject possibilities. A new mathematical procedure was developed to determine the pitch of an unmarked instrument from measurements; this eliminated one museum specimen that was erroneously labelled. Since the possibility arose that some parts for bass in A were in fact played on a B \flat instrument with extra range, a number of examples of such instruments were included in the search.

Chapter 4 discusses documentary sources. These include orchestration manuals; composers' letters, court orchestra records and manufacturers' records, catalogues and communications.

Fifty-eight works using the bass in A are discussed in Chapter 5. All of these – plus in most cases related works – have been studied, looking in particular for passages that contradict the normal rules for choice of clarinet, and for musical evidence of the type of instrument expected. One instrument was played and recorded, and interviews were held with professionals who regularly use the bass in A.

The conclusion (Chapter 6) is that while there were a number of contributing factors to the decline, the primary reason was commercial. With the rise of school wind bands in the twentieth century, manufacture turned overwhelmingly to the B \flat instrument. The A became eventually an almost-unavailable curiosity.

However, in view of the somewhat different sound of the instrument, its specification by many significant composers and a few examples in which it appears reasonably certain that the instrument was selected for its tonal qualities or its key, a case is made for the reintroduction of the bass clarinet in A in ‘period’ orchestras.

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Statement

No part of this dissertation has been submitted for any qualification at any university or any other institution. The entire work has been prepared by myself alone.

ABBREVIATIONS FOR MUSEUMS AND COLLECTIONS

A-MCA-S	Museum Carolino Augusteum, Salzburg
A-KMW	Kunsthistorisches Museum, Wien
B-MIM	Musée d'Instruments de Musique, Brussels
CH-HMB	Historisches Museum, Basel
CZ-CMM	Czech Music Museum, Praha
D-SIfM	Staatliches Institut für Musikforschung der Preußischer Kulturbesitz, Berlin
D-MMUL	Museum für Musikinstrumenten der Universität Leipzig
D-MS	München Stadtmuseum
D-GNM	Germanisches NationalMuseum, Nürnberg
GB-EUCHMI	Edinburgh University Collection of Historical Musical Instruments
GB-Oxford	Bate Collection, University of Oxford
I-CMT	Civico Museo Teatrale, Trieste
US-CT	Stanley-Whitman House, Farmington CT
US-DC-S	Smithsonian Institution, Washington DC
US-MI	Henry Ford Museum and Greenfield Village, Dearborn MI
US-SD-NMM	National Music Museum, University of South Dakota, Vermillion SD
US-PY	Phillip Young private collection, now in USA-SD-NMM

OTHER ABBREVIATIONS

ET	Equal Temperament	n.d.	No date
RN	Rehearsal Number	n.k.	Not known

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CHAPTER 1

INTRODUCTION AND METHODOLOGY

The bass clarinet in A was introduced by Wagner in *Lohengrin* in 1848. Unlike the bass instruments in C and B \flat , it is not known to have a history in wind bands. Its appearance was not, so far as is known, accompanied by any negotiations with makers. Over the next century, it was called for by over twenty other composers. The last works to use the bass in A are, I believe, Strauss' *Sonatine für Bläser*, 1942, and Messiaen's *Turangalîla-Symphonie* (1948, revised 1990) and the instrument has all but disappeared from orchestral use; there are very few left in the world. It is now often called obsolete, despite the historically-informed performance movement over the last half century which emphasizes, *inter alia*, performance on the instruments originally specified by the composer.

The key questions are, why was the bass clarinet in A used so much and why is it now so little used? Was it ever used by composers because of the unique perceived quality of its sound? Should 'period' orchestras revive this instrument?

The only articles that treat the A bass in more than a cursory sense are Leeson (1993) and Joppig (2005). Leeson poses a number of possibilities for its one-time popularity: compatibility with the tonality of the soprano clarinets, the extra semitone at the bottom of the range and the unique sonority of the instrument. For its disappearance he posits the extension of range of the B \flat bass, and the economy and convenience of having only one large, expensive instrument. He suggests that the history of the bass in A is more likely to be found in the German than in the French bass clarinet tradition. Joppig examines one aspect of this

tradition: Mahler's use of the clarinet family. He includes a list of the bass clarinets in A and their manufacturers that are known to him, which includes instruments in private collections.

Leeson's article forms the starting point of this dissertation. There are two main threads of investigation, organological and musical.

Methodology

Relevant organological topics include the development of the bass clarinet; when and in what pitches was it manufactured, when was the 'extra' semitone introduced and how extensively were such instruments available? The number of instruments is small enough to attempt a complete catalogue of extant bass clarinets in A and also a representative list of other bass clarinets with a similar range.

Contemporary documentary sources are composer's letters, especially those to conductors of their works; journal articles; treatises on orchestration, which could be expected to influence the selected instrumentation; and manufacturers' records, advertisements and communications, which show the availability of the instrument.

The primary musical method is the examination of relevant scores. Is there evidence for use of the A bass for the extra semitone (sounding $D\flat$), which is crucial in providing the bass line in certain keys? Or is its tonality just chosen for simplicity of key signatures? In particular, what *contrary* examples exist, in which the tonality of the bass does not follow that of the soprano clarinets or of the key signature?

The project was completed by playing and recording two passages on both B \flat and A bass instruments and making a subjective assessment of differences perceived by the player and by educated listeners, and by interviewing some professional bass clarinet players.

Terminology

Many terms have been used to describe the bass clarinet (discussed by Rice 2009, 250):

Baßclarinetten, Clarinettenbass, Schollbass, clarone, bass orgue, clarion, clarinette violoncello, fagottino, polifono, contro clarinetto, glicibarifono, basse tube, bass guerrière, bimbonclaro, clariofon etc. Unless the exact term is relevant, I shall use *bass clarinet* or sometimes simply *bass* where the context is clear.

Notations

Since clarinets are transposing instruments, it is essential to distinguish between the pitch read by the player (and so labelled on the fingering charts for the instrument) and that produced by the instrument. The former is called 'written' pitch and the latter 'sounding' or 'concert' pitch.

Two notations are used for most music for the bass clarinet. The more common, known as French notation, is to write the music in the treble clef at ninth (B \flat instruments) or minor tenth (A instruments) above sounding pitch. The player then reads the part in the same way as he or she does the soprano instrument and it sounds an octave lower than the latter. In contrast, in German notation the notes are written in the bass clef at (transposed) pitch. Occasional high passages are written in the treble clef, also at transposed pitch. Besides Wagner, Richard Strauss, Mahler and others used German notation at least sometimes.

Occasionally (e.g. Rimsky-Korsakov, and Stravinsky in *Rite of Spring* and sometimes even Wagner) the bass clef is written in German notation and the treble clef parts in French notation (Kroll 1968, 116; sometimes called Russian notation). In difficult cases the score may be more authoritative than the parts. It is usually possible to settle the question by looking at the highest and lowest notes written for the instrument and seeing whether they fit into its range, and by looking at passages that transit the clefs.

Many notations have been used to describe absolute pitch (Randel (1986, 640) and also Lloyd and Rastell (2009)). The Helmholtz (1863) notation (Table 1) is used in this dissertation.

Table 1. The Helmholtz notation. The form of the symbol changes with each C, proceeding upward.

			Middle C			
<i>C'</i>	C	<i>c</i>	<i>c'</i>	<i>c''</i>	<i>c'''</i>	<i>c''''</i>

Exact pitch names will be italicized, (e.g. the lowest pitch of a standard soprano clarinet is *e*), but pitch classes will be capitalized and not italicized (e.g. 'clarinets in A'). For example, the lowest written pitch of the modern extended bass clarinet is **C**. The written pitch in French notation actually contains the implicit instruction 'down an octave'. To avoid confusion, I use 'written' pitch only in implied German notation in the bass clef, for both clarinets and basset horns.

CHAPTER 2

THE DEVELOPMENT OF THE BASS CLARINET

Bass clarinets are at least mentioned in most of the books on clarinet: Brymer (1976), Hoepfich (2008), van Kalker (1997), Dullat (2001) and comprehensively up to 1860 in Rice (2009). First, we should consider the definition – or, at least, commonly-accepted descriptions – of the bass clarinet, and how we distinguish it from the basset clarinet, bass chalumeau and basset horn.

The modern bass clarinet is pitched an octave below the corresponding soprano clarinet, and commonly stands in B \flat ; instruments are occasionally made in A to special order. The range is chromatic down to written low E \flat (an additional semitone with respect to the soprano clarinet) and ‘extensions’ down to written C are common, especially for orchestral instruments. It is twice the length of the soprano clarinet, but not twice the bore. The soprano clarinet is normally 14 – 15 mm bore, but the modern bass is between 21 and 24 mm bore.

Confusingly to the modern musicologist, Anton Stadler announced in 1788 (on a handbill of his Benefit Concert in Vienna) a ‘Baß-Klarinet’. We now call them ‘basset clarinets’. Mozart wrote the concerto K. 622, the clarinet quintet K. 581 and the obligato to the *Parto, Parto* in *Clemenza di Tito* for these instruments. From strong iconographic and musical evidence, they were normal clarinets in bore and tonality (A and B \flat) but with extended length and keywork down to written c (Poulin 1996).

The basset horn, invented around 1770 probably by Anton and Michael Mayrhofer (Rice 2009, 101), may have been the first attempt at a bass member of the clarinet family. This is

indicated by some of its earliest names in the literature: *basse-tube* (1772) and *basse-taille* (bass voice) (1772), referring to the instruments of Gilles Lot of Paris (cited from contemporary documents by Rice 2009, 105). However its bore is closer to that of the soprano clarinet, resulting in a very different tone given its increased length. A tenor instrument, it was usually pitched in F or occasionally in G, D, E and E \flat (Rice 2009, 95). An 'extension' to written C, sounding F was developed by Theodore Lotz (Albrechtsberger (1790) cited in Rice 2009, 109). Its music, notably by Mozart, demanded this range. There is no basset horn 'family'; it is a member of the clarinet family with a relatively narrow bore and a range to written C.

The early history of the clarinet and its development from the baroque chalumeau has been treated by Rice (1992). The chalumeau, which flourished from the late seventeenth to the late eighteenth centuries, co-existed for most of this time with the baroque clarinet. Like a clarinet, it had a cylindrical bore and a single-beating reed; the quality of the notes is good, but chalumeau do not play in the 'upper' (overblown) register. They would normally have been found in a consort of different sizes. Such consorts existed towards the end of the seventeenth century, and examples of all sizes survive (Rice 1992, 29), but the consort of chalumeau did not have the same weight of tradition as the consort of recorders.

The critical step in the invention of the clarinet (usually, though doubtfully, attributed to J.C. Denner of Nürnberg (Rice 1992, 40)) was to make the *bb'* tone hole smaller, move it higher up the instrument and add a short register tube protruding into the bore. This allows an upper register, a twelfth overblown from the lowest register (still called the *chalumeau* on clarinets). The twelfth, rather than octave, arises from the acoustic characteristics of the cylindrical tube

and single reed, which emphasise the odd harmonics (Rendall 1971, 31). We distinguish a clarinet from a chalumeau by its ability to play in the overblown or *clarion* register.

The history of the bass clarinet proper began in 1793 with Heinrich Grenser of Dresden who invented an instrument, in bassoon form, with wider bore and hence more powerful tone, descending to low C. He advertised his invention in *K.K. Prager Oberpostamtszeitung* (Rice 2009, 258). The instrument survives and is now in Stockholm (S-Stockholm M2653), and it inspired a large number of instruments by many makers.

The typology of the bass clarinet

Discussions on bass clarinet typology appear in van der Meer (1987), Dullat (2001) and Rice (2009) and will not be discussed in detail. Examples of bass clarinet types are shown in Figure 1. Some of these, though elegant, are irrelevant to the development of the bass clarinet, and are essentially unsuccessful prototypes.

The earliest of these, the plank type instrument in B-MIM (M.939) was described as pitched in A by the curator V.C. Mahillon (1893-1922; Rice 1992, 35). However, pitch has varied enormously over the last two centuries (Haynes 2002). Without knowledge of the local absolute pitch at the time and of the musical context in which the instruments were played, we cannot take this as being the first known example of a bass clarinet in A. This instrument is dated a century before the first known music for the A bass. The types relevant to this dissertation are the bassoon type (and its derivatives) and the modern straight type.



Figure 1: Some types of bass clarinet. From top left, first row: (1) Plank type, anon, mid 18th C, B-MIM (crook absent, bell rotated for clarity) (author) (2) Mayrhofer basset horn type, 1762, D-MS 52-50 (author) (3) "serpent" type, Papalini, early 19th C, (B-MIM); (A. Rice) (4) Bassoon type, Ludwig & Martinka, 1860s, CZ-CMM E.135. (CZ-CMM). Second row: (1) Ottensteiner half-bassoon type, 1850s, D-MS 79-28; (author) (2) Bimboniphone, Bimboni, D-GNM MIR-482 (A. Rice). (3) Modern type, Kruspe (Sr.) basses in A and B \flat , c. 1880 and 1870, D-MMUL 4478 and 4479 (author). (4) Kruspe (Jr.) bass in A, c. 1900, D-MS 90-43; (author). (5) C.W. Moritz bass in A, c. 1906, D-SifM 4438 (SifM).

Bassoon types

The bassoon type was successfully made in quantity by many makers over at least 60 years, evolving into the half-bassoon type (with a straight upper joint, a butt joint and a bell coming directly off this) towards the end of its life, and also into a simple folded tube (the *Glicibarifono*). The excellence of the workmanship of Streitwolf (1828 onwards; Rice 2009, 268) is a notable milestone. The instrument was re-invented in France by Dumas in about 1808 – 1810, when it was presented at the Conservatoire (Rice 2009, 261). A short history of the secretive Dumas and his instrument is given by Fétis (1833). Its dimension of about a metre, and above all his comment that

This clarinet, of which the analogue was made in Germany in 1830, is an old French invention of M. Dumas, formerly chief of the goldsmiths to the Emperor Napoléon¹

make it most probable that the instrument was bassoon shape; the only instruments available in Germany in the 1830s were of bassoon shape, and Streitwolf's bassoon-shape instrument was known to Fétis (1834).

