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Theodor Lotz
A Biographical and Organological Study

Melanie Piddocke

PhD
The University of Edinburgh
2011
DECLARATION

I hereby declare that this work is original and has not been previously submitted in whole or part by me or any other person for any qualification or award. I further certify that due acknowledgement is given to the sources of information and ideas derived from the original scholarship of others, and that to the best of my ability all scholarly conventions and proprieties have been observed in the use, citation and documentation of these sources.

(Signed)

(Date) 26/06/2012
Abstract

This dissertation is a comprehensive study of the life and work of the Viennese woodwind instrument maker Theodor Lotz. Lotz is central to many of the most significant developments in woodwind instrument manufacture and compositions of late 18th century Vienna, and is associated with some of the greatest players and composers of the day. Despite this, no study has been undertaken into his life and many of his surviving instruments have not been studied. This study corrects this by examining both the biographical and organological aspects of this maker.

In Chapter 1, the current knowledge of Lotz’s biography is examined for veracity. This has been achieved through consultation of archival sources such as birth and marriage registers and contemporary newspaper announcements. The biographies of the other significant Viennese makers have also been examined in order to determine their relationship to Lotz. Particular attention has been paid to those makers known to have associated with him.

Chapter 2 is a comparative study of clarinets. The surviving clarinet by Lotz is the main focus, and it is compared to earlier Viennese instruments as well as other contemporary instruments in order to place Lotz’s instruments in context.

Basset horns are the instruments for which Lotz is best known. Chapter 3 is a comparative study of the surviving basset horns, and includes instruments by Lotz which have not previously been studied. The comparative aspect of the study focuses most particularly on instruments by Doleisch, who also made significant numbers of basset horns in nearby Prague during Lotz’s lifetime. This chapter also includes a discussion on the basset clarinet.
Chapter 4 studies Lotz’s work with bassoons and contrabassoons. As with Chapter 3, it includes a number of Lotz’s instruments which have not been studied before. It continues the comparative theme and examines not only Viennese instruments, but particularly those by August Grenser, whose bassoons are widely copied by modern makers.

The attribution of the surviving flute by Lotz is examined in Chapter 5. Lotz’s involvement with the flute is examined through documentary evidence and the output of his students is examined in order to determine his level of influence on this instrument.

Chapter 6 is a study of the two surviving oboe fragments by Lotz as well as the surviving cor anglais. As internal measurements have been impossible to obtain for many of these instruments, the comparative study has instead focussed on external aspects of decoration and design.

The conclusion gives a summation of the evidence presented in the preceding chapters and is used to demonstrate Lotz’s unique contributions as an instrument maker and his impact on the future and design of woodwind instruments.
Acknowledgements

This research has been four years in the making and there are many people to whom I owe thanks for their assistance in the completion of this PhD. Foremost amongst these I must thank my supervisors, Dr. Darryl Martin and Professor Arnold Myers for their guidance and advice.

None of the information presented in this dissertation would have been obtainable without the assistance and co-operation of every museum and archive I have visited in the course of my research. I offer a blanket thanks to all the collections I have visited for allowing me access to their instruments and records. Several curators and archivists have gone above and beyond their duties in order to assist me. Amongst these must be counted Herr Joachim Tepperberg of the Haus-, Hof- und Staatsarchiv in Vienna, who was tireless in his efforts to assist me in tracing documents relating to Lotz’s court appointment. The staff of the Stadtsarchiv Bremen were also of great assistance in my research of Tietzel, while assistance given so freely by Herr Heinz Unfricht of the archives in Kirchheim allowed me to discover Lotz’s place and date of birth. I am grateful to other archivists and curators, such as Dr. Frank Bär of the Germanisches Nationalmuseum Nuremberg, Jenny Parkerson of the National Library of Scotland (Maps Division), Benedikt Hager of the Institut für Musikwissenschaft Wien and Mag. Dr. Beatrix Darmstädter of the Kunsthistorisches Museum Vienna, whose contributions, however apparently small, came at just the right time and helped piece together a much larger puzzle.

A number of the instruments I have examined are located in private collections around the world, and I am grateful to the owners of these instruments for allowing
me access to their homes and collections. I am particularly grateful to Firmin Pirker in Vienna and Jiri Seidl in Prague, as well as other owners such as Rick Wilson who, although I was unable to visit, were willing to supply me with information regarding their instruments. I also owe particular thanks to Thomas Kiefer who not only informed me of a number of important instruments in private and public collections of which I was previously unaware, but also introduced me to the owners of instruments and facilitated my visits to their collections. Thomas has also been unstintingly generous in sharing information from his own research with me.

Similarly generous with the fruits of his own labour has been Matthew Dart, who has offered valuable advice and insight which has been of great assistance in researching and writing about bassoons, but who has also unhesitatingly shared his own measurements of instruments which I have been unable to access. Robert Sebesta has also been extraordinarily generous in supplying me with documents he found in archives in Bratislava and Vienna, which have been absolutely crucial in building my research of Lotz’s life. I would also like to thank Albert Rice, who has shown unflagging interest and encouragement for my research.

I owe a particular debt of gratitude to Sir Nicholas Shackleton, whose generous bequest of his unparalleled collection to the Edinburgh University Collection of Historic Musical Instruments in 2006 has not only greatly facilitated my research in providing me with such an unmatched resource on my own doorstep, but has also provided me with a means to contribute towards my own support and further my interest and knowledge in caring for musical instruments.
Thanks are also due to my friends who have all shared the little victories and frustrations that have been part of this research. Especial thanks to Ernst Schlader and Markus Springer, not only for their friendship but also for their willing assistance with translating difficult passages from 18th century German manuscripts and the many interesting discussions on topics relating to woodwind instruments of the 18th century, during which they openly shared their extensive knowledge of the subject. Sarah Deters Richardson and Jonathan Santa Maria have also been wonderful friends and colleagues who have cheered me along and been particularly supportive for the last stretch. Joanne Shillington has not only provided me with employment which has enabled me to fund my research, as well as the flexibility to undertake research trips, but has also become a friend along the way. Although too numerous to name here, I would also like to thank the many colleagues and friends in orchstras who have patiently spent their rehearsal breaks with me as I closely examined their instruments and questioned them endlessly about makers, tutors, and instrument design.

Finally, none of this would have even been possible without my family – my parents Margaret and Stewart, my brother Toby, and sister-in-law Rebecca. They have always unreservedly and wholeheartedly supported all of my endeavours, not only financially and emotionally, but in many ways it is impossible to define. I hope this research is in some way a justification of their faith in me.
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Terminology and Conventions

DATES
Years are written in Arabic numerical form. Centuries are also referred to in numerical form. Therefore, the eighteenth century is always written as 18th century.

MEASUREMENTS
All measurements, unless expressly stated otherwise in the text, are given in millimetres. This is abbreviated to mm.