The lowest note obtainable in this type is relevant. In Chapter 3 we shall see that "extension" down to at written C was normal. The design was carried over from the bassoon, in which this range is universal; it therefore seems inappropriate to use the term 'extension' at all.

Bass clarinets were designed and originally used for wind bands, in order to provide a more powerful bass line than was available on the classical bassoon. Their use is well-documented

¹ Cette clarinette, dont l'analogue a été fabriquée en Allemagne en 1830, est une ancienne invention française qui appartient à M. Dumas, ancien chef de l'orfèvrerie de l'empereur Napoléon..

(Rice 2009, 268 for American and 378-384 for European bands). And while it has been considered that only B \flat instruments were used in military and other wind bands, I noticed on the Kruspe bass in A in Leipzig (D-MMUL 4478) the stamp “K.B.5.1.R.” (Figure 2).



Figure 2. The letters K.B.5.1.R. stamped on the Kruspe bass D-MMUL-4478 (author).

This is a military band stamp; this one was interpreted by the curator, Dr Eszter Fontana, as *Königlich Bayerische 51st Regiment*, or possibly *Königlich Bayerische 5th Infanterie Regiment* indicating that bass clarinets in A were also used in military bands.

No orchestral music is known for the bass clarinet before the operatic solos in Saverio Mercadante’s *Emma d’Antiocha* [1834] for bass in C, and Meyerbeer’s *Les Huguenots* [1836] for bass in B \flat (Rice 2009, 342 - 356). Mercadante’s work was played by Catterini on his own instrument and used the full bottom range to C. This was a bassoon-type instrument, an excellent example of which survives (GB-Oxford 496). Meyerbeer’s famous solo was played by Dacosta on Buffet’s new (modern type) instrument; it also used its full bottom range, to E.

The bassoon design is a compact and convenient shape for the player. Why then, did it fail in the long run? The greater simplicity of the shorter-range modern type, and its (probably) lower cost may have been reasons. It seems unlikely that there was any inferiority in tone

quality. Fétis (1833, 122) states that the bassoon-type bass clarinet of Dumas was well received by audiences², and he also reports

I should not forget to state that the fingering of the bass clarinet only differs from the ordinary clarinet in three or four notes. [...] Two or three hours of work suffice to acquire the skills.³

Hoerich discusses the Dumas instrument as straight, citing Fétis (1834). However, Fétis actually makes it clear in this article that Dacosta is now playing on a the new Buffet straight instrument:

In order that the new instruments conserve as much as possible of the analogy that exists with the soprano clarinet, it is necessary not to alter the form at all; I think therefore that Messrs. Dacosta and Buffet have better achieved this end than Mr. Streitwolf in not curving the tube of their bass clarinette, and in facilitating the playing of the instrument by means of an inclined bocal to which the mouthpiece is adapted.⁴

Perhaps here is a clue to the gradual disappearance of the bassoon type. Musical authorities, especially in France, believed that a clarinet should look like a clarinet and not like a bassoon.

Bassoon-type designs overlapped, in Germany and elsewhere, with Wagner's call for a bass clarinet in *A* in *Lohengrin*, in which he wrote down to a written *E* only – easily playable on, say, Streitwolf's *B \flat* instruments, or even by a bassoon-type bass clarinet in *C* such as the Ludwig & Martinka bass discussed below.

² une vive sensation de plaisir sur l'auditoire nombreux

³ Je ne dois oublier de dire que le doigté de la clarinette basse ne diffère de celui de la clarinette ordinaire que pour trios ou quatre notes. ... Deux ou trios heures de travail suffiront pour en acquérir l'habitude.

⁴ Pur que ces nouveaux instrumens conservent autant d'analogie qu'il est possible avec la clarinette soprano, il est nécessaire de ne point en altérer la forme; je pense donc que MM. Dacosta et Buffet ont mieux atteint le but que M. Streitwolf en ne courbant pas le tube de leur clarinette basse, et en facilitant le jeu de l'instrument par un bocal incliné auquel s'adapte le bec.

Modern types

The modern 'straight' type is defined as one in which the tone holes lie essentially in line, as in a soprano clarinet. The neck is curved for the convenience of the player, and the bell section may point downwards or, more usually, curve upwards. The type was introduced by Desfontenelles of Lisieux in 1807, improved by Buffet 'Jeune' in 1833 and notably by Adolphe Sax⁵ in 1838, and is the type of all bass clarinets made today, whether they are Boehm, Öhler or Schmidt-Reform Boehm systems.

Although, as mentioned above, the bass clarinets of Streitwolf and Buffet attracted favourable notices, it seems clear that Sax's was superior. He had already made significant innovations to the design of soprano clarinets, and now applied these to the bass. Several writers, e.g. Berlioz (quoted in Kochnitzky 1949:11-12) remark on Sax's attention to acoustic detail, such as the larger bore, improved mouthpiece, the precise positioning and larger diameter of the tone holes and also the use of a second speaker key to improve the upper register. Berlioz (1843 and 1856, 116) commented on the effects of these improvements:

M. Adolphe Sax's new bass clarinet is still more improved. It has 22 keys. That which especially distinguishes it from the old one is its perfect precision of intonation, an equalized temperament throughout the chromatic scale, and a greater intensity of tone.

Sax also adopted plateau keys to operate the tone holes. There is an anecdote reported in Weston (1977, 80) that Sax and Dacosta held a play-off in front of Mme. Dacosta, who is reported to have remarked

⁵This preceded his invention of the saxophone, which is a completely different family.

My friend, I am sad to say this, but since Monsieur [Sax] has played, your instrument has the effect on me of a mirliton.⁶

A mirliton was a covered-double-reed pipe with decidedly vulgar tone. Some can be seen in CZ-CMM nos. E1741, 1733, 1707 and 2404. This is probably the least partisan of the comments available on the sound of the instruments. Soon after, Dacosta adopted a Sax instrument, and eventually the design of the Buffet and Sax instruments converged, with the adoption of the Boehm system keywork. German instruments retained the Müller keywork, which eventually became the Öhler system, as in German soprano instruments.

The quality and innovation of Sax's instruments may also have been a cause of the eventual disappearance of the bassoon-type instruments. The excellent playability of Sax's instruments must have been a factor, against which the lack of notes below *E* was not perceived as a disadvantage for orchestral playing. As we shall see, this range remained standard for the rest of the nineteenth century.

⁶ "Mon ami, je suis fâchée de te le dire, mais depuis que Monsiouer a joué, ton instrument me fait l'effet d'un mirliton!". Reported in *Le Patriot Belge*, 23 September 1843, according to Radiguer, "L'Orphéon, la vie et l'oeuvre d'Adolphe Sax, 3733; cited by Rice 2009, 299.

CHAPTER 3

BASS CLARINETS IN A OR WITH AN EXTENDED LOW RANGE

Secondary sources provide very limited information on the actual instruments in A. In the first edition of Grove (1879) we find dismissive statements by W.H. Stone:

Bass clarinets. The commonest of these is in B \flat , the octave of the ordinary instrument, but the writer has a C basso of Italian make, and Wagner has written for an A basso. They are none of them very satisfactory instruments; the characteristic tone of the clarinet seeming to end with the corno di bassetto. (Vol. 1 p. 362).

They are all slow-speaking, hollow-toned instruments, rather wanting in power. ... Although occasionally of value for producing exceptional effects [the bass clarinet] does not present any great advantages for orchestral use. (Vol. 1 pp. 149, 150).

In the second edition (Grove 1904, 197), also by Stone, the second quotation has been removed from an otherwise unchanged entry. In the third edition (Grove 1927, 657), the clarinet article, by D.J. Blaikley, says of the bass clarinet

That in A is seldom met with outside Germany.

He also states that some instruments had a range extended downwards by four semitones. By the fifth edition (Grove 1954, 327), there is an extensive section on the bass clarinet by F.G.

Rendall, in which he states

Bass clarinets were formerly pitched in C and A as well; both are now obsolete.

Shackleton (2009), in New Grove Online, states:

With the widespread lowering of pitch standards to $a' = 440$, very few players or opera houses saw the need to retain the instrument in A, which may now be said to be extinct along with its companion in C.

The lowering of pitch standards is not relevant in any absolute sense, and in many localities the pitch was lower in earlier periods. It is more likely (A. Rice 2009, private communication) that the writer meant that when pitch standards were lowered and opera houses had to replace their instruments, they economized by purchasing a single bass clarinet in B \flat with extended range. However, other instruments such as contrabassoons were much more expensive, so the argument is still weak.

Musik in Geschichte und Gegenwart does not discuss the clarinet family in detail until the current edition. Riehm (1996, vol. 5, p.194) states:

The modern bass clarinet stands in B \flat , an octave deeper than the normal clarinet [...]. Parts for bass clarinet in A or (rarely) C are transposed.⁷

Riehm also says that an extra semitone is provided on all bass clarinets in order to play the bottom note of the A instrument, and that still lower notes have been called for by composers such as Prokofiev or Shostakovitch [for the B \flat instrument only]. On p. 194 he states:

Many early bass clarinets were in C, here they were used as customary bass instruments (in place of bassoon). As, after Meyerbeer's *Les Huguenots*, the bass clarinet took its place in the proper instruments of the orchestra, so it was built in A and B \flat , similarly to the normal clarinets. Today, only instruments in B \flat are used.⁸

Kroll (1968, 112 footnote 1) states

Strangely enough, the bass clarinet in A has also been and is still written for. Today the bass clarinet is invariably pitched in B \flat ; other pitches have to be transposed by the player.

⁷ Die modern Baßklarinette steht in B, eine Oktave tiefer als die normale B-Klarinette, Stimmen für Baßklarinette in A oder (selten) C werden transponiert.

⁸ Viele frühe Baßklarinetten stehen in C, da sie vor allem als Baßinstrumente (statt Fagott) benutzt wurden. Also die Baßklarinette nach Meyerbeers *Hugenotten* als einiges Instrument ins Orchester gelangte, wurde sie analog zur normalen Klarinette in B und A gebaut. Heute werden nur noch Instrumente in B benutzt. Etc.

The single musical example he quotes is from *Tristan* for the bass in A. He also claims (Kroll 1968, 113 footnote 1) that the bass clarinet was absent in the first performance of *Lohengrin*, citing Schreiber (1938, 133, 135, 141). However, Schreiber's evidence concerning *Lohengrin* is of the cor anglais and harp. Schreiber mentions the lack of bass clarinets in *Militärkapellen* from 1833 and suggests that this must have been missing in the premier of *Lohengrin*, but this is speculation.

Dullat's book is mainly concerned with descriptions of clarinets and the families of clarinet makers. He illustrates one bass clarinet in A (Dullat 2001, 182: C.W. Moritz, SifM No. 4438) but offers no further comment.

Van Kalker's book (1997) does not mention the bass in A.

Roeckle's thesis (1966), on the historical development of the bass clarinet, mentions the A bass briefly (p. 163) and contains a quote (p. 166) from a letter from Jean Bloudelet of Buffet Crampon et Cie (February 15, 1966). Bloudelet said that requests for bass clarinets in A or C are received not more than once every five or six years.

Hoeprich (2008) gives a detailed account of the evolution of the bass clarinet and has three comments on the bass in A.

Wagner often wrote for the bass clarinet in A (although these parts are routinely transposed for bass clarinet in B \flat). (p. 272).

As with Wagner, we also see Mahler and Strauss writing for bass clarinets in B \flat and A, occasionally scoring for both instruments in the same work, and not always for any obvious reason. (In Mahler's Fourth Symphony, for example, the tonality hardly justifies the use of a B-flat instrument at the work's end.) For some time now it has been customary practice in orchestra to play all bass clarinet parts on an instrument in B flat, transposing parts for bass clarinet in A. (p. 274)

Rachmaninoff often called for bass clarinets in both A and in B flat in his works, most notably the Second Symphony (1907) and the *Symphonic Dances* (1941). (p.275)

Rice (2009) gives a comprehensive account of the development of the bass clarinet and mentions the A as follows:

Wagner introduced the bass clarinet pitched in A in his operas during the mid-1840s; eventually, there was less interest in writing for this instrument and by the mid-twentieth century, it was discontinued by manufacturers. (p. 324)

Apart from Leeson (1993), the only serious consideration of the bass in A is by Joppig (2005), in an article on Mahler's use of the clarinet family. He includes the extant instruments known to him, and pointed out that the use of both A and B \flat clarinets in both soprano and bass registers was absolutely normal in Mahler's time, citing Heinrich Schenker writing as Artur Niloff (1908; cited in Joppig p154 note 22).

During the course of this investigation, it became apparent that the availability of basses with notes below concert *D* was much earlier than at first thought. All bassoon-type bass clarinets possess a range down to at least *C*, and straight instruments with this range are known since 1853 and possibly earlier. Any of these could have been used to play *Lohengrin* and other Wagner operas. The scope of the instrument search was therefore extended to include examples of such instruments, though a full catalogue was not attempted.

Sources

There are several useful reference sources on original instruments. The Shackleton Collection Catalogue (Myers 2007) is a valuable source of typological information, excellent illustrations and detailed descriptions of over 800 clarinets. The New Langwill Index (Waterhouse 2007) is

the most comprehensive dictionary of wind instrument makers available; the succinct cataloguing of makers' marks, locations and family relationships greatly aids the identification of historic instruments. Young (1993) is a valuable cross-museum list of 4500 woodwind instruments. The collection at D-GNM Nürnberg is superbly catalogued (Bär 2003, 2004, 2006) and contains a number of interesting early bass clarinets. Finally, Albert Rice generously gave me free access to his large collection of photographs and documents relating to bass clarinets; his book Rice (2009) is especially helpful for instruments built up to 1860.

Musical scores also provide organological evidence as discussed in Chapter 5.

Determination of the pitch of a bass clarinet

It is certain that the instrument was built as a bass in A when there is a documentary record, when the instrument is so labeled by the maker (see Figure 3) and when a pair of instruments in B \flat and A is preserved. In other cases, this simple question does not have a simple answer, even if the instrument can be played, since absolute pitch has varied enormously in different localities even since 1850 (Haynes, 2002). What is important is the pitch of the instrument relative to that of its musical environment.



Figure 3: The maker's mark from a bass clarinet in A by C. Kruspe of Leipzig (author).

French pitch or *diapason normale* was fixed by law on February 16, 1859 which set a' at 435 Hz. This was the first – not fully successful – attempt to standardize pitch. The pitch of the Vienna opera orchestra was observed to be $a'=466$ in 1859 and that of their Kapellmeister Esser's piano to be $a'=454$ in 1862 (Helmholtz 1885, 502). $a'=466$ is slightly more than a semitone above $a'=435$ Hz.⁹ Interestingly, Esser conducted *Lohengrin* in Vienna, probably in 1858. In 1865 Ludwig II of Bavaria issued an edict lowering the pitch throughout Bavaria to *Diapason normale* by the end of the year; this was also by approximately a semitone (Tremmel 1993, 214). There was a similar change in Saxony a decade later. Thus, in a critical part of the period covered by this research, a B \flat clarinet in Paris or Dresden would have been a slightly flat A clarinet in Munich or Vienna. One must attempt to assess the pitch level in which the instrument was originally played. We shall see that the Bavarian pitch change provides some evidence to date the earliest recorded bass clarinet in A.

Further problems arise when, as is normal in museum collections, the instrument may not be played even if it is in good enough condition. Critical examination is still necessary. An example is instrument E 135 in CZ-CMM, a bassoon-type instrument which was labeled "Bass Clarinet in A by Ludwig and Martinka". The museum staff (all new since 1990) had no information about the provenance of the label or the instrument except the donor's name.

In such cases, the only resort is measurement and mathematics. The following methodology was developed from the discussion and equations given by Benade (1990, 450), also summarized by Fox (2009). Stephen Fox, an expert custom clarinet maker with a scientific

⁹ Frequencies of adjacent semitones in ET are related by the twelfth root of 2, approximately 1.059463. Thus, an equal-temperament semitone above $a'=435$ Hz is a frequency of 460.86 Hz.

background, was also consulted on the methodology (private communication, 2009). A more elementary and less quantitative form of a similar argument appears in Roeckle (1966, 156).

In its lower register, a clarinet approximates closely to a closed-end cylindrical pipe. The fundamental vibration frequency, f , of this pipe depends only on its length, L , and the speed of sound, v :

$$f = v/4L$$

v may be taken as 345 m/s. In principle we measure the length and apply the formula, but there are two complications. The mouthpiece needs special treatment since it varies in shape internally. The best way is to measure its internal volume (e.g. by filling it with water and measuring the water volume), and take its acoustic length as the length of a cylinder of the same volume, and with a bore equal to that of the first joint of the clarinet. This cannot generally be done with museum specimens, but an estimate which will not greatly affect the result is to take half the actual length of the mouthpiece. The second complication is that the bottom note is a poor one to choose for determining the pitch, because of the effect of the bell. There is no simple formula for estimating the acoustic length of a bell of arbitrary shape.

Therefore, it is best to measure the length to the centre of a fairly low tone hole that is followed by an open tone hole and apply a tone-hole correction c . The acoustic length is longer than the physical length to the last closed tone hole by the amount

$$c = \frac{z}{2} \left[\sqrt{1 + \frac{4}{z} (t + hd) \left(\frac{D}{d}\right)^2} - 1 \right]$$

where z is the distance to the next open tone hole, d is the diameter of that tone hole, D is the bore diameter at the open tone hole and t is its depth. h is a factor that may be taken as 0.75 for a completely open hole and 1.0 for an average padded hole. The acoustic treatment of the butt joint has not yet been determined, but tube curvatures are known to have a flattening effect. A spreadsheet has been programmed to evaluate this equation, which is very useful for analyzing instruments that cannot be played. It has been verified by application to carefully-measured instruments such as the Heckel 1906 bass in Nürnberg (see Table 3). In the case of the Ludwig and Martinka 'bass in A', the acoustic length of the E note was measured at 1000.0 mm plus a tone-hole correction of 32.31 mm. The resulting frequency is 83.6 Hz; the butt and mouthpiece approximations will result in an uncertainty of c. ± 2 Hz.

Table 2: Frequencies corresponding to ET pitches at the bottom range of the bass clarinet, taking Diapason Normale ($a'=435$ Hz) as the pitch reference.

F	86.32
E	81.47
E^b	76.90
D	72.58
D^b	68.51
C	64.66

Comparison of this result with ET pitches, shown in Table 2 shows that the closest note is E , that is, the instrument is very likely to be a bass in C. To be a bass in A, the pitch level would have to be about $a'=530$, which is much too far above even the very high Viennese pitch.

It is not known in which temperament orchestral instruments were made, though Berlioz (page 52), implies that Sax's bass clarinet was built in equal temperament (ET). Research by Duffin (2008, 138) indicates that ET was not universally adopted in orchestras until about

1917, and before that the most popular system – whether explicitly recognized or not – was sixth-comma meantone. However, the differences between ET and any other temperament are never as large as an ET semitone so the conclusions above will not be affected.

Orchestras and opera houses

Enquiries were focused on opera houses and orchestras associated with Liszt, Mahler, Wagner and Strauss: Weimar Oper, Bayreuth Oper, Münchner Philharmoniker, Dresdner Oper and Deutsche Oper Berlin, using biographies and letters of the composers to discover these associations. All the above institutions were contacted for information in good time, but no response was received. Given the limited time available, this source was not pursued further, but it is possible that some basses in A will be in these locations. Information was received concerning Covent Garden (Ian Herbert, telephone interview of 2 September 2009) who confirmed that no bass in A was owned by the Royal Opera House, nor by any of its regular bass clarinet players during his tenure as principal clarinet from 1958 to 1997.

List of instruments

Table 3 and Table 4 include all bass clarinets in A that have been found, totalling nineteen. Four instruments with strong documentary evidence are included as well as eight in museums or collections and seven working instruments. The oldest was probably not made for the A tonality and the Nechwalsky instrument may never have been built. The Internet Klarinet and New Bass Clarinet Lists, and the Facebook bass clarinet interest group, totalling around 2500 clarinetists world wide, were used to locate the modern working instruments, shown in Table 4. These lists are probably reasonably accurate for museum collections of modern-type

instruments given the sources used, though it may not include all private collections; and although no bassoon-type instruments in A have been discovered, most are untested. It is almost certainly an underestimate but not a gross underestimate. The instrument is extremely rare. I have examined four of the eight extant museum instruments.

Table 3. Chronological list of extant or documented bass clarinets in A: historic instruments

	Date	Form	Maker	City	Location reference	Pitch	Lowest written note
1	Late 18 th C	Plank	Unknown	Unknown	B-MIM M939.	A?	<i>E</i>
2	1853	Straight	Anton Nechwalsky	Vienna	US-DC-S in B \flat survives. C, B \flat , A claimed in patent.	A?	<i>BB</i>
3	1850s	Unknown	Johann Adam Heckel	Biebrich	Wagner letter of 1861	A	<i>E?</i>
4	Pre-1866	Unknown	Unknown	Unknown, probably Germany	Lachner survey of 1867. Old high pitch.	A	<i>?</i>
5	c. 1866	?half-bassoon, cf. D-GMN, 79-28, Figure 1	Georg Ottensteiner	Tübingen	Lachner survey 1867. New low pitch. Converted from B \flat high pitch	A	<i>?</i>
6	1880s	Straight	C. Kruspe	Erfurt	D-MMUL 4478 (Leipzig)	A	<i>E</i>
7	1890s	Straight	Karl Stecher	Vienna	A-KMW N.E. 345 (Vienna)	A	<i>E?</i>
8	c.1900	Straight	C.W. Moritz	Berlin	D-SlfM 4438 (Berlin)	A	<i>E</i>
9	c.1901	Straight	Carl Kruspe ¹⁰	Leipzig	D-Munich 90-43	A	<i>E</i>
10	1920	Straight	Buffet	Paris	EUCHMI 5122 Edinburgh	A	<i>E</i>
11	1919	Straight	Heckel, No. 3615	Biebrich	G. & I. Joppig collection	A	<i>E\flat</i>
12	1939 - 1959	Straight	Fritz Wurlitzer	Erlbach	D-SlfM (Berlin) 5298	A	<i>E\flat</i>

¹⁰ Attributed to C. Kruspe of Erfurt in the D-MS catalogue (unpublished) and dated pre-1885. However, the stamp (Figure 3) is of his son Kruspe of Leipzig, whose independent workshop existed from 1895 -1929 Waterhouse (1993).

Table 4: List of 'working' bass clarinets in A

	Date	Form	Maker	City	Location reference	Pitch	Lowest written note
1	Jan. 1987 ¹¹	Straight	Selmer D5468 (?)	Paris	Dennis Smylie, New York	A	<i>E♭</i>
2	April 1987	Straight	Selmer Model 33 D5497	Paris	Peter Stoll, Toronto	A	<i>E♭</i>
3	?	Straight	Buffet	Paris	G. Ramsbottom Vancouver	A	?
4	c. 1990	Straight	Selmer	Paris	Ex Dan Leeson, now in UK	A	<i>E♭</i>
5	Dec. 1986	Straight	Selmer D5495	Paris	Alan Andrews, London	A	<i>E♭</i> , extn. to C
6	c. 1985	Straight	Selmer	Paris	Lee Stevenson London	A	<i>E♭</i> , extn. to C#
7	c. 1985	Straight	Selmer	Paris	Mike Huntress London	A	<i>E♭</i>

Table 5 shows a number of 19th century instruments in other tonalities that are capable of playing a concert D \flat . This list is not intended to be comprehensive as there are so many, but gives an indication of their availability. The possibility of transposition at sight on B \flat clarinets from parts written in A was introduced in his tutor by Müller (1825, 26). It was probably not realistic before Müller's invention, and of course he wanted to sell his new clarinet, but it shows that the idea was taught at the time of *Lohengrin*. Müller's tutor was very influential; his system became popular all over Europe and is the basis for the Albert and Öhler systems. The transposition from a part in A on a bass in C is significantly easier. All instruments in Table 5 are therefore 'candidates' for playing the earliest bass clarinet parts in A, and there are many others surviving from the nineteenth century.

¹¹ Selmer serial numbers were dated by Jérôme Selmer (email of 14 September 2009).

Table 5: Chronological representative list of other bass clarinets with capability of playing concert D flat or below

Date	Form	Maker	City	Location reference	Pitch	Lowest written note
c. 1765	Basset horn	A. & M. Mayrhofer	Passau	D-Munich-S 52-50	B \flat	<i>E\flat</i>
1793	Bassoon	Heinrich Grenser	Dresden	S- Stockholm M2653	C, B \flat	<i>BB</i>
1810	Bassoon	Dumas	Paris	Documentary	B \flat	<i>C ?</i>
1830s	Bassoon	Catterini	Padua area	GB-B 496 (Oxford)	C	<i>BB\flat</i>
1810	Bassoon	Caitlin	Hartford CT	US-MI 77.68.1 (Dearborn)	B \flat	<i>C</i>
1813	Bassoon	Uzal Miner	Hartford CT	US-CT 167a + b (Farmington)	B \flat	<i>BB\flat</i>
1825	Bassoon	Marsh & Chase	Calais VT	US-CT (Farmington)	B \flat	<i>BB\flat</i>
1828	Bassoon	Johann Streitwolf	Göttingen	D-GNM (Nürnberg) MIR477	C, B \flat	<i>BB\flat</i>
1838	Straight	Adolphe Sax	Paris	Only basses in B \flat to <i>E</i> survive.	B \flat	Extension to <i>C</i> patented 1838
1841	Straight	Eduard Skorra	Berlin	D-MMUL 1542 (Leipzig)	C	<i>E</i>
1855	Bassoon	Losschmidt	Olmütz	I –CMT 10492 Trieste	B \flat	<i>C</i>
1860s	Half-bassoon	Georg Ottensteiner	Munich	D-GMN, no. 79-28	B \flat	<i>C</i>
1860s	Bassoon	Ludwig & Martinka	Prague	CZ-CMM E135	C	<i>C</i>
1860s	Bassoon	Johann Stengel	Bayreuth	D-GNM (Nürnberg) MIR479	B \flat	<i>C</i>
1838	Bassoon	Catterino Catterini	Bologna	GB-Oxford 496	C	<i>C</i>
1853	Straight	Anton Nechwalsky	Vienna	USA-Smithsonian	B \flat	<i>BB</i>
1870	Bassoon	C. Kruspe	Erfurt	CH-HMB 1999-136 Basel	B \flat	<i>C</i>
1870s	Straight	C. Kruspe	Erfurt	D-MMUL 4479 (Leipzig)	B \flat	<i>E\flat</i>
1906/7	Straight	Heckel	Biebrich	D-GNM (Nürnberg) MIR.480	B \flat	<i>E\flat</i>

CHAPTER 4

ORIGINAL DOCUMENTS RELATING TO THE USE OF THE BASS IN A

Treatises on orchestration

Orchestration treatises were used even by distinguished composers as part of their education and as reference. The purpose of this section is to discover what influences these manuals could have had upon composers with respect to the selection and use of the bass clarinet in A.