NAMES
Names of makers are written as found on their instruments or in contemporary documents. Cities and countries are written in English (e.g. Vienna rather than Wien) unless as part of a quote or title. Museum names are given in their original language. Non-English names and terms are given in italics.

NOMINAL PITCHES
Throughout the dissertation, transposing instruments such as clarinets are referred to by their nominal pitch. Therefore, a clarinet from which a sounding A flat is heard when a B flat is fingered is referred to as a clarinet in B flat; a clarinet which produces the sounding pitch of A when a C is fingered is called a clarinet in A, and so on. For the sake of brevity in tables, B flat is abbreviated to B♭. All other instruments are in C unless otherwise indicated.

NUMBERING
When referring to numbers of keys on an instrument, this is always written out. A clarinet with five keys is therefore referred to as a five-key clarinet. Bar numbers are always written numerically.

PITCH NOMENCLATURE
Notes and pitches are always referred to by their sounding name, followed by their concert pitch in parenthesis for transposing instruments. The method for notation employed is the same as that used in *Grove Music Online* and is as follows:

![Music notation diagram](image-url)
GENERAL ABBREVIATIONS

att. Attributed
fl. Gulden
fr. Fragment
LT Left thumb
mm Millimetre
RT Right thumb
unatt. Un-attributed
x Formerly in this collection
xr. Kreutzer

COLLECTION ABBREVIATIONS

Throughout the dissertation, instruments are followed in parenthesis by its collection and inventory number. For the sake of brevity, collection names have been abbreviated or given as an acronym. These are given below.

Allhaming, Schlader Schlader Private Collection, Allhaming
Berlin Musikinstrumenten-Museum, Staatliches Institut für Musikforschung
BNM Bayerisches National Museum, Munich
Brussels, MIM Musical Instrument Museum, Brussels
DMM Deutsches Museum Munich
EUCHMI Edinburgh University Collection of Historic Musical Instruments
FO Museum Viadrina, Frankfurt (Oder)
GAU Musikwissenschaftliches Seminar der Karl-August Universität Göttingen
Geneva Musée d’Art et d’Histoire, Geneva
GM Gemeentemuseum, The Hague
GNM Germanisches Nationalmuseum Nuremberg
GdM Gesellschaft der Musikfreunde, Vienna
Innsbruck Ferdinandeum, Innsbruck
KHM Kunsthistorisches Museum, Vienna
Leipzig Musikinstrumentenmuseum der Universität Leipzig
Linz Landesmuseum Linz
MCA Museo Carolino Augusteum, Salzburg
Museo Civico, Modena Museo Civico di Storia e di Arte Medioevale e Moderna, Modena
NMM National Music Museum, Vermillion, South Dakota
Prague, NM Narodní Muzeum Prague
Prague, Seidl Jiri Seidl Private Collection, Prague
Retz Stadtmuseum Retz
Rome, MUSA Academia Nazionale di Santa Cecilia, Museum of Musical Instruments
SMM Stadtmuseum Munich
<table>
<thead>
<tr>
<th>Location</th>
<th>Collection Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Petersburg, MMI</td>
<td>Musei Muzíkalných Instrumentov Teatra Muziki I Kinematografi, St. Petersburg</td>
</tr>
<tr>
<td>TM</td>
<td>Technisches Museum, Vienna</td>
</tr>
<tr>
<td>Vienna, Pirker</td>
<td>Pirker Private Collection, Vienna</td>
</tr>
<tr>
<td>WStLA</td>
<td>Wiener Stadt- und Landesarchiv</td>
</tr>
<tr>
<td>Yale</td>
<td>Yale University Collection of Historic Musical Instruments</td>
</tr>
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**Introduction**

Theodor Lotz (1746 – 1792) is one of the most important and influential woodwind instrument makers of the late 18th century. As court instrument maker in Vienna from 1785 to his death in 1792 he was active at the height of the Viennese classical era and associated with some of its key figures. Despite this, and the twenty-three surviving instruments from a range of the woodwind family, little attention has been paid by modern scholars to Lotz’s life. Although his well-known association with Mozart and Anton Stadler has led to a number of studies on the surviving instruments of the clarinet family, others such as bassoons, flutes and oboes and their associated relatives have been largely unstudied. This is the first study to not only broaden our knowledge of Lotz’s life through archival and documentary research, but also to make an in-depth study of all the groups of surviving instruments.

Little has been written regarding Theodor Lotz’s biographical details. What does appear in the literature is generally in the form of dictionary or encyclopedia entries. Perhaps the most authoritative of these in English is *The New Langwill Index: A Dictionary of Musical Wind-Instrument Makers and Inventors* by William Waterhouse.1 This work was begun by Lyndesay G. Langwill, appearing first as *An Index of Musical Wind-Instrument Makers* in 1960 before passing through six editions, then to its current first edition with a new author. Although the entry for Lotz in this work is brief, it outlines essential information, such as years of activity, some biographical information, and lists a selection of known extant instruments and their locations, as well as including a bibliography for each entry. Furthermore,

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within each entry, links to other entries within the book are listed. Therefore this work provides essential biographical information not only for Lotz, but for those known to be associated with him and also the other makers covered in this study.

Other similar works to contain entries for Lotz are Rudolf Hopfner’s *Wiener Musikinstrumentenmacher 1766-1900* and Helga Haupt’s *Wiener Instrumentenbauer von 1791 bis 1815*. However, the dates covered by Haupt’s work restrict its usefulness to this particular study, beginning as it does in Lotz’s last year of life. Hopfner’s book – the most recent large scale publication dedicated to Viennese makers - is primarily intended as an address register. As useful as these works have been as a reference point, particularly in the early stages of research, several discoveries have arisen in the course of the investigations conducted for this dissertation which now correct or add new information to that presented in these works. The two most important and influential musical dictionaries, the *New Grove Dictionary of Music and Musicians* and *Musik in Geschichte und Gegenwart* contain no entry for Lotz.

Pamela Weston has perhaps carried out the most extensive publication of biographical information relating to clarinettists in her several books. Lotz is also dealt with in these works, most thoroughly in *More Clarinet Virtuosi of the Past*, which contains somewhat more substantial biographical information than is

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presented in Waterhouse’s book mentioned above. In her previous book, *Clarinet Virtuosi of the Past*, Lotz is also mentioned, but in this instance as a side issue in the larger chapter on the collaboration between Mozart and Anton Stadler. Furthermore, Weston’s research was carried out in the 1970s and her works were published before several key discoveries were made in relation to Lotz. Weston does not record her sources in many instances and it is difficult to discern what information has been derived from original research and what is simply repeating secondary sources. This makes substantiating the origins or accuracy of such information difficult and information contained in Weston’s works has been treated with caution throughout this dissertation.