The earliest manual consulted was that of Logier (1827). This was used by the young Wagner (Millington et al. 2009). However, though an excellent tutor on harmony, counterpoint and thorough bass, it contains nothing on orchestration. Other manuals consulted were limited to those written near or after the introduction of the bass clarinet in A by Wagner in 1848.

Berlioz (1843 and 1856, 114) discusses the use of the bass clarinet in some detail. He does not mention the A instrument:

The bass clarinet, lower still than [the alto clarinet] is an octave below the clarinet in B \flat ; there is another in C, however ... but that in B \flat is much more usual.

After discussing the improvements made by Adolphe Sax he states (p. 116):

The bass-clarinets of M. Sax are in B \flat .

He discusses the relative tone and timbre of the C, B \flat , A, A \flat , E \flat , and F (low and high) clarinets in much detail (p.206):

Generally, performers should only use the instruments indicated by the composer. Since each of these instruments has its own particular character, it may be assumed that the composer has preferred one or the other instrument for the sake of a definite timbre and not out of mere whim.

In Strauss' revision and extension of this treatise (Berlioz and Strauss, 1904, 222) the above text is unchanged. Strauss adds that it is no longer necessary to change clarinets for facility of execution (p. 206) but he makes many remarks on the different sound characters of the different instruments. Strauss does not remark on any differences between the bass clarinets.

He also says (p.206):

The new clarinets in B \flat and bass clarinets have a C \sharp key [written E \flat]. Bass clarinets in A are now used very rarely; one frequently has to transcribe them in B \flat .

He also adds:

Wagner always used the bass clarinet in the character of solemn resignation ...

The examples that he gives are from *Tannhauser* and *Tristan und Isolde* – both of which use the bass clarinet in A.

Gassner (1849) also discusses the tone of the B \flat , A, A \flat , E \flat , and F (low and high) clarinets in comparison with the 'ordinary' C clarinet. He only mentions the bass clarinet as an alternative name for the basset horn when fitted with a low range.¹²

The earliest reference known to a bass clarinet in A appears in Porteous (1854) in *The Composer's Musical Atlas ... of every instrument employed in Orchestral Bands*. He states (front page, unnumbered) after briefly describing the C, B \flat , A \natural clarinets and the B \flat bass,

A \natural Bass Clarionet. This is an instrument commonly used in Germany, and stands an octave lower than the A \natural Clarionet.

¹² Einige nennen das Bassethorn auch F-Clarinette, weil es in F steht, auch Baß-Clarinett, weil es mit die Discantönnen der Clarinette auch tiefere Basstöne verbindet.

It is remarkable that the instrument became 'commonly used' in Germany so soon after the first performance of *Lohengrin* in 1850. Was it already available? Although Porteous was a band master (to the Royal Military Asylum, Chelsea), the '*Composer's Atlas ...*' is aimed at orchestral writing as shown by the inclusion of string instruments. The 'A \natural Bass Clarionet' appears in all his tables of pitches of orchestral instruments in various keys, and in the table of 'different clarionets in use on the Continent' so he is quite definite about it. He adds

But it must be understood, when writing for an orchestra, that the only clarionets practically useful are the C, B \flat , A \natural and B \flat Bass Clarionets, and no others are in common use.

The most influential composition manual in German was, according to citations by subsequent authors such as Prout (1899, Preface) that by J.C. Lobe (1858). However, it is concerned solely with harmony, form, thematic structure and development and not with orchestration.

Along with Lobe, the manual by Gevaert (1863) was cited by most subsequent treatises. It has a full discussion of clarinets, their tonalities and the characteristic sounds of each, pointing out (p.55) an unusual example by Meyerbeer in *Les Huguenots* of a duet between a clarinets in B \flat and A. He says (p.56, note 2) that some virtuosi use the B \flat instrument exclusively, transposing parts in C and A (but being unable to play the low written *e* on parts written for the instrument in A). Concerning the bass clarinet, however, he does not appear well informed, even though he is writing some fifteen years after *Lohengrin* (p.60):

The bass clarinet is occasionally used in the orchestra, and almost always in a solo.¹³

¹³ La clarinette-basse est exceptionnellement employée à l'orchestre et Presque toujours en solo.

The example he gives of the perfect way to write for the instrument is the solo from *Les Huguenots*, written almost thirty years earlier. His discussion is confined to the B \flat instrument.

He mentions the existence of the C instrument in the supplement (p. 219) but admits that it is not directly known by him. He makes no mention of the bass in A. He also advises (p.59) that

When making use of the bass clarinet, it is good to include only one ordinary clarinet : in most orchestras there is no special performer for the bass clarinet.¹⁴

Taken together with other instrumentation manuals, this is an indication that the bass clarinet was not so well established in French as in German orchestras, despite Meyerbeer's pioneering use.

Rimsky-Korsakov (1891) contains many perceptive observations about the tone colour of bass clarinets and all other woodwinds, but does not distinguish between A and B \flat clarinets (though he mentions the existence of both tonalities in both soprano and bass).

Professor Henri Kling of Geneva wrote his *Modern orchestration and instrumentation* in 1883, Kling (1883), and produced a revised, enlarged and translated edition in 1905 (Kling 1905).

The latter does not significantly alter the discussion of the clarinets, which concerns the tonality of the soprano clarinets, their use in different keys and the differences in their tone colour from 'hard but brilliant' of the C clarinet, 'soft and at the same time, brilliant' B \flat to the 'soft, melancholy, tonal quality' of the A . He does not so distinguish the sounds of the bass clarinets, but nor does he contradict the distinctions between the soprano clarinets. He states, in both editions,

¹⁴ Quand on fait usage de cet instrument, il est bon de n'écrire qu'une seule partie de clarinette ordinaire : dans la plupart des orchestres il n'y a pas d'exécutant special pour la clarinette basse.

Three varieties of bass clarinets are in use, in C, B \flat and A, which sound an octave lower than the ordinary clarinets

He quotes the Meyerbeer solo, and is also aware of the use made by Wagner and Berlioz. He also wrote a short monograph on transposition (Kling, 1885) in which he gives tables and guides for transposition (mentioning (p. 13) that a whole orchestra might have to do this at sight if the singer wants the part down a semitone or more (!), so this must be part of their training),¹⁵ but does not include the bass clarinet in A in his tables.

Corder's book (1896) is named *The orchestra and how to write for it*. The introduction makes it clear that it is aimed mainly at the writer and arranger for theatre bands and wind bands. The discussion of the clarinet (p.42) contains the usual advice on tonalities (write for the B \flat instrument in flat keys and the A instrument in sharp keys) and states (p.42):

The [C clarinet] has rather a hard, cold tone; it has now fallen into disuse.

He thus shows an awareness of clarinet tonalities. In the discussion in the appendix on the bass clarinet, he speaks with familiarity of the bass in A (p.48):

The [bass] in C is not used, though there is no reason for its neglect, except that the B \flat and A instruments are sufficient for ordinary purposes.

Ebenezer Prout wrote two significant manuals. The undated Prout (pre 1909) on

Instrumentation is a primer for music students and composers. The soprano clarinets are treated in detail, including the choice of tonality (p.65). Even at this late date, composers are

¹⁵ Es kommt sehr häufig vor, das seine Sangerin oder ein Sanger, aus irgend einem Umstande diese oder jene Arie transponieren will. die Orchestermitleider mussen die Begleitung vom Blatt transponieren. Es ist demnach fur jeden Musiker, der sich dem Orchester widmen will, eine absolute Notwendigkeit, das vom Blatt transponieren recht zeitig und grundlich zu studieren.

taught not to write in keys containing more than two flats or sharps. But he goes on to point out that this still leaves choices between the clarinets in C, B \flat and A in certain keys, and in these instances the choice should be made on the character of the sound desired:

Each clarinet has its own distinctive quality of tone.

The bass clarinet is treated rather briefly (p.103). He advises students to abstain from writing for it 'as its introduction into the orchestra is not yet general' but he points out that Wagner uses it freely (referring to *Lohengrin* and the *Ring*) and employs basses in A as well as B \flat .

His more comprehensive two-volume treatise *The Orchestra* (Prout 1899, 147-175) does not contain any additional technical information, but includes many musical examples, including those of the bass clarinet in A from Wagner's *Die Walküre* and Liszt's *Dante Symphony* (pp. 170-171). It includes interesting discussions on how to use clarinets and bass clarinets in combination with other instruments.

Charles Marie Widor wrote his *The technique of the modern orchestra* in 1904, and it was soon translated into English (Widor, 1906). He says (p. 37)

The Bass Clarinet is written like the B \flat or A clarinet, but sounds an octave lower; and the illustrations of compass that follow this make clear that he considered both tonalities to be available. He shows familiarity with Wagner and Liszt's works that include the bass in A, but makes no comment on the distinction between these instruments. However, in discussing soprano clarinets (p. 29) he discusses tone colour, and is also adamant that the keys used should not be too extreme:

However, when the Clarinet is required to play bravura passages, care must be taken not to increase the difficulty by writing in extreme keys – C, F, G, B \flat and their relative keys are excellent, because they are easy; with D major and E \flat major difficulties begin.

He shows that in *Die Walküre*, Wagner only twice used keys with three or four sharps or flats for the clarinets, then only for a few bars where there was not time to change instruments, and was careful only to write simple parts in those bars. The implication is that basses in A and B \flat should be used in just the same way (with respect to key) as the soprano instruments. By this time therefore the bass clarinet in both tonalities was fully integrated into the French school.

The German school of this period is illustrated by Salomon Jadasson, lecturer at Leipzig, in his *Lehrbuch der instrumentation* (Salomon 1907). After describing the B \flat bass, he points out (p. 234) that Wagner also used the A bass. He concludes by saying (p. 235):

In recent times the bass clarinet is found at home in all the large orchestras, but one can generally count only on the instrument standing in B \flat .¹⁶

The best known orchestration manual of the early twentieth century after that of Berlioz and Strauss is Forsyth (1914). He devotes considerable space to the bass clarinet. On the question of tonality he states (p.273):

Bass-Clarinets were formerly built on the analogy of the ordinary Clarinet, both in B \flat and A. The lower-pitched instrument, however, has not proved itself to have any great advantages beyond the possession of the extra low semitone. It has consequently dropped out of use, and, except in Germany, is practically unknown.

And, in discussing the *Tristan* usage (p.276):

¹⁶ In neuerer Zeit ist die Baßklarinetten in allen größeren Orchestern heimisch, doch wird man meist nur auf solche Instrumente rechnen können, die in B stehen.

The *Obbligato* part in this passage is written for Bass-Clarinet-in-A, and as it touches the bottom note – the low E \flat sounding C# (D \flat) – needs that instrument for its correct performance.

At that time, bass clarinets in A and B \flat with low written E \flat were certainly available on the market, and use of the bass in A was continued by Respighi, Ravel, Rachmaninoff, Bax, Ireland and Messiaen as well as by German composers.

Evans (1926) is a concise, practical manual, which contains the statement (p.39)

Of the bass clarinet there are three types; but one of these, the pedal clarinet, is rarely, if ever, seen; notwithstanding that it is always well spoken of. The other two correspond to the ordinary clarinets in A and B \flat an octave lower.

He does not include the bass in A as a variety that was ever in the military band.

Composers' letters

The collected letters of the nineteenth and early twentieth century composers known to have composed for the A bass have been searched to discover references to the bass clarinet in A. These comprise the letters between Liszt and Wagner, letters of Wagner to theatre directors and conductors, and letters of Mahler and Strauss.

Letters from Liszt to Wagner of 1850

Two letters concern the preparation for the original performance of *Lohengrin* in Weimar in 1850.

Wagner, Liszt and Hueffer (1897/1, letter 34 p. 56):

And a bass clarinet has been purchased.

Wagner, Liszt and Hueffer (1897/2, letter 36, p. 62).

We have ordered a bass clarinet, which will be excellently played by Herr Wahlbrul.

Letter from Liszt to Wagner of December 29, 1853

This letter concerns the preparation for the performance of *Lohengrin* in Leipzig on January 7 1853. (Wagner and Liszt 1897/1, letter 142; p 244).

Probably the performance will not take place for a few days; at present nothing can be settled, because now Elsa, now the King or Telramund, is ill, or because the bass clarinet ordered from Erfurt has not arrived; and when it does arrive at Leipzig, it is not certain whether the clarinet-player there will be able to play it, etc. etc.

Only C. Kruspe is listed in Waterhouse (1993, 456) as a woodwind instrument makers working in Erfurt at that time. Kruspe is already identified as maker of one of the extant (but later) bass clarinets in A listed in chapter 3. This letter is strong evidence for C. Kruspe of Erfurt being the supplier of the bass in A for the Leipzig performance. However, in both cases Liszt speaks of ordering a (singular) bass clarinet, not a pair in B \flat and A, which *Lohengrin* requires. Did they already possess a bass in B \flat , or did they play everything on one (bassoon-type?) clarinet, transposing the other parts?

Letter from Richard Wagner to Heinrich Esser of June 15 1861

This letter (quoted in Holde, Mendel and Wagner, 1941) concerns a performance of *Tristan* in Vienna, which Esser would conduct:

Now, I should like to remind you that a bass clarinet in A must be obtained. We spoke about this once: I know that in many places, particularly in Dresden, this instrument was used in *Lohengrin* in addition to the bass clarinet in B-flat, and what the player there could accomplish must be possible in Vienna too. They wrote to me at the time from Dresden that they had obtained this A clarinet from an instrument-maker somewhere

on the Rhine - I don't know whether it was in Darmstadt or where. Have the goodness to find out about this!