Robert Sebesta is the most recent researcher to carry out further examinations into the life of Lotz. His activities have focused on archives in Vienna and Bratislava (formerly Pressburg), where Lotz is known to have been active. Some of his findings appeared in the CD notes to *Une soirée chez les Jacquins* and revealed new information pertaining to Lotz, but were never published as an academic paper. Although Sebesta’s research has been vital and influential for this dissertation, his interpretation of some of the information presented in these documents has been questioned here.

As the accredited inventor of Anton Stadler’s basset clarinet, Lotz also frequently receives mention in many articles and books by prominent authors dealing with the

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6 Pamela Weston’s archive has been examined and did not contain further information on primary source materials.
history of that instrument. Many of these are well known works such as Dietrich Demuss and Thomas Grass’s *Das Bassetthorn: Seine Entwicklung und seine Musik* and Al Rice’s *The Clarinet in the Classical Period*, as well as articles by Eric Hoeprich, Colin Lawson and Richard Maunder appearing in scholarly journals such as *Early Music* and *The Galpin Society Journal*. However, none of these works focuses exclusively on the biography of Lotz and several contain identical information, being derived one from the other. Hoeprich’s, Rice’s and Maunder’s works are the most important, representing some of the most recent and scholarly research undertaken in this area. Maunder’s works also contain significant information on the structure and operation of instrument maker’s guilds and Court appointments in Vienna in the 18th century.

In addition to these secondary sources, a number of primary sources also contain information concerning Lotz. The earliest of these is Johann Nicolaus Forkel’s *Musikalischer Almanach für Deutschland auf das Jahr 1782* and was therefore published during Lotz’s lifetime. This was closely followed by Carl Friedrich Cramer’s *Magazin der Musik* of 1783. This latter source is particularly important as it is the first to credit Lotz with improvements to the basset horn, although the information it presents is somewhat contradictory. This issue will be discussed in the body of this work. Containing virtually identical information to that offered by

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Cramer is Ernst Ludwig Gerber’s *Historisch-Biographisches Lexicon der Tonkünstler* of 1790.\(^1\) It is interesting to note that Albrechtsberger’s entry for the basset horn in his *Gründliche Anweisung zur Composition*, which appeared in the same year as Gerber’s work, makes no mention of Lotz in the improvement of the basset horn, crediting only the Stadler brothers with the innovations.\(^2\) This issue will also be discussed in the following chapters. The fact that all three of these works were published during Lotz’s lifetime lends them added importance, representing as they do opinions and the state of knowledge at the time Lotz was making his instruments.

Contemporary newspapers, such as the *Preßburger Zeitung* and *Wiener Zeitung* contain valuable information relating to Lotz’s activities as a player, maker and performer. The *Wiener Zeitung*, which appeared bi-weekly beginning in 1703 as the *Wienerisches Diarium* before becoming the *Wiener Zeitung* in 1780, is particularly valuable in establishing biographical data, as instrument makers frequently placed advertisements for their instruments in it.\(^3\) Furthermore, its ‘deaths’ column listed all who died in the city and was not restricted to those who chose to pay for an announcement.\(^4\) This practice is valuable in collecting biographical data as, in the case of women and children, the occupation of the husband or father is also


\(^{13}\) Maunder, “Wind-instrument Makers,” 170.

Therefore a maker’s activities, address and family details may be traced through the deaths of his wife or children.  

In terms of organological studies of Lotz’s instruments, the available resources are less scanty, although only marginally so. These are formed mainly by secondary sources, although a few primary sources, such as Gerber and the *Wiener Zeitung* and *Preßburger Zeitung*, listed above, contain some information relevant to the organological study.

The paucity of organological information becomes apparent when it is considered that many organological and historical studies of the flute, oboe and bassoon families make no reference to Lotz, despite the fact that there are several extant examples of most of these instruments, and Lotz’s skill in this area was no less than in his clarinet and basset horn making. Lyndesay Langwill, although outlining the history and development of the bassoon and contrabassoon in great depth in his many papers, articles and books on the subject, makes no mention of Lotz’s contributions in this area. Will Jansen’s books *The Bassoon: Its History, Construction, Makers, Players and Music*, although a widely consulted source on the history of the bassoon, also makes no mention of Lotz’s involvement in the development of the instrument.

This last source does contain Lotz in a list of bassoon makers, but notes no known

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instruments, despite three listed in Young and seven found to be extant at the conclusion of this study.\textsuperscript{19} Jansen’s remarks on the history of the bassoon are therefore made without any reference to surviving instruments by Lotz or to the innovations and developments which they may represent.

No organological study of woodwind instruments would be complete without consultation of Phillip T. Young’s \textit{4900 Historical Woodwind Instruments}, which forms an excellent companion volume to William Waterhouse’s index discussed above.\textsuperscript{20} This work lists known instruments by a vast number of makers in private and public collections around the world, including those of Lotz and his contemporaries. The book also records details of the makers’ stamp and other useful aspects relating to each instrument, including materials, some measurements and information on the key mechanisms. As this study has progressed it has been found that the information presented by Young, although useful, is increasingly out of date. Some of the listings were found to be incorrect, such as that of a Lotz flute in the Narodní Muzeum in Prague (the instrument with the corresponding number was by Lott) and others have since been found that have not been included in Young’s listings. As Lotz is the primary focus of this dissertation, these remarks are made in reference to the relevant entry and others related to it, yet it is doubtless the case for other makers throughout the book, as our knowledge continues to expand.

The surviving clarinet and ten basset horns by Lotz are the most thoroughly examined of his extant instruments and the literature pertaining to them is richer than

\textsuperscript{20} Young, \textit{4900 Instruments}.  

those for other instruments. Through his connection with Anton Stadler, and thus Mozart and his compositions, this group of instruments is of great importance and interest to organologists. The clarinet in particular has been documented in a number of sources, such as David Ross’s dissertation *A Comprehensive Performance Project in Clarinet Literature* and Al Rice’s *The Clarinet in the Classical Period*, and widely copied by instrument makers.\(^{21}\) Pamela Poulin’s various works on the life of Anton Stadler are also of great importance, both biographically and organologically, in relation to any study on Lotz. Her discoveries revolutionized our understanding of the instrument for which Mozart wrote his concerto K. 622. However, it must be mentioned that, while useful works and central to this study, Lotz and his instruments form only a small part of the greater material within each work.

The basset horns have perhaps received less attention individually than the surviving clarinet. However, a set of three instruments were documented in the article, “A Trio of Basset Horns by Theodor Lotz” appearing in *The Galpin Society Journal* under the authorship of Eric Hoeprich.\(^{22}\) Nevertheless, new instruments continue to appear, with three coming to light during the course of this research, and these instruments remain largely undocumented in the literature.

The paucity of dedicated studies regarding Lotz seems surprising when considering his significance in Viennese musical history. Particularly unusual is the neglect displayed towards the extant instruments in organological studies, other than the clarinet and basset horns. This study aims to bring together the information scattered

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in the various sources listed above, establish the veracity or otherwise of the information contained within them, as well as adding new biographical and organological information through extensive archival and organological research, thus providing the first comprehensive study dedicated to Theodor Lotz.

During the course of this research a number of works have been published which have impacted significantly on the content and direction of the study. The work of these authors has presented new avenues and made available information which would otherwise have been out of reach, either by restrictions in the scope of the study, access or language. Amongst the most significant of these is Rita Steblin’s “Viennese Woodwind Makers in the Classical Era, with Emphasis on Friedrich Lempp’s Request for Protection in 1768”, Robert Sebesta’s “Franz Strobach: basset horns and new biographical information”, and Albert Rice’s *From the Clarinet d’Amour to the Contra Bass*.²³

Steblin’s article was based on a substantial amount of archival research, largely concerning makers covered in this study. The documents she cited provided new information on their careers and instruments, and allowed the present author to easily obtain the same documents and examine them more thoroughly for additional information. This has allowed much of the information in Chapter 1 to be expanded upon.

Similarly, Sebesta’s work on Strobach added significantly to our knowledge of this maker. Such detailed research on a maker peripheral to the central theme was outside the scope of this study, but extremely useful in highlighting possible connections between Lotz’s instruments and Strobach’s unusual designs which have been pursued organologically in this dissertation.

Rice’s book is the first such work to be devoted entirely to large size clarinets of the 18th and 19th centuries. It covers the time period of this study, and examines a number of makers and instruments with which this study is also concerned. Being a general work, it does not necessarily examine them in the depth pursued in this study, but has nonetheless been invaluable in placing the makers and instruments discussed in this dissertation in context.

This dissertation covers a number of disparate members of the woodwind family. It aims to effectively compare each instrument with others in the same group in order to highlight similarities or differences from which inferences about the makers and their relationships to each other may be drawn. Furthermore, it is intended to place each instrument group within the wider context of the makers’ output. For the comparative study, the aspects considered and the methodology used to gather the data were largely the same from group to group. These consisted of sounding length, bore diameter, bore shape and tone hole size. Variations or additions according to instrument type are detailed in the relevant chapter. External physical characteristics, such as decoration, key number, shape and mounting method and external profile were also considered and utilized as methods of comparison.
Throughout the dissertation, measurements are given in millimetres unless otherwise specified. Restrictions placed on measurement or measuring tools by museums have been adhered to, resulting in some data missing from several of the instruments. Measurements were taken with a digital calipers accurate to 0.2mm and with a range of 0 – 150mm. Any measurements exceeding this were taken with a tape measure, accurate to the nearest millimetre and checked for accuracy against the digital callipers.

Where internal bore measurements were permitted, a set of telescoping gauges were used. To measure bore flares, the bore size at the beginning of the instrument was found using the telescoping gauges (or the bore diameter in the cylindrical part of the instrument in the case of clarinets), then the gauges were increased in size by a millimetre and re-inserted into the bore. The point along the length of the bore at which they stopped was measured. This was continued for the length of the instrument. Where possible, two planes of the bore were measured – latitudinal and longitudinal – to detect if the bore was round or had become elliptical, but this was not always possible when the given point coincided with tone holes and undercutting. Where the distortion of an oval bore was significant it has not been included in this study, as it was felt that practices such as taking the geometrical mean could not accurately represent the original state of the instrument. The degree of elliptic平 has the greatest implication when determining the starting point of the flare in clarinet bores. In some instances, such as the clarinet by ‘IP’ (EUCHMI: 5167), the oval shape of the bore meant that the flare began at different points along the bore according to the plane on which it was measured. For the ‘IP’ clarinet, there was a
difference of 23.3mm between the starting point of the flare on the latitudinal and longitudinal planes, therefore making an accurate calculation of the length of the flare impossible. In most cases, however, the distortion was isolated to localised areas, most particularly the joints, and the data from these bores has been included in the study. The following graph plots the latitudinal and longitudinal planes of a bassoon by August Grenser (FO: V-178J) which was found to be slightly elliptical. The graph demonstrates that the amount of variation for such bores was insignificant for the purposes of this study.

**Graph i.1. Graph demonstrating degree of ellipticism in a bassoon bore by August Grenser (FO: V-178J).**

Conical instruments – flutes, oboes and bassoons – were measured in the method described above. Curved *cor anglais* could not be measured in this way and were measured at the tenons only. It was found that measuring the flaring section of clarinets in millimetre increments resulted in an impracticably large amount of data
which detracted from the comparative goal of the measurements. The conical section of clarinet bores were therefore measured by first finding where the expansion of the bore began (using the predominant bore size found in the upper parts of the instrument), then finding where the bore reached twice the bore area, then three times and so on until the end diameter was reached. This method allowed the data to be clearly plotted on graphs in order to compare flaring shapes. In order to determine the consistency and accuracy of this measuring method, the same instrument was measured on two separate occasions and the data compared. The graph below plots the two sets of measurements taken from the flaring section of the clarinet by August Grenser (EUCHMI: 5732) and demonstrates the accuracy of this method of measurement.
Graph i.2. Comparative bore measurements taken a week apart of a clarinet in B flat by August Grenser (EUCHMI: 5732).24

Before this method was decided upon, a number of other methods were tried and found to be unsatisfactory. These included measuring the angle of the cone, and the percentage along the length of the instrument at which the double, triple etc., bore areas were reached. Extremely disparate instruments were measured (such as 18th century Viennese, English and French, and 20th century German) where, if variation existed, it would be reasonable to expect it to be evident, and the results were found to differ by only a few degrees or percents respectively. When calculating the percentage along the length of the instrument where the bore area reached double, triple, quadruple etc., its original diameter, it was found that data beyond double the

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24 In this and all subsequent graphs demonstrating the flaring section of clarinets, the horizontal axis designation ‘Position on bore (mm)’ indicates the position along the length of the bore. For the purposes of these graphs, this includes only the sounding length of the stock and bell sections of the clarinet.
bore area yielded little in the way of variation. While indicating that the cone itself is fairly uniform amongst all types of clarinets, these methods ignored the fact that, while the bore of two instruments may start and finish at the same or similar diameters, the shape they take in between may differ greatly. It was this difference which this study aimed to detect. From experimentation with these different methods of measuring and presenting the data, that used in this study and outlined above appears to be the most satisfactory for the purposes of comparing the shapes of flares and cones in clarinet bores.