This is the first direct evidence - which has not been cited in the secondary literature so far - that an important composer considered the tone quality of the A, or perhaps the smoothness of fingering in an easy key, essential, not merely the range; for there would be no point in his statement if he would allow the concert D \flat to be played on a B \flat instrument. It is also the first evidence that a bass in A was actually used in a *Lohengrin* performance. According to Holde, the instrument-maker referred to in the quotation was probably Johann Adam Heckel of Biebrich, who later met Wagner and *inter alia* constructed the wooden trumpet for *Tristan*. Unfortunately, no relevant records have yet been found in their museum (email from Edith Reiter of Heckel, 5 September 2009)

There is no mention of bass clarinets in the extensive correspondence between Mahler and Strauss (Mahler, Strauss and Blaukopf 1980).

Court and orchestra records

While most players owned their own soprano clarinets, the bass instruments were often owned by the court or theatre, especially in the early days of their use. Occasionally one finds inventories of court or orchestra sets of working instruments. These are discussed in Tremmel (1993). There was an inspection of the instruments of the Bavarian Court by the General Music Director Franz Lachner on 30 August 1867 (Tremmel 1993, 214).

Georg Ottensteiner made these instruments for his friend Baermann, "a B \flat - Clarinet [...]" with it [as a set] "an A and a C clarinet [...]" a "mouthpiece [...]", and an "A-bassclarinet", in addition to that he converted the old A-bassclarinet into a B \flat -

bassclarinet and delivered a "mouthpiece for the A- and B-Bassclarinet [...] and a "bassethorn ...".¹⁷

(tr. Heike Fricke; descriptions of materials omitted from translation)

Conversion of a bass in A to one in B \flat at the same pitch is not practical. The length to any tone hole is about 5% difference, i.e. 50 mm towards the bottom of the instrument. All the tone holes and post holes would need filling and redrilling, most of the keywork would need shortening or remounting, and a new neck would be needed. However, the passage makes sense if the 'old' bass clarinet was made at the pre-1866 pitch, approximately a semitone higher (Tremmel, 1993, 214; see page 74). It would then be close to a B \flat clarinet in the new pitch, and require only minor tuning adjustments. This is strong evidence for the earliest bass clarinet in A being constructed before 1866, though we cannot assume that it was Ottensteiner. We do know directly of (Carl) Baermann's virtuosity, from contemporary sources and from his famous tutor, which is still in print (Weston 1971, 150). Without doubt he could have played any of the Wagner parts on any bass clarinet having the range, yet he found it worthwhile to repeat his experience of playing a bass in A, as well as in B \flat , after the pitch change in Bavaria.

¹⁷ Von Georg Ottensteiner stammten die Instrumente für seinen Freund Baermann, "eine B Clarinette (System Bärmann) von braungebeiztem Buchs), Klappen und Garnitur von Silber" (160 fl.), dazu je "eine A und C clarinette von braungebeiztem Buchs, Klappen und Garnitur von Neusilber" zu je 100 fl, ein "Mundstück zu den obigen drei Clarinetten mit Mechanik und Auflage von Silber" zu 22 fl, "eine A Baßclarinette, Klappen und Garnitur von Neusilber" des weiteren arbeitete er für 30 fl die alte A-Baßclarinette in eine B-Baßclarinette um und lieferte für 7 fl "eine Mundstück zu der A und B Baßclarinette mit Silberauflage" und "ein Bassethorn ..."

Patents

At first sight, the enormous patent literature on the clarinet would appear to be important, but this does not stand up. Patents tell one what was invented, in the form of a concept and design, and hence what could have been made. They do not tell one what was actually available. Two examples illustrate this reasoning. The Belgian patent No. 1051 in 1838 by Adolphe Sax for his improvements to the bass clarinet illustrates an alternative upturned bell with tone holes placed so as to extend the range downwards to C. None of the eleven surviving instruments stamped by or attributed to Sax have this feature and it is not mentioned in the contemporary literature, nor written in orchestral music until Strauss' *Tod und Verklärung* (1889). We cannot be sure that any of Sax's instruments possessed this range. The other is the 22 July 1853 Austrian patent of Anton Nechwalsky. The fact that he designed and made a bass with an extension to C is proven by the surviving B \flat instrument in the Smithsonian Institute, No. 67269. However, his addendum of 3 October 1853 stating that he could supply these instruments standing in C, B \flat or A is unsupported, since the Smithsonian example is his only known extant instrument. The patent literature is therefore not a useful source for this dissertation.

Manufacturers' Documents and Records

These are a valuable source of information on the types of clarinets available at different periods. As the possibility emerged that commercial, rather than musical, reasons played the largest part in the decline of the bass in A, documents that could test this idea were sought.

Again one does not quite know whether advertised instruments were actually made, but in this case the advertising of an instrument by a manufacturer – especially one of repute – would enter the perception of composers, players and orchestra directors, and have the effect of making it available to composers.

A list of trade catalogues is published online (Adams, 2009). Documents reviewed have come from the collections of Albert Rice, the Rendall Collection at EUCMI and a report of a similar search in and around Munich by Joppig (2007). The Langwill/Waterhouse archive, now owned by EUCMI but not yet transferred, is expected to add substantially to this list when available for consultation.

As an example, the front page of a catalogue issued by H. Lloyd, the English agent of Heckel, is shown in Figure 4. Although undated, we know from English county records that H. Lloyd (as sole trader) existed 1896 (earliest) and 1900 (latest) (Kelly's 1896, 1900, 1902, 1904, 1912), and the reference to *Königlicher Hof-Instrumentenmacher* (the Imperial as opposed to the Guild licence) shows that the catalogue dates from before 1918, and is overwhelmingly likely to be before 1914 when war broke out. In this catalogue we see that the bass instruments with low A and with extension to low E \flat were available:

The illustration on the right-hand side represents a Heckel-Bassclarinet in A or B flat going down to low E flat with straight short joint (the latter may also be supplied bent upwards).

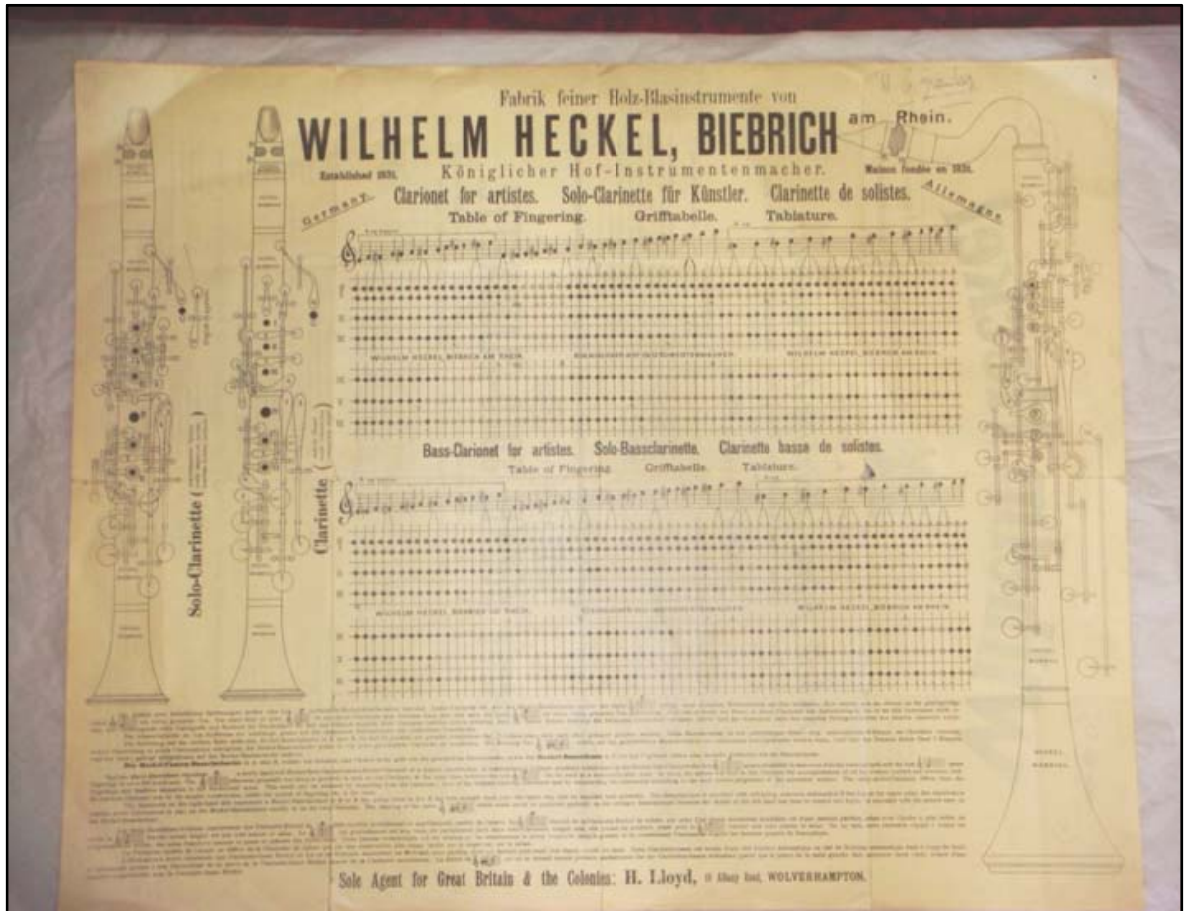


Figure 4: Catalogue of Heckel, dated between 1911 and 1914, issued by their English agent H. Lloyd of Wolverhampton, front page. Rendall Collection, EUCHMI by kind permission of Prof. Arnold Myers. (author)

A Heckel instrument (dated 1906) in B \flat with a low E \flat key is in the Nürnberg museum (D-GNM MIR 480). This key was identified as a resonance key in the catalogue (Bär 2004, 262), but both the dimension/location of the tone hole and the Heckel catalogue identify it as an E \flat key. Heckel ceased manufacture of bass clarinets in the 1960s, delivering the last instrument to London in 1962 (email from Edith Reiter on 5 September 2009).

The manufacturers' records discovered that refer to bass clarinets in A, or to those in B \flat with a low E \flat key are shown in Table 6. Date estimations are explained in a footnote if the catalogue is undated.

Table 6: Manufacturers' catalogues offering bass clarinets in A or in B \flat with E \flat key. Manufacturers' dates include successors in the same business (by inheritance or purchase) (Waterhouse 1993). Reports of a similar study by Joppig (2007) are included with manufacturers' dates added.

Date of catalogue	Manufacturer	Manufs. Dates	Dealer	Instruments	Source
1896	Červený & Sohne Königgrätz in Böhmen	1842-1946	Manufacturer	B \flat and C, apparently to low E	Larigot Feb. 1994
1915-1923 ¹⁸	Schunda V. József Budapest	1848-1944	Manufacturer	B \flat , A	Rendall Collection EUCHMI 2505
1898	Wilhelm Heckel Biebrich am Rhein	1831 - Extant but ceased bass clarinet manufacture in 1962	Manufacturer	B \flat , A	Joppig
c. 1900	Ackermann & Lesser, Dresden	1880-1945	Dealer then manufacturer from 1905	B \flat , A	Joppig
1900 – 1910	Agostino Rampone Milan	1850-1950	Manufacturer	B \flat , A to E \flat Boehm and Barret systems	A. Rice collection
1906	Wilhelm Heckel Biebrich am Rhein	v.s.	Manufacturer	B \flat , A and C, to (options) low E, E \flat or D	A. Rice collection
c. 1910	Oscar Adler Markneukirchen	1880 - 1950	Manufacturer	B \flat , A	Joppig
1911	Berthold & Schwerdtner Stuttgart	1849 - 1937 ¹⁹	Manufacturer	B \flat , A	Joppig
1896 – 1914	Wilhelm Heckel, Biebrich am Rhein	v.s.	H. Lloyd, Wolverhampton England	B \flat to low E \flat A to low E \flat	EUCHMI, Rendall Collection
1916	Couesnon	1882-c.1950	Manufacturer	B \flat , A	Joppig
May 1921	A. Rampone & B. Cazzani & C. Milan	1850-1950 Successor to Rampone	Manufacturer	B \flat , A to E \flat Boehm and Barret systems	A. Rice collection
1922	Buffet Crampon, Paris	Extant	Manufacturer	A, B \flat and C, all to low E (Boehm).	EUCHMI 2574, Rendall Collection
1925	Gebrüder Schuster Markneukirchen	1854 – post 1929 (joined Migma?)	Manufacturer	A, B \flat	Joppig
1926	Georg Bauer Markneukirchen	? Not extant ²⁰		B \flat , A	Joppig

¹⁸ Information from EUCHMI.

¹⁹ Not in Waterhouse (1993) under this name but H. Berthold of Stuttgart d. 1920, and family died out 1937.

²⁰ Not listed in Waterhouse (1993). Possibly became the music publisher in Karlsruhe.

1927	Wilhelm Heckel, Biebrich am Rhein	See above	Manufacturer	B \flat , A	Joppig
1928	Selmer Paris	Extant	Manufacturer	A	Joppig
1930s ²¹	Carl Fischer Band Instrument Catalog Boston, NY, Chicago	Extant (Buffet)	Importer	B \flat only, to E \flat or C as option (Boehm)	Larigot Dec. 2008
1930s ²²	Carl Fischer: sale list of secondhand/ demonstration instruments	Extant	Buffet Instrument in advertisement	A ("with extra C#")	A. Rice collection
1934	Couesnon, Paris	1882-c.1950	Manufacturer	A, B \flat and C, all to E \flat (Boehm) B \flat also German system	Larigot Dec. 2008
Possibly 1930s ²³	G. & A. Klemm Markneukirchen	1851- 1930s (predecessor from 1710)	Manufacturer	B \flat , A and C, to low E, E \flat or C (German system) or E only (Boehm system)	A. Rice collection
1936	Wilhelm Heckel, Biebrich am Rhein	See above	Manufacturer	B \flat , A	Joppig
1962	Migma Markneukirchen	1943 – 1960s	Manufacturers' Consortium	B \flat , A	Joppig
1986	Selmer Paris	Extant	Advertisement	A	Verbal report of announcement of manufacture of bass in A

There was no mention of basses in A or of extended range B \flat instruments in the following catalogues of important manufacturers:

1905	Martin Frères
1910	Besson
1910	Millereau
Pre 1923	Joseph Higham
1923	J.R. Lafleur (Alliance Musicale, London)
1923	Adolphe Sax
Pre-c.1950	Rudall Carte & Co.