The percentage of the overall length of the instrument taken up by the flaring part of the bore was calculated by measuring the length of the flare divided by the total length of the instrument multiplied by 100. This can be expressed as an equation, if the length of flare is expressed as LOF and the overall length as LOA (Length Overall), giving: Flare% = (LOF/LOA) x 100. Conicity, used to express the degree of flare of the flaring part of clarinets and for the entire length of conical instruments such as oboes, flutes and bassoons, was calculated by subtracting the smallest bore diameter from the largest and dividing them by the length in between. This can be expressed as an equation if the largest bore diameter is expressed as LBD, the smallest as SBD and the distance between as D: Conicity = (LBD – SBD) / D. The greater the number resulting from this calculation the more conical the bore. The point at which the bore reaches double the original bore area was calculated by determining where this measurement occurred along the total length of the instrument, divided by the total length and multiplied by 100. This can be expressed as an equation if double the bore area is expressed as DBA, the point at which it
occurs along the total length as POL and the total length of the instruments as LOA: 

\[
DBA = \frac{POL}{LOA} \times 100
\]

The calculations resulting from these equations are expressed throughout the dissertation in graphs and tables. Where data for a particular instrument is missing from these, this indicates the data was unobtainable, either through restrictions placed by the museum or difficulties with the instrument itself.

Tone holes were measured on both the latitudinal and longitudinal planes, using digital callipers. The geometric mean of the measurements was found, using the square root of the two measure radii (\(\sqrt{\text{Radius 1} \times \text{Radius 2}}\)). These measurements were then used to calculate the area of the tone hole, which was the property used for comparison. Tone holes were measured on the exterior of the instrument only – undercutting was not measured but the degree of undercutting was assessed visually.

Crooks were not included in the sounding lengths of bassoons as these are frequently missing and, when present, usually impossible to identify as original. Similarly, the authenticity of clarinet mouthpieces is often difficult to judge, although the presence and nature of stamps and style may lead to reasonable assumptions being made. In general, clarinet mouthpieces have also not been included in sounding lengths. Where significant original mouthpieces are present, these are discussed separately.

The terminology used is that most commonly associated with each instrument. The sections of the clarinet are referred to from top to bottom as: mouthpiece; barrel; left hand section; right hand section; stock; bell. Where the left hand and right hand
sections are integral, this is referred to as the middle section. Where the stock and bell are integral, this is referred to as the stock/bell.

**Figure i.1. Diagram demonstrating clarinet terminology employed in this dissertation.**

Basset horn sections are referred to from top to bottom as: mouthpiece; barrel; left hand section; knee; right hand section; stock; chimney; *buch*; bell.26


26 The German term *buch* has been used throughout for the lower part of the basset horn through which the bore passes several times. This term has been selected in preference for ‘box’ as it more
Keys on clarinets and basset horns are referred to by the note they produce when activated. For the purposes of comparison, only those keys and their respective tone holes which are present on the Lotz clarinet and basset horns were compared on other instruments, even if more keys were present. The exception to this is when

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several instruments with more keys by one maker are extant – in this instance all the tone holes were measured and compared to assess for consistency within a makers’ output. The tone holes on the clarinet are numbered T1 to T7, with the exception of the thumb, which is referred to as the thumb hole. For basset horns, T7 is replaced by the F/C key. The fingers which operate the keys and stop the tone holes are referred to by number from 1 to 4 for each hand, not counting the thumbs. The fingers for the left hand are therefore as follows: left thumb; L1 (left forefinger); L2 (left middle finger); L3 (left ring finger); L4 (left little finger). The same pattern is followed for the right hand. The keys on a five-key clarinet are referred to, from top to bottom as: Speaker (left thumb); A key (L1); A flat/E flat (R4); F#/C# (L4); E/B (L4). Basset horn keys are referenced in the same way, with the addition of the basset keys, most commonly: D basset (RT); C basset (RT).

The sections of the bassoon are referred to as, from top to bottom: crook; wing; butt (descending and ascending); bass; bell. Where a wing extension or tuning slide is present, this is remarked upon in the body of the text. Bassoon keys may be referred to by either their operational or vent names. Operational names are those where the key is given the name of the pitch produced when the key is opened or closed, while vent names are those where the key is given the name of the tone hole which is influenced by its deployment. 28 Therefore, the lowest key on the butt section is known as both the G vent and F operational. 29 As the operational name is the same method as that applied to other instruments in this study, it is the system which has

29 White, “Fingering Charts,” 71.
been used in this dissertation. Tone holes which are operated by fingers and not closed by keys are numbered in the same way as clarinets discussed above.

Contrabassoons of the late 18th and early 19th centuries were made in a variety of shapes and section combinations. These may include any combination of a brass crook extension, an inverted butt, upper and lower wing connectors, and divided wing and bass sections. As the section configuration of contrabassoons plays a significant role in the comparative section of the relevant chapter, it is discussed more fully in the body of the text. The same principle for key and tone hole comparisons as used for clarinets has also been employed.

Figure i.3. Diagram of bassoon tone holes and keys demonstrating terminology used in this dissertation.\[30\]

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Total sounding lengths of bassoons and contrabassoons were found, where possible, by using a long rod to determine the difference between the distance from the top of the section to the cork, and the top of the section to the top of the bore at the window. This gave the bore diameter at the window of the instrument and allowed the calculation of the sounding length. Where a brass decoration is added to the top of the bell, this is called the coronet.

The sections of the flute are designated as follows, from top to bottom: headjoint; left hand section; right hand section; footjoint. Where the fingerhole sections are integral, this has been called the middle section. Flutes with only one or two keys have been the primary focus of this study and it is these keys which are mainly discussed in the text. The single central key is referred to by its operational name of D sharp.

Figure i.4. Diagram demonstrating flute terminology employed throughout this dissertation.\footnote{Image of flute taken from L.-E. Bergeron, Manuel du Tourneur, (Paris, 1792) as seen in Michael Wright, “Bergeron on Flute-Making,” The Galpin Society Journal 29, (May, 1976): 26 – 34, Plate 1.}

The sections of oboes and curved cor anglais are referred to, from top to bottom, as: upper section; lower section; bell. Angled cor anglais have the addition of a knee between the upper and lower sections. Upper and lower designations have been chosen in favour of left and right as many of the instruments in this study have the capability to be played with either hand uppermost. Two-keyed instruments have
been the primary focus of this study and, as with all previous instruments, oboes and cor anglais with extra keys have mostly been treated as two-key instruments except in instances where comparisons of one maker’s output has been necessary. These two keys consist of a central key, the C key, and a side key, the E flat key. Frequently the E flat key is replicated on both sides of the instrument in order to accommodate right or left hand uppermost playing positions.

The metal tube at the top of cor anglais is referred to as its crook, and the socket it sits in as the reed-well. This term is also applied to oboes. The expansion and contraction of the external shape at the top of both oboes and cor anglais is called the baluster.

**Figure i.5. Diagram demonstrating oboe terminology employed in this dissertation.**

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For all instruments, the portion of the key which comes into contact with the finger is called the touchpiece, the length of the key is called the shank, and the portion covering the hole is called the key-head. The method of mounting the keys is referred to as either brass saddles or wooden blocks, held in place either by pins or screws at the pivot point. For all instruments, the front of the instrument (where the finger holes may be found) is referred to as the frontal side and the back of the instrument (where the thumb holes may be found) is referred to as the dorsal side. Unless otherwise stated, all translations are the work of this author.

Stamps are recorded with descriptive elements, such as the symbol, described in square brackets [], while capitalization, punctuation and spacing is recorded exactly as reproduced on the stamp. A change of line is designated by a forward oblique (/), while two obliques (//) indicates a significant gap between the elements of the stamp recorded either side of it (such as a number or pitch designation appearing between finger holes, separate from the main stamp).

The Reference List contains works actually referenced in the body of the dissertation, while the Bibliography lists those works which were consulted but have not been cited in the text.
Chapter 1

Biographies

Introduction

Despite Theodor Lotz’s importance as an instrument maker, relatively little is known of his life. This chapter examines both archival evidence and that of other primary and secondary sources in order to establish a more consistent and thorough understanding of Lotz’s career. This is done primarily with the intention of establishing where he may have received his training and what influences acted upon his creations as a musical instrument maker. It will be argued that Lotz was not a native of Vienna, as is commonly thought. The bureaucratic situations governing instrument makers in Vienna at the time Lotz was active there will be examined, together with the biographies of a number of significant contemporary Viennese makers in order to place Lotz’s life and instruments in greater context. Evidence as to the type of tools and working methods available to makers at the time, and how this related to those in Lotz’s workshop, will also be presented.

Kirchheim

Hitherto, Lotz’s place of birth has been generally assumed as Vienna and he and his instruments have come to be considered a typical representation of Viennese instrument making in the latter part of the 18th century. A number of factors, detailed below, led the present author to believe that this was not the case and thus an alternative explanation was sought.

The first factor casting doubt on Vienna as the place of Lotz’s birth was his religion, recorded at his death in 1792 as *Evangelisch* (Protestant). Although the late 18th century, influenced by the values of the Enlightenment, saw a greater tolerance of religion, Vienna at this time was still overwhelmingly Catholic and Joseph II’s Toleration Edict (of which Hungarian Protestants were the prime beneficiaries) was not introduced until 1781. Furthermore, Catholicism was still a prerequisite to gain an apprenticeship with an instrument maker in Vienna.

A document offering a solution to the question of Lotz’s origins is the record of his first marriage, which took place in Pressburg (today Bratislava, but referred to in this work by its 18th century name) in 1777. This document records the names of both his parents and his father’s profession – “Fürstlichen Nassau-Weilburgischen Bau-Inspectors, wie auch Raths-Vervandten in Kirchheim...” [Building Inspector for the Princely Nassau-Weilburgs, also advisor to the poor in Kirchheim]. Enquiries to the archives in Kirchheim, Hesse, revealed that Lotz was indeed born in this town, and was baptized there on February 21st, 1746. This is two years earlier than previously thought, showing his age was incorrectly recorded at his death. The

2 Totenbeschauprotokoll, Wiener Stadt- und Landesarchiv.
4 According to a paper given by Dr. Eva Badura-Skoda at the annual meeting of the American Musical Instrument Society in 2009, only boys of respectable Catholic families were able to become apprentices to makers in Vienna.
5 Municipal Archives, Bratislava. Marriage Register 1764-1784, Nr. 298 (18 August 1777). I am grateful to Eric Hoeprich and Robert Sebesta for supplying me with a copy of this document.
6 Kirchenbüchern, Gemeinde Archiv Kirchheim. I am grateful to Herr Unfricht of the Gemeinde Archiv Kirchheim for carrying out the necessary searches to provide this information.
Totentheschauprotokol of 1792 records his age at death as 44,\textsuperscript{7} when in fact he was 46.

Plate 1.1. Map of Germany in 1777, from The New Universal Geographical Grammar, showing the state of Hesse outlined in red.\textsuperscript{8}

\textsuperscript{7} Totenbeschauprotokoll, Wiener Stadt- und Landesarchiv
\textsuperscript{8} Map acquired from Thomas Salmon, The new universal grammar: wherein the situation and extent of the several countries are laid down according to the most exact geographical observations, and the history of all the different kingdoms of the world, is interspersed in such a manner, as to render the study of geography both useful and entertaining, J. Tytler, ed., (Edinburgh: 1777, first published 1749). My thanks to Jenny Parkerson of the National Library of Scotland for her assistance in locating this map.
The Princely House of Nassau-Weilburg had employed a Hofkappelle since 1606, but it first began to grow to prominence during the reign of Count Johann Ernst (1675-1719). His son, Karl August, who came to power in 1719, was an absentee ruler, spending much of his time in Paris. The events of the War of Austrian Succession (1740-1748) however, forced him to return to his country of birth in the summer of 1741, when he made Kirchheim his principal residence. With the return of the Prince “an active musical life gradually bloomed, which came to full

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10 Lemacher, *Nassau-Weilburg*, 16.
11 Lemacher, *Nassau-Weilburg*, 16
development under the next successors to Karl August.”

Karl August died in 1753 and was succeeded by his son Karl Christian, whose wife, Princess Karoline, was a talented musician in her own right and who now lavished her attention on the development and maintenance of the Hofkappelle in Kirchheim. By the time Mozart visited Kirchheim in 1778 he described the orchestra in a letter to his father as “very enviable” and stated that musical academies were held every day.

It is not known exactly when Lotz left Kirchheim, but his date of birth places him in the town at a time when the musical life of the court had reached its peak. Furthermore, as the son of a court employee, he may have had increased access and exposure to these events than might otherwise have been the case. It is perhaps also pertinent to note that the great centre of music making – Mannheim – was only approximately 200km from Kirchheim. Mozart himself made this journey in 1778, taking eight hours.