²¹ From catalogue style

²² From catalogue style

²³ Clues are the price, 610 DM, and the stamp PRICES CANCELLED! Possibly the German hyperinflation period in early 1930s.

1950s

Leblanc

In addition, we have the dates of the makers of basses in A listed in Table 3. These are:

C. Kruspe	Erfurt	1829-1930
C. Kruspe Jr.	Leipzig	1893-1929
Stecher	Vienna	1865-1950
C.W. Moritz	Berlin	1835-1955
G. Ottensteiner	Munich	1838-1879
Ottensteiner's successor Hess	Munich	1895
Wilhelm Heckel	Biebrich	Ceased b.c. in 1962
Fritz Wurlitzer	Neustadt	No current record of b.c. in A

We see that the bass instruments in A were quite readily available at least until the 1930s.

The *E♭* key was common in the 20th century and occasionally found in the 19th century on straight types and always on bassoon types. *C* was occasionally seen in the 19th century on straight types, and then regularly from the 1930s. Instruments with *D* were available from 1906.

It is seen that since the 1960s, **all** the manufacturers formerly offering A instruments in their catalogues are either no longer in existence or have ceased production of basses in A.

There is some direct evidence from manufacturers. Kalina (1972) reported that Buffet-Crampon introduced the extension to *C* in 1920, and after periods when they did not offer this instrument, recommenced in 1931 and again in 1954 (letters from Jean Blondelet to David Kalina of February 21 1969, July 10 1968 and February 21 1969, cited in Kalina (1972, 205). H. and A. Selmer introduced a low *C* model in 1930 (letter from Jean Selmer to David Kalina of April 3 1969, cited in Kalina 1972, 205) and gradually increased production to the present day. Boosey and Hawkes began manufacture of low *C* instruments in 1946 (letter of Brian Martin-Myatt to Eric McGavin of September 29, 1967, cited in Kalina 1972, 205). Motivation for such

instruments was not only the parts written for basses in A, but also those written for B♭ instruments by Russian composers (e.g. Shostakovitch) using still lower notes.

Most major German orchestras insist that their clarinetists use Wurlitzer instruments.²⁴

Enquiries were made of the Wurlitzer company, founded in 1892 and still flourishing under the fourth generation, Bernd Wurlitzer. He informed me (email of 24/8/09):

Bass clarinet in A: Our family never build one. We also do not know anyone else. Maybe in Austria.

He was most interested to learn of the instrument in Berlin SifM made by his grandfather.

Selmer has provided most of the current working bass clarinets in A. Jérôme Selmer (email of 14 September 2009) wrote:

We never had a bass clarinet in A in our catalogue. We just made a few a long time ago, around 20 years.

We never decide to go [into] production in series because the investment is not valuable compared to the quantities required by our customers. Unfortunately, we don't have records of basses in A made by Selmer or anyone. For your information we produce approximately 350 Bass clarinets per year.

There is thus a compelling argument that market forces have been decisive in the decline of the bass clarinet in A.

²⁴ "Wurlitzer clarinets are played in all German and in many International Symphony-, Opera- and Radio-Orchestras." (Wurlitzer 2009)

CHAPTER 5

MUSIC FOR THE BASS CLARINET IN A

This chapter comprises a catalogue and study of the music that has been discovered, my experience and recordings of playing a bass in A and interviews with professionals.

Catalogue of works

Table 7 shows a list of fifty-eight works found that use the bass clarinet in A. All have been studied, using critical or early editions where accessible, as cited in the Bibliography.

Composition dates are taken from the composers' entries in Grove Music Online.

Table 7. List of works known using the bass clarinet in A.

	Surname	Title of work	Opus # (etc)	Date of composition.
1	Bartók	Dance Suite No. 1	Opus 4	1905 rev. c. 1920
2	Bartók	Dance Suite No. 2	Opus 4	1907 rev. 1920, 1943
3	Bartók	Miraculous Mandarin	Op. 19	1924
4	Bax	Spring Fire		1913
5	Bax	Symphony No. 1		1922
6	Bax	Symphony No. 2		1926
7	Bax	Symphony No. 4		1931
8	Bax	Symphony No. 5		1932
9	Bax	Symphony No. 6		1934
10	Berg	Sieben Früher Lieder		1907 orch. 1928
11	Bülow, von	Nirwana	Op. 20	1870
12	Copland	Dance symphony for large orchestra		1925

13	Delius	Paris: a Nocturne (The Song of a Great City)		1899
14	Dvořák	Scherzo Capriccioso	Op. 66	1883
15	Dvořák	The Water Sprite	Op. 107	1896
16	Dvořák	The Noon Witch	Op. 108	1896
17	Dvořák	The Wild (or Wood) Dove	Op. 110	1896
18	Elgar	Pomp & Circumstance March No. 2	Op. 39 no. 2	1901
19	Elgar	Pomp & Circumstance March No. 1	Op. 39 no. 1	1901
20	Ireland	Symphonic Rhapsody Mai-Dun		1933
21	Liszt	Dante Symphony	Raabe 426	1855-6
22	Mahler	Symphony No. 4		1892, 1900 + revs. To 1910
23	Mahler	Symphony No. 5		1902 + revs.
24	Mahler	Symphony No. 6		1904, 1906+revs.
25	Mahler	Symphony No. 7		1905 + revs.
26	Mahler	Symphony No. 8		1907
27	Mahler	Das Lied von der Erde		1909
28	Messiaen	Turungalîla-Symphony		1948 rev. 1990
29	Puccini	La Bohème		1896
30	Puccini	Tosca		1900
31	Rachmaninoff	Symphony No. 2	Opus 27	1907
32	Rachmaninoff	Symphony No. 3	Opus 44	1936 rev. 1938
33	Rachmaninoff	Symphonic Dances		1940
34	Ravel	La Valse		1920
35	Ravel	Concerto for the Left Hand		1930
36	Ravel	L'Enfant et les Sortilèges		1925

37	Ravel-Mussorgsky	Pictures at an Exhibition		1922
38	Respighi	Fountains of Rome	Op. 106	1916
39	Rimsky-Korsakov	The Maid of Pskov		1872
40	Rimsky-Korsakov	Mlada		1872
41	Rimsky-Korsakov	The Legend of Tsar Saltan		1901
42	Rimsky-Korsakov	The Legend of the Invisible City of Kitesh and the Maiden Fevroniya		1903
43	Rimsky-Korsakov	The Golden Cockerel		1907
44	Schoenberg	Pelleas und Melisande	Op. 5	1911
45	Schoenberg	Kammersymphonie	Op. 9	1912
46	Schoenberg	Gurre-Lieder		1901 orch 1911
47	Strauss	Sonatine No. 1 für Bläser (Aus dem Werkstatt des Invalide)		1943
48	Strauss	Rosenkavalier		1910
49	Sullivan	The Golden Legend		1886
50	Tchaikovsky	Nutcracker Ballet	Opus 71	1892
51	Verdi	Otello		1887
52	Wagner	Lohengrin		1848
53	Wagner	Die Walküre		1852 -1856
54	Wagner	Tristan und Isolde		1857-1859
55	Wagner	Das Rheingold		1853 - 1862
56	Wagner	Siegfried		1856-1869
57	Wagner	Gotterdammerung		1869-1874
58	Wagner	Parsifal		1877 - 1881

How the bass in A was used

The scores have been examined with four questions in mind:

1. Is the usage *standard* (as taught by orchestration manuals: sopranos and bass clarinets in the same tonality, chosen to avoid extreme key signatures, with lowest notes written *E*)?
2. Is there evidence that the bass clarinet in A was employed for its lower bottom note?
3. Was the tonality of the bass clarinet ever chosen *contrary* to standard usage?
4. If so, was this a solo part or one with full orchestration?

Most of the usage is indeed standard. Only one work (by Berg) has been found requiring a bass in A with a lower note than written *E*. The scores will be discussed in roughly chronological order, but for reasons of space not every work in the above list will be discussed, and composers' works are grouped together.

Richard Wagner

Lohengrin (1848)²⁵ was the first work known to use the bass in A; it was also the first in which Wagner used a bass clarinet. The usage is standard, but written with complete confidence and skill. The bass in A is taken from its lowest note *E* up to *f''*, and used in both solo and chordal passages, though it is not employed in the huge climaxes such as the Act III finale and is usually given slow-moving parts.

²⁵ Bibliographic references are found under the composer and the date of composition; dates of the editions used are given in the bibliography.

Wagner also used the bass clarinet in A in *Die Walküre* (1856), *Tristan and Isolde* (1859), *Das Rheingold* (1862), *Siegfried* (1869), *Gotterdammerung* (1874) and *Parsifal* (1881). The usage remains standard, though Wagner now uses it also in major climaxes and rapidly-moving parts. This partly contradicts Strauss' claim (Berlioz and Strauss 1904, 223) that Wagner always used it for indicating 'solemn resignation' as in the solo in *Tristan* accompanying King Mark in Act II Scene 3. Here, the bass in A is in the key of A \flat , rather than the simpler G that would be used for the B \flat instrument. The A instrument could here have been selected for its sound, but also for the 'flat' key. It appears that the key and the requirement for a bass clarinet were the dominant factors in Wagner's choice of instrument. Remarkably, he had not heard *Lohengrin* before composing *Tristan* and *Walküre*.

Franz Liszt

Eine Symphonie zu Dante's Divina Commedia (1859) is the next work after *Lohengrin* and *Die Walküre* to use bass clarinet in A. The usage is unusual. In *Inferno*, he uses two soprano clarinets in B \flat and a bass clarinet in A. French notation is used, with no key signatures. There is a prominent solo recitative on the bass in A, descending to written E (p. 57), the A probably being chosen for the key. In four places in *Purgatorio* (pp. 147 and 189) the line for the B \flat bass descends to written E \flat . Possibly, Liszt had available a bassoon-type B \flat bass with a lower range, and an A instrument with a conventional range to E. We note that Raff's claims that he co-orchestrated Liszt's works are unsustainable (Raabe 1931, cited in Walker 2009).

No bass clarinets in A are used in Liszt's other orchestral compositions of the period, the twelve Symphonic Poems.

Hans von Bülow

Von Bülow was important as a conductor and as pupil and friend of Wagner and Liszt in his young life and of Richard Strauss in his elder years. All used the bass clarinet in A. In *Nirwana* (1870), the soprano and bass clarinets are appropriately in A throughout. There is a significant passage at p. 75-6 of the score (Figure 5; German notation). It is clear from the scoring of bassoon, first clarinet and second oboe that the passage would preferably start on the low written *D* of the bass and *d* of the second clarinet. These notes have been transposed up an octave, indicating that written *D* was also unavailable on the bass clarinet, implying that the modern straight form down to *E* was the composer's expectation in 1870.

The image shows a musical score excerpt for four instruments: Oboe, Clarinet in A, Bass Clarinet in A, and Bassoon. The music is in 4/4 time with a key signature of two sharps (F# and C#). The Oboe part is in the treble clef, while the other three instruments are in the bass clef. The notes are marked with a forte dynamic (f). The passage consists of two measures, with the first measure containing a half note and the second measure containing a half note. The notes are transposed up an octave from their original written positions.

Figure 5: The passage from von Bülow, *Nirwana*, containing the lowest notes used in the bass clarinet part.

Rimsky-Korsakov

Rimsky-Korsakov used the bass clarinet in several operas: *The Maid of Pskov* (1872),²⁶ *Mlada* (1872), *The Legend of Tsar Saltan* (1901), *The Legend of the Invisible City of Kitesh* and the

²⁶ Only the overture score could be located; the bass clarinet is indicated in the first bar as 'Sib' rather than in the instrument name, which normally indicates that both B \flat and A will be used.

Maiden Fevroniya (1903) and *The Golden Cockerel* (1907). He employs bass clarinets in both B \flat and A in standard usage; he also sometimes wrote the clarinets in a simpler key and added accidentals (e.g. in *The Golden Cockerel*, Act III, beginning, written in C rather than the correct key of A \flat ; this practice dates from at least Mozart (Leeson and Levin 1998).

Antonin Dvořák

In *Scherzo Capriccioso* (1883) both B \flat and A are scored, mostly in standard usage. Sometimes, all instruments are written for in the key of C with accidentals. At bar 763 the bass in A is chosen when the key is E major, against soprano clarinets in B \flat . The passage has chords from wind and horns that are low in their tessiturae, and Dvořák used the low concert D \flat for these and the final chord.

Dvořák used the bass in A in three of his late orchestral tone poems. In *The Water Sprite* (1896), the instrument is tacet until very near the end. Then, the bass clarinet in A enters in a solo passage doubled by cor anglais, in a mournful coda, after the murder of the child by the evil sprite. The lowest note is only written A. The passage is just 17 bars, with the instrument playing in F major; it is exactly the right choice for the key and for the sound required. The usage in *The Wild Dove* and *The Noonday Witch* is standard, and in these the instruments are used throughout, with prominent solo passages on the bass in A. Bass clarinets are not used in either *The Golden Spinning Wheel* or *The Hero's Song*.