Although the Nassau-Weilburg court in Kirchheim clearly hosted a thriving musical life, no record has yet been found of any instrument making activity. It is interesting to consider here, however, that the invention of the basset horn has been linked with this court. The first instance of this occurs in the Deutche Encyclopädie for 1781 in the definition for *clarinette d’amour*:

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16 In his search for documents relating to music and musicians of the Nassau-Weilburg court, Lemacher examined libraries and archives in The Hague, Karlsruhe, Kassel, Kirchheimbolanden, Koblenz, Luxemburg, Mannheim, Munich, Saarbricken, Speier, Weilburg, Weisbaden and Würzburg without result. (Lemacher, *Nassau-Weilburg*, 5)
Clarinettes d’amour are those clarinets newly introduced by three clarinettists of the Nassau-Weilburg court. They are lower than the ordinary clarinet and are in fact pitched in G. The third is like a bassoon and is marvellously effective for a bass continuo; it snarls like a stout metal gamba stop in one of those old organs.\(^1\)

The second, also from the *Deutsche Encyclopädie*, this time for 1785, gives a little more detail:

\[
\text{G is also the main pitch of the so-called Clarinets d’amour....These clarinets were invented by Polish clarinettists in Kirchheim at the princely Nassau court, and are Eb clarinets.}\(^{18}\)
\]

Grass and Demus speculate that the players mentioned in these entries could have been Enders (Endners), Schaumberger and Blech, and given that these three players were hired in August of 1772 and the first to leave did not do so until 1789 this supposition would appear to be correct.\(^{19}\) The attribution of the invention of the basset horn to these players is, however, difficult to substantiate and is, in this author’s opinion, the result of a misunderstanding. The three players came highly recommended by Count von Niepperg, citing “...die seltene Erfindung ihres


\(^{18}\) *Deutsche Encyclopädie*, vol. 10, 737 (1785), quoted in Rice, *Large Size Clarinets*, 98. Note the apparent anomaly between the nominal pitches of the instruments described in the *Deutsches Encyclopädie*. While the author describes the most common nominal pitch as G, it appears the clarinettists at the Nassau-Weilburg court had instruments pitched in E flat.

\(^{19}\) Grass and Demus, *Das Bassetthorn*, 77; Lemacher, *Nassau-Weilburg*, 24. Enders was given a life pension in 1789 but Blech did not leave the Hofkapelle until 1792 when the pressures of the French Invasion forced the dismissal of the entire Hofkapelle. (Lemacher, *Nassau-Weilburg*, 41). It is not known when Schaumberger left. Three more players, Habert, Mayer and Reyling, were hired on Enders retirement in 1789. (Lemacher, *Nassau-Weilburg*, 37).
Instruments, die Geschicklichkeit, womit sie dasselbe zu brauchen wissen.”[20] [the rare invention of their instrument, and the fitness with which they use them]. It is suggested that this wording in no way attributes the invention of the instrument to the players themselves but merely points out that the instrument itself is of unusual design.

In any case, Lotz would not have been a permanent residence of Kirchheim by this time, as will be demonstrated shortly, and therefore could not have been directly exposed to the influence of these players or their instruments. As these three players appear to have been the first hired by the court, it would seem safe to assume that Lotz was not employed there himself as a clarinettist, or learned from anyone who was. However, Lotz’s marriage certificate discussed above shows that his father was still employed by the court at least as late as 1777 (he did not die until 1782[21]) so news of developments at home may have reached Lotz through family communications.

Lotz as a performer

There follows a sizable gap before Lotz’s next appearance in the archival record and it is not until 1772 that he can again be identified. On December 17th of this year Lotz performed a clarinet concerto in Tonkünstlersocietät concert in Vienna.[22] The performance took place between movements of Hasse’s Oratorio “Santa Elena al

[21] I am indebted to Herr Unfricht of Kirchheimbolanden for assisting me with this information.
Calvario”. This notice indicates that Lotz was far from Kirchheim at the time the three new players with their basset horns were hired for the court orchestra there.

Few of the 18th century clarinet concertos with which we are familiar today date from before the 1780s. Although solo concertos first began to appear in the 1750s, and soloists such as Joseph Beer in Paris and John Mahon in London were performing in the 1770s, it was not until the 1790s that published works for solo clarinet became widespread. The earliest known clarinet concertos are those by Johann Stamitz (1754-1755), Michael Haydn (1764) and Carl Stamitz (c.1771).

This makes Lotz’s performance in the Tonkünstlersocietät, and the work he performed, amongst the earliest recorded. To this author’s knowledge it is certainly the earliest recorded performance of a clarinet concerto in Vienna, but this is a difficult claim to maintain given that thorough documentation of concert life in the city did not exist until the foundation of the Tonkünstlersocietät in 1771. Prior to this, there had been a lack of an organised concert series or concert society. This naturally makes any inferences regarding the exact number and nature of clarinet performances in Vienna at the time difficult to draw with any confidence, yet it is believed that the evidence presented above makes a plausible case for the conclusions given here.

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23 Claudia Pete, Geschichte der Wiener Tonkünstler-Societät, (Institut für Musikwissenschaft Wien: unpublished dissertation, 1996), 80. My thanks to Thomas Kiefer for bringing this reference to my attention, and to Benedikt Hager of the library of the Institut für Musikwissenschaft Wien for making the relevant sections of the dissertation available to me.
24 Rice Classical Period, 109-110.
25 Rice Classical Period, 150.
26 Morrow, Concert Life, 48-49.
27 Morrow, Concert Life, xvii.
The Stadler brothers appeared in *Tonkünstlersocietät* concerts shortly after Lotz, performing in the series in 1773, again in 1775, and relatively regularly from 1784. Lotz was Anton Stadler’s senior by seven years, and in the first of these performances the Stadler brothers were only twenty and eighteen years of age respectively, and thus unlikely to have made significant contributions to the musical life of Vienna prior to this.

Lotz’s performance in the *Tonkünstlersocietät* suggests he was a member of the society which indicates that, at this early date, Lotz was a resident of Vienna or participated regularly in its musical life. Membership to the society, which aimed to provide pensions for musicians no longer able to earn a living, or their widows and orphans, was achieved through the payment of an entrance and annual membership fee - a financial commitment which would presumably only be attractive to those who believed they could benefit from it. It Lotz was a member of the society, he had ceased to become so in 1788, when the society’s records show he applied for membership. Interestingly, Lotz’s application was refused as he was no longer a practicing musician.

The year before Lotz’s performance for the *Tonkünstlersocietät*, the Cardinal Prince de Rohan of Strasbourg arrived in Vienna to take up residence in the city. Claudia Pete, in her dissertation on the *Tonkünstlersocietät*, quotes the *Realzeitung’s* review

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28 Morrow, *Concert Life*, 242; 244; 286.
30 *Wiener Stadt- und Landesarchiv*, TKS 4.3.1788, A-Ws, Haydn-Verein, A2/1. My thanks to Michael Lorenz for sharing this document with me. This document also confirms Lotz’s date of birth as February 21st, 1746.
31 *Wiener Stadt- und Landesarchiv*, TKS 4.3.1788, A-Ws, Haydn-Verein, A2/1.
of the 1772 concert in which Lotz is described as a member of the Cardinal’s orchestra, but when he joined the orchestra is not known. While Lotz may have become a member of the orchestra once it had arrived in Vienna, the possibility that he was already a member before it arrived must be considered. This sequence of events could certainly account for Lotz’s apparently sudden appearance on the Viennese musical scene in 1772, at the age of twenty-six. Sebesta, working on the hypothesis that Lotz was born in Vienna, suggests that it was around this time that he left the city to take up residence in Pressburg. Sebesta does not elaborate on the motivation for such an action.