Sullivan, Arthur (1886): The Golden Legend

The bass clarinet is in A throughout in standard usage. Again we find simplified key signatures plus accidentals, for example in Scene 6 where the key signature of B on the bass clarinet is avoided. It appears that Sullivan knew that clarinetists disliked key signatures too far removed from C major (after all, his father was a professional clarinetist (Hughes 1960, 105)). but did not want to call for an additional bass clarinet. The passages are not difficult on either clarinet.

Interestingly, Sullivan was friendly with Liszt. He met him socially as a student in 1859 in Leipzig, escorted him around London on his last visit in 1885 (Silverman 1975), and at Liszt's request conducted *The Legend of St Elizabeth* instead of the then-frail composer. According to Silverman,

That the Golden Legend manifests substantial Lisztian influence is without question.

Liszt had composed a setting of the same poem by Longfellow in 1857 (*Die Glocken des Strassburger Münsters*). Sullivan followed the tradition of Liszt and Wagner in using the bass clarinet in A. This was not noticed by Hughes (1960, 107) who stated:

In *The Golden Legend* he went astray by including another virtually obsolete affair the bass-clarinet in A ; moreover, he took it down to its bottom note (E sounding C#), which is theoretically outside the range of the standard bass-clarinet in Bb, although nowadays some are, fitted with an extension.

The other 'virtually obsolete' instrument referred to is the clarinet in C. Though these instruments were virtually obsolete at the time of Hughes' writing in 1960, they decidedly were not at the time of composition.

Giuseppe Verdi

Verdi (1887) used the bass in both B \flat and A ('clarone' in original score) for restricted passages in *Otello*. He had previously used the bass in C in *Ernani*. Usage is generally standard; he does not always change from the B \flat bass whenever the soprano instrument changes, but when the A bass is called it has important phrases ending on the low written E (never lower, despite the availability of lower notes on Italian 'glicibarifoni').

Petr Illyich Tchaikowsky

Tchaikovsky used the bass clarinet in three works. In *Voyevoda* (symphonic ballad) (Tchaikovsky, 1868) and *Manfred* (Tchaikovsky, 1885) the bass clarinet has an important part, but is in B \flat throughout, even when its key is E and soprano clarinets have changed to A instruments. However, it is called for in A in several scenes in the *Nutcracker Ballet* (1892). Treatment is generally standard, but for the concert key of G and D in numbers 11 and 14, he chooses the B \flat bass in A and E rather than the A bass in B \flat and F, even though the soprano clarinets are in A in these examples. The orchestral writing is very full and there is no obvious reason for this choice other than the desired key.

Giacomo Puccini

Puccini used the bass in A in several operas, for example *La Bohème* (Puccini, 1896), *Manon Lescaut* (Puccini, 1893) and *Tosca* (1900). The usage is standard with the exception of delayed changes when there was no time to change instruments. By *Turandot* (1924 – completed after his death by Franco Alfano) he used only the bass in B \flat .

Frederick Delius

Delius (1899) used basses in A and B \flat in *Paris: a Nocturne (The Song of a Great City)*. Texture is light and the bass clarinet has many prominent passages. There are several points where the soprano clarinets are in B \flat and the bass is in A. In each of these, the A plays down to the low E. Although the main selection is for the key, the low note was also a determinant of the choice of bass clarinet. I have not found bass in A in other Delius works; in *Irmelin* (Delius, 1892) for example, he uses the B \flat bass even in the key of D \flat .

Elgar, Edward (1901). Pomp and Circumstance Marches Nos. 1 and 2.

Elgar used the bass in A in the first two of these marches, and that in B \flat for the later ones. The usage is standard. The lowest note of the bass part in Nos. 1 and 2 is F, so it could have been played on a B \flat bass. The bass part is orchestral, so it is unlikely that the instrument tonality was selected for its sound. Elgar was certainly influenced by Sullivan, as discussed by Taylor (2002). His daughter is quoted (Baily, 1952, 266, citing a letter from Carice Elgar-Blake to himself) as saying:

My father always spoke with great feeling and respect for Sullivan, and admired *The Golden Legend*.

It is likely therefore that he simply regarded the use of the bass in A as normal.

Gustav Mahler

In *Symphony No. 1* (1888), *Symphony No. 2* (1894) and *Symphony No. 3* (1896), the bass clarinet is kept in B \flat and does not play when the music enters very sharp keys. In *Symphony*

No. 4 (1892), bass clarinets in B \flat and A are called. At times, Mahler uses simultaneously clarinets in C, E \flat and B \flat , indicating that he chose the tone colour of the clarinets carefully. Until the last movement, the usage is standard. However, the solo passage for the B \flat bass at the end of the work is a significant anomaly (Figure 6). The key signature for the A bass would have been G, much simpler than the actual F# for the B \flat bass. There was plenty of time to change instruments. This choice survived Mahler's many revisions and corrections, and it must be concluded that he did not want the A bass for this particular solo.

Figure 6: Gustav Mahler, *Fourth Symphony*, the closing bars. Key signature of C used for both parts.

Mahler also used basses in A in symphonies 5, 6, 7 and 8 and in *Das Lied von der Erde*. In *Symphony No. 5* (1902) the usage is standard, but there are only two short passages for the bass clarinet, in A in No. 1 and in B \flat in Movement 2.

In *Symphony No. 6* (1904) there is a B \flat bass in Movement 1, which changes to A bass at RN19 while soprano clarinets stay in B \flat . The key is A \flat for the bass in A, but the intention is clearly to

double a prominent line in the bassoons and contrabassoon which go down to concert C#, after which the player reverts to the B \flat bass. There are several other short changes to A for its bottom note in this symphony, each time in an awkward key such as G \flat : Movement 1 RN24, RN28, RN36+5; Movement 2, RN63 in readiness for RN59; Movement 3, between RN77 and RN78; Movement 4, four bars before RN108. Usage is otherwise standard, and the choice of A bass does not appear to be dictated by solo passages.

In *Symphony No. 7* (1905) the usage is largely standard, but again the A bass is used in Movement 5 (while sopranos remain in B \flat) for a long bottom E tonic pedal together with the bassoons and celli. In *Symphony No. 8* (1907) both A and B \flat basses are used, and the only (brief) departures from standard practice in Part 1 are when there is no time for the clarinets to change. In the long Part 2, all clarinets are kept in B \flat even though this necessitates extreme keys such as D \flat or C#.

In *Symphony No. 9* (1909), Mahler dispenses with the bass in A, but writes down to written E \flat for the bass in B \flat (for example in Movement 1, sixth bar of RN6). One might think he had by now abandoned the bass in A for the extended B \flat model; however, in his last major work, *Das Lied von der Erde* (1909), there is a short passage for A bass at RN41 in the last movement, at which the soprano clarinets remain in B \flat . The bass is now in G \flat ; the low written E is used for a solo group together with the bassoons and contrabassoon, but in light of his knowledge of the extended B \flat instrument, this may be a desire for the instrument to be playing in a flatter key.

The bass in B \flat is resumed at a suitable break. Of course, it is also possible that this was due to local instrument availability.

Mahler's use of the clarinet family is complex (see also Joppig, 2005). There is standard usage, and there is use of the A instruments for the lowest notes (written *E*) even if it requires fast changes for a few bars. But these alone do not explain his choices. There are many cases where he appears to have made the choice either because of the sound quality that he wanted, or because of the key that he preferred for the instrument; for example in the sixth symphony he shows a preference for the bass instrument to be in a very 'flat' key such as G \flat and in the fourth, for the sharp key of F# (or their relative minors). Much has been written about composers' perception and choice of key since Schubart (1806; see also Duffin 2007, 85-87). I have not seen the suggestion that this might have been applied to the selection of an individual transposing instrument within an orchestra, but I do not see another rationale for some of Mahler's choices. A thorough study is outside the scope of this dissertation.

Sergei Rachmaninoff

Symphony No. 2 (1907) and *Symphony No. 3* (1936) use both B \flat and A basses. In *Symphonic Dances* (1940) the B \flat bass is used mostly but there is a short passage for bass in A, matching the change in soprano clarinets. The lowest note in either instrument is *E* and there are occasional solo passages in the two later works.

Arnold Schoenberg

In *Pelleas und Melisande* (1911) the soprano clarinets are in A throughout. Two bass clarinets in both A and B \flat are used, as is an E \flat clarinet. They usually change to make the key convenient, but the opening section is odd; bass clarinets are in B \flat , in the awkward keys of A \flat and B major, both of which would be easier on the A bass.

Gurre-Lieder (1912) was written in about 1903 but was nine years in orchestration. It uses a huge orchestra. The tonality of the two bass clarinets generally follows or leads that of the sopranos, though the changes sometimes lag. There is a short section near the beginning where the basses are in B \flat and the sopranos in A. At one point (p. 20), two basses and two sopranos are in A, one soprano is in B \flat and there is also an E \flat , which seems to be a definite choice. The lowest note is written E.

Kammersymphonie (1912) also uses bass clarinets in both A and B \flat . Usage is standard with an early change at RN 42+5 to allow time for the change before an important solo arpeggio for the A bass, starting from written E (the lowest note used for the bass clarinet).

Schoenberg's clarinet writing shows care and a deep understanding of the role of all the clarinets in the orchestration.

Ottorino Respighi

Fontane di Roma (1916) shows standard usage except for a short passage between RN14 and RN16 in which both clarinets in A are playing in the key of B. However, this is sandwiched between longer passages in G and F and there are no breaks in which to change instruments.

Richard Strauss

In *Rosenkavalier* (1910), three clarinetists manage instruments in E \flat , D, C, B \flat , A, basset horn in F and bass clarinets in A and B \flat . On the 'instrumentation' page he wrote that it is absolutely inadmissible to substitute the A or B \flat clarinet for the instrument in C.²⁷ When the bass clarinet in B \flat is playing, the soprano clarinets are always in B \flat . When the bass in A is playing, which he appears to select for prominent solo passages except where the key is too extreme, the sopranos appear in A, B \flat and, at RN327, with two A and one B \flat clarinet. The basset horn may appear with either A, B \flat or C clarinets. It seems clear that the instruments and their combinations were selected carefully for their tone.

In both earlier and later operas – *Elektra* (1908), *Salome* (1905), and *Die Frau ohne Schatten* (1917), Strauss used variously clarinets in D, C, B \flat , A and a basset horn but confined the bass player to B \flat . Towards the end of his life, Strauss wrote *Sonatine für Bläser* (From the Workshop of an Invalid) (1942). Both A and B \flat basses are used. In the second and third movements, the tonality of the bass follows that of the soprano clarinets, A and B \flat respectively. But in the first movement, which like the last is in the key of F, the sopranos are again in B \flat (playing in G) whereas the bass is in A (playing in A \flat). The opening passage is shown in Figure 7 in both tonalities. Strauss was notoriously unconcerned about the difficulty for players. It therefore appears that the use of different bass instruments for the two outer movements, both in F, with the same soprano clarinets, was deliberate.

²⁷ Wo "C" clarinetten vorgeschrieben, ist es absolute unzulässig dieselben durch A oder B Clarinetten zu ersetzen.

The image displays a musical score for two Bass Clarinet parts. The top system shows the beginning of the piece, with the Bass Clarinet in A (as written) in the upper staff and the Bass Clarinet in B \flat in the lower staff. Annotations indicate the key signature: 'Starts in G flat major (concert F flat)' and 'Starts in F major'. A 'Lowest note' is specifically marked in the A part. The second system, starting at measure 6, shows a 'Cadence in A flat major (concert F)' in the upper staff and a 'Cadence in G major' in the lower staff. The third system, starting at measure 9, features a rhythmic pattern of eighth notes with accents in both parts.

Figure 7: Richard Strauss, *Sonatine für Bläser (Aus der Werkstatt eines Invaliden)*, movement 1 opening. Key signature of C used for both parts.

Maurice Ravel

In *La Valse* (1921), Bass and soprano clarinets in both A and B \flat are scored. Usage is mostly standard. However, at rehearsal number 68 the soprano clarinets change to B \flat , but the bass remains in A for another five bars, which include two written low *E* notes.

In *Pictures at an Exhibition* (orchestration of Mussorgsky) (1922) Ravel uses the bass in A in a standard way, changing only between numbers. Low tessiturae are used.

Both A and B \flat basses are used in *L'Enfant et les Sortilèges* (1925). Usage is mostly standard, but Ravel uses the lowest notes of the bass clarinet frequently, and there are moments when the bass clarinet changes to A, playing solos down to *E*, while the sopranos stay in B \flat ; for example at RN28 + 1 bar. This is similar to the usage in *La Valse* but the need for the lowest

note of the A instrument seems even more important. The usage in *Concerto for the Left Hand* (1930) is standard, to low E, for both A and B \flat basses.

Ravel's choice of instrument is dominated first by the key, then by his preference for keeping the bass clarinet low in its range, often necessitating the lowest notes.

Bela Bartók

In the *Suite, Opus 4* (1921) the second clarinet doubles on bass for the very prominent unaccompanied *Andante* solo for the bass in A in the third movement. The solo is in C major, and is very difficult to play smoothly on the bass in B \flat (see interview with Alan Andrews on page 74). It is clear that given the key for this movement, the bass in A was a deliberate choice.

The Miraculous Mandarin (Bartók, 1924) uses bass clarinets in both B \flat and A, though the reasons for the choice are not obvious. There have been reports of errors in the score concerning the choice or transposition of the bass clarinets (Pierre Boulez, reported by George Mowat-Brown, email of 27/8/2009). There were also bars omitted from the original edition (Bartók 1924, LIII, and email (24 August 2009) from Heinz Stolba, Editor of Universal Editions Vienna). There are no solo passages comparable with that in *Opus 4*. Universal claim that the edition of 2000 has corrected all the known errors, but does not mention changes in the bass clarinet part.

Arnold Bax

Bax used the bass in A in *Spring Fire* (1913). His usage is standard in that the bass and soprano clarinets change together, according to the tonality, but he seems happy to let the clarinets play in five sharps - though not six! The middle of the range is used. In *Symphony No. 1* (1922) he mostly uses the low range, down to written *E*, changes at less extreme keys, and has occasional solos. Perhaps this reflected his increased skill at scoring for the bass clarinet. He included bass clarinet in A in (at least) *Symphonies Nos. 2* (1926), *4* (1931), *5* (1932), *6* (1934) and the tone poem *Tintagel* (1923); but not in *Symphony No. 3* which never ventures into very sharp keys, nor in his last major orchestral work *Symphony No. 7*, which does require (all) the clarinets to play in the keys of B and *B \flat* .

John Ireland

The *Symphonic Rhapsody* (1933) uses the bass in A (and sopranos in A) throughout, in appropriate keys (where they can be discerned in the very inconsistent score).

Alban Berg

Berg (1928) wrote his *Sieben Früher Lieder* in 1907 but did not orchestrate them until 1928. Five of them use clarinets, in the unusual combination of sopranos in *B \flat* and bass in A, with sparse orchestration. One of the songs, *Liebesode*, has both *E* and *E \flat* in the bass part – the lowest note found in the literature for the bass in A. His *Fünf Orchester-Lieder* (1912) and *Der Wein* (1929), for similar forces, use bass in *B \flat* and low *E* only, although *Der Wein* frequently uses soprano clarinets in A. The choice in *Sieben Früher Lieder* does appear to have been

dictated by the (extended) range. Such instruments were available from Heckel, as we have seen.

Aaron Copland

Dance symphony for large orchestra (1931) is probably the only work by an American composer using the bass clarinet in A. There is a rumour in the clarinet world (related by Alan Andrews) that Koussevitsky purchased an instrument in Europe for the bass clarinet player in the Boston Symphony Orchestra; and that the availability of this instrument enabled Copland to specify bass clarinet in A for the *Dance Symphony*. Usage is standard; the bass in A is used throughout and has important parts in the wind harmony; it has no solo lines, but these are not characteristic of the *Dance Symphony*.

Olivier Messiaen

Turangalila-Symphony (1948 rev. 1990) is the last work known to me to use the bass clarinet in A. The orchestral list, even in the 1990 revision, states:²⁸

2 Clarinets – 1 bass clarinet (all 3 in B \flat – and in A).

Evidently, the authors of the encyclopaedias, dictionaries and treatises had not informed Messiaen that the instrument had been obsolete for several decades. Usage is standard (in so far as anything is standard in this work!). The lowest note (written *E*) is important; for example in the close of *Chant d'amour 1*, the *E* played on bass in A comprises the dominant pedal before the cadence in written C \sharp (concert F \sharp). That the upper *c* \sharp is used for the resolution,

²⁸ 2 Clarinettes – 1 Clarinette bass (toutes 3 en si bémol – et en la)

rather than the lower *C#* (the other bass instruments descend in the cadence), indicates that an extended range instrument was not envisaged. A similar argument can be made for the range of the *B \flat* bass, for example at a bar before RN8 in *Joie du Sang des Étoiles*.

To summarise, there is a tendency for composers to use the bass clarinet in operatic or dramatic orchestral works, often to introduce a sombre mood – a technique still common in music for TV dramas. In the nineteenth and early twentieth centuries, it was normal to select the bass in A when indicated by the tonality, and this practice was continued by many composers in the twentieth century. It was often used for its lowest note. Curiously, the use persisted longer in France (Ravel, Messiaen), Russia (Rachmaninoff) and even England (Bax, Ireland) than in Germany, where it originated.

The sound of the bass clarinet in A

This and the following section are, inevitably, subjective. Nevertheless it is important to attempt at least some evaluation of the sound quality of the bass in A. The instrument in the Shackleton Collection (EUCHMI No. 5122) was kindly made available for a playing test by the Director, Prof. Arnold Myers, on June 20/21 2009. It is a Buffet Crampon dating from 1929 and was used in the Los Angeles Philharmonic Orchestra. It is in good playing condition though pitched slightly high, at about $a' = 442$, and has two manual register keys.

The two short passages from the end of Mahler, Symphony No. 4 (Figure 6) and Strauss, Invalid Workshop (Figure 7) were played and recorded. I later recorded the same passages (transposed down a semitone) on my Buffet *B \flat* bass clarinet (approx. 1995), which has extension to written C. The recordings (on the attached CD) have been edited to provide the

best performance from a number of takes, but not altered in any way that would affect harmonic content. The recordings were made on an Edirol R-09 digital recorder with its built-in microphones.

My subjective impression when playing the EUCHMI instrument in isolation was that it did not feel greatly different from my normal B \flat bass. However, I was surprised to find that to my ear they did sound different when heard side by side. My perception is that there is a similar, but less marked, difference between the bass in A and that in B \flat as there is between the corresponding soprano instruments.

I played the Mahler extract to an audience of about 50 MA Music students and faculty at the Open University MA Music Open Day on July 1 2009 and asked the question: 'do these instruments sound significantly different?'? Approximately half the audience thought that they did, one person thought there was no significant difference and the rest were undecided.

Clearly, this is merely an indication. It is possible that significant differences would also be heard between French-style and German-style bass clarinets in the same tonality; however, a similar recording of A and B \flat basses is included with the article by Joppig (2005) on German Heckel instruments with, to my ears, a similar result. I believe that this shows that it is at least plausible that composers with acute perception and known sensitivity to orchestral colour, such as Mahler or Strauss, would have felt the choice of bass instrument to be significant on the grounds of its sound.

The opinions of performers

Interviews and/or correspondence took place with several performers. Forest Aten, bass clarinet in the Dallas Opera, responded (email of 25 August 2009) that his main reasons for not owning a bass in A were expense and availability. He can transpose easily for most situations, so it is not critical as a professional. He would love to own one, but has never played or even seen one. As an opera orchestral musician he would use one often.

Dennis Smylie of New York (email of 4 November 2008) bought a Selmer bass in A in 1985. It is excellent in both sound and pitch. He has used it in various pieces including Wagner's *Tristan*, and James Ognibene used it in the Metropolitan Opera performance of Ravel's 'L'Enfant et les Sortilèges'.

Peter Stoll of Toronto (email of 30 July 2009) wrote:

... unless you play full-time symphonic bass, it's not likely to be in use every week, but I have used it each season since I acquired it, and I do really enjoy playing it. [...] I really hate the idea of a type of clarinet going extinct, so I try to play this whenever I can. [e.g.] Wagner *Liebestod* and recently Mussorgsky-Ravel *Pictures*. For the Wagner I played both my Bb and A basses for the conductor, he wanted the A so I felt vindicated in my purchase!

Alan Andrews of London (telephone interview of 30 August 2009) plays a Selmer made in 1986. He uses it a lot, as a professional freelance clarinetist and as bass clarinetist with the Brighton Philharmonic; works have included Ravel *La Valse*, Stravinsky *Rite of Spring*, Messiaen *Turangalîla*. It plays well and has a characteristic sound, though since Selmer only ever made a few, he felt that the intonation was not quite so well worked out as on their Bb bass. He highlighted Bartók's *Suite Opus 4* as a work with a major solo that works far better on

the bass in A as in the original Universal Edition; the Boosey and Hawkes second edition was put, less satisfactorily, in B \flat throughout.

CHAPTER 6

CONCLUSION

There is no doubt that the bass in A was available and normally used for performances by Wagner, Liszt, Mahler, Strauss and their successors. It is not known if a bass in A was used for the première of the first such work, *Lohengrin*, since Liszt only speaks of ordering a single bass clarinet both in Weimar and in Leipzig, rather than a pair. It is possible that the part in the very first performances was transposed on a bassoon-type bass in B \flat . There is musical evidence that bassoon-form instruments and straight instruments overlapped at the time of the Dante symphony (1859), indicating that separate instruments were then available, and there is documentary evidence that both A and B \flat basses were provided in the refurbishment of the Bavarian royal orchestra in 1866. After this date there is no evidence that bassoon-form instruments were used in orchestras; the orchestral writing is clearly limited to the low written *E* until the late symphonies of Mahler and some Strauss works, at which time extended range modern-type instruments were available.

The earliest reference to basses in A, by Porteous (1854) indicating that they were common in Germany at that time, shows that they were soon available for *Lohengrin*. No bassoon-type basses in A have as yet been discovered and the earliest definite record of a bass in A, other than the general claim of Porteous, is in the early 1860s. There is a direct 'lineage' both to Schönberg on the one hand and (a surprising discovery) to Sullivan and Elgar and hence probably Bax and Ireland on the other.

Virtually all orchestration manuals of the nineteenth century (and indeed beyond) emphasized two features of writing for clarinets. One is that it is difficult to play them fluently in ‘extreme’ keys (more than two, or possibly three, sharps or flats) so that a composer should choose the clarinet largely according to the main key of the work. The other is that the C, A and B \flat clarinets have a very different sound character, and this must be taken into account in the composition. There is also evidence that in numerous cases the instrument in A was required mainly for its lowest note. Thus, even though composers might not have originally chosen the clarinet for its tone quality, they had to bear in mind the tone implications of their choice. Similar arguments have been made before for soprano clarinets (Lawson 1983, Longyear 1983, Leeson 1991, Leeson and Levin 1998). None of the orchestration manuals makes the same distinction when discussing bass clarinets, but nor is it contradicted. They say, in effect: “write as you do for the soprano clarinet but an octave lower, and bear in mind that the bass instrument is not so nimble”. It would be difficult for a student to read these manuals without coming to the conclusion that there is a similar difference between A and B \flat bass instruments as there is between the corresponding soprano clarinets. This was also the indication from my experience playing the instruments and the impression of an informed audience on hearing the recording. Therefore, there are grounds for believing that composers would have been aware of the sound when composing. And in some cases, there is musical evidence that they indeed selected on the basis of sound or key character alone, such as Liszt *Dante Symphony*, Mahler *4*, Dvořák *The Water Sprite* and the Strauss *Invalid Workshop*.

Why, then, did the instrument fade from use? It was not solely from the availability of B \flat instruments with extended range; these have been continuously available since 1793, though

rarer than 'normal range' instruments between about 1860 and the early 1900s. It was not solely on account of expense; two bass clarinets are cheaper than a single bassoon of similar quality. It was not solely due to the limited amount of music written for the bass in A; these number dozens rather than thousands of works, but there are some fine Wagnerian solo passages and many works that are easier to play on the right instrument.

No doubt all of the above contributed to the decline, but do not seem sufficient reasons. I propose that commercial reasons have played the largest part. Clarinet manufacture is now largely concentrated in a few large companies; Chapter 4 shows that **all** the makers that formerly offered basses in A have either disappeared or no longer offer the instrument. The bass clarinet has enjoyed greater popularity since the mid-twentieth century than at any time, thanks largely to the rise of school and college music and its emphasis on wind bands (Kalina 1972, 214 ff.). This has led to relatively high-volume manufacturing methods. It makes little difference to small custom makers – then and now – which instruments they make, either by hand or machine-assisted methods. But even partial mass production (especially of the keywork) involves expensive tooling. The top-of-the-range Buffet, Selmer, Leblanc and Yamaha models have parallel use in bands and orchestras, with the band instruments identical but often stopping at *E \flat* . One can buy them online at reasonable cost, partly because keywork is made in the hundreds for such instruments. In contrast, we know from Buffet and Selmer that they sold the bass in A but once every few years. These were custom instruments, which have negligible effect on the profitability of the whole company; small surprise that the bass in A does not feature in their catalogues. The above ideas were strikingly confirmed by the

information received from Jérôme Selmer (page 52). The future of the bass in A probably lies with small, custom makers such as Stephen Fox and Jochem Seggelke.

Should 'period' – or even modern – orchestras revive this instrument when playing the great works by composers such as Wagner, Mahler, Liszt, and Strauss? It is hard to make the case (apart from ease of playing) in instances where the A instrument was apparently chosen for its lowest note within a thickly-scored ensemble passage, but the case for solo passages is much stronger. The primary approach to historically-informed performance was well outlined by Lawson (1983), and there seems no reason to depart from it:

In tackling the complex problem of clarinet sonorities, I believe we should follow the composer's instructions as closely as possible, even where they appear conservative or eccentric; any attempt to interpret the motives for the choice of a particular clarinet must be undertaken with caution. A knowledge of subsequent developments in instrumental manufacture can pose a continuous threat to an authentic approach.

The sound of the bass in A is moderately but significantly different from that in B \flat . It is closer to the sound that the composer imagined. It presents no obstacles to the player; in fact, parts written for a bass in A can usually be played more easily and more smoothly than on a bass in B \flat , because they are normally in a more natural key for the clarinet.

I believe that they should.

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Associated CD

This comprises two short excerpts, played by the author on the bass clarinet in A EUCHMI No. 5122 and on the author's Buffet bass in B \flat (approx. 1995) with extension to low C. The parts have been transposed to the same nominal pitch, though the bass in A plays at a slightly higher absolute pitch. Played by and © D.K. Bowen 2009.

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|---------|--|
| Track 1 | Excerpt from end of <i>Mahler, Symphony No. 4</i> , played on the bass clarinet in A |
| Track 2 | Excerpt from end of <i>Mahler, Symphony No. 4</i> , played on the bass clarinet in B \flat |
| Track 3 | Excerpt from beginning of Strauss, <i>Sonatine für Bläser</i> , played on the bass clarinet in A |
| Track 4 | Excerpt from beginning of Strauss, <i>Sonatine für Bläser</i> , played on the bass clarinet in B \flat |