Recent discoveries by Michael Greenberg in French archives relating to musicians add weight to the suggestion that Lotz accompanied the Cardinal’s orchestra from Paris, rather than joining the orchestra once it arrived in Vienna. A list of instrumentalists from the Académie Royale in 1769 includes a clarinettist called Lotz who was employed as an additional player. A clarinettist called Lotz is listed again amongst the external (non-resident) musicians in the Musique de Roi at Versailles in 1770. It will be remembered from above that the following year, Cardinal de Rohan arrived in Vienna and in 1772 Lotz begins to appear in the documentary record in that city as a performer. While the absence of a Christian name in the French sources makes it at present impossible to conclude with absolute certainty

32 Pete, Wiener Tonkünstler-Societät, 80. The De Rohan archive in Paris states that the archive contains no information regarding employment of musicians in the court.
that it is the same Lotz in Paris, Versailles and Vienna, the evidence is convincing. Why Lotz was apparently working as a musician in Paris is also not elucidated by these documents. The wedding of Marie Antoinette to Louis XVI did not take place until 1770, so Lotz could not have been one of the many musicians who accompanied her to her new home. He may have arrived in France as a journeyman as part of the process of becoming an instrument maker (outlined in greater detail later in this chapter) or he may simply have gravitated towards a wealthy and culturally vibrant city where work opportunities abounded.

Pamela Weston claims Lotz did not leave Cardinal de Rohan’s employment until 1774, the same year the Cardinal left Vienna amidst considerable scandal. Weston also claims that it is around this time Lotz joined Prince (Johann?) Esterházy’s orchestra, also in Vienna. Other sources record that he was employed at Esterhaza itself. No archival record is known detailing Lotz’s employment in the orchestra in Vienna, although the circumstance is not impossible. Robbins Landon reports there is no record of Lotz in the archives of Esterháza. As Lotz’s employment by Cardinal de Rohan is similarly based on secondary sources and not substantiated by archival records, it should also be treated with caution. It may be that Lotz was not a permanent member of either of these orchestras, and only played occasionally when required.

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36 Weston, More Clarinet Virtuosi, 165.
37 Weston, More Clarinet Virtuosi, 165. Weston gives no source for this information and it has therefore not been possible to ascertain its authenticity.
38 Grass and Demus, Das Bassetthorn, 116.
Although Lotz may have left the Cardinal’s employment to remain in Vienna, by 1775 he appears to have been living and working in Pressburg. Here he is recorded in the Preßburger Zeitung in 1775 as performing his own clarinet concerto.\(^{40}\) This shows that Lotz not only had considerable talents as a performer, but also as a composer. Indeed, Lotz seems to have applied himself to composition in this year, producing sixty-seven pieces for Prince Nikolaus Esterházy’s wind band, and a Cassation for two horns, two clarinets, two violins, viola, bassoon and bass, which was published by Breitkopf & Härtel.\(^{41}\)

The record of Lotz’s marriage to Maria Elizabeth Kluger of 1777 states his position and title as Erste Kamer Musicus (First Chamber Musician) in the orchestra of Cardinal Batthyány in Pressburg.\(^\)\(^{42}\) From 1722, Hungary (of which Pressburg was then a part) began to enjoy an extended period of peace and as a result of this the second half of the 18\(^{th}\) century saw a virtually unprecedented cultural boom.\(^{43}\) This resulted in the foundation and expansion of numerous Hofkapellen in noble households, such as those in Esterháza, Großwardein and Kohfidisch (in the Erdödy household).\(^{44}\) As the principal city of the region, Pressburg had a large share in this

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\(^{41}\) János Hárich, “Documents from the Esterházy Archives in Eisenstadt and Forchtenstein,” *Haydn Jahrbuch* 19 (1994): 1-359, 128-129; Eugen Brixel, *Klarinetten Bibliographie* Vol. 1 (Wilhelmshaven: Verlag der Heinrichshofen-Bücher, 1997), 353. The publisher has been approached and has no record of this work. However, significant portions of their archive have been lost through fire.

\(^{42}\) Municipal Archives, Bratislava, Marriage Register 1764 – 1784, Nr. 298 (18 August 1777).


\(^{44}\) Meier, “Die Preßburger Hofkapelle,” 82.
cultural growth, with the noble houses of the city also forming their own Kapellen, such as those of Grassalcovicz, Sachsen-Teschen, and of course Batthyány. Batthyány (1727-1799) had come to Pressburg as an Archbishop in 1775 and by 1778 had attained the rank of Cardinal – making him the highest ranking official of the Roman Catholic Church in Hungary. At the end of 1775 or very early 1776, as evidenced by a concert report in the Preßburger Zeitung of 17th February 1776, Batthyány began his Hofkapelle, commissioning the cathedral organist Anton Zimmerman (1741-1781) with its development. It is likely that Zimmerman sought the greater percentage of the musicians for the new court from Vienna, but also from within other Hofkapelle in Pressburg and Esterháza. By 1778, the Hofkapelle consisted of twenty-one members – a significant number in comparison to other courts of the time. By 1780 this had expanded to twenty-four permanent members. By comparison, in 1787, the Erdödy Hofkapelle regularly employed only ten players – four violins, two violas, a cello, string bass and two trumpets, while Fürst Johann von Schwarzenburg regularly employed only eight players. Eight – a convenient number for the performance of harmoniemusik – was a popular size, with Fürst Alois von Liechtenstein also employing eight musicians by 1789.

45 Meier, “Die Preßburger Hofkapelle,” 82.
46 Meier, “Die Preßburger Hofkapelle,” 83.
47 Meier, “Die Preßburger Hofkapelle,” 83.
48 Meier, “Die Preßburger Hofkapelle,” 83. It is interesting to note here that, although no definite connection has been proven linking Lotz to Esterháza, this makes yet another possible point of connection.
49 Meier, “Die Preßburger Hofkapelle,” 83.
which had grown to twelve by 1806. At this time (the 1780s), Grassalkovics was one of the few to have a similarly sized Kapelle to Batthyány, but by 1796 this too had been reduced to a *harmonie* group, under the direction of Raymund Griesbacher.

Lotz not only played first clarinet in the Batthyány orchestra, together with Michael Pum as second (and who also doubled on violin), but also viola. In addition to these duties, he was responsible for the running and direction of rehearsals and at an annual salary of 600 Gulden was one of the highest paid members of the orchestra. In addition to this substantial remuneration, Lotz would have benefitted from free board, expenses, service clothing and fuel for fire. Perhaps these years were the financial base for the wealth evident in Lotz’s possessions after his death.

Some of Lotz’s concert activities from this time are recorded in the *Preßburger Zeitung*. A report of a concert which took place on the 4th December 1776 states:


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55 Meier, “Die Preßburger Hofkapelle,” 84. Zistler, the administrative leader, was the highest paid at 1000 fl, followed by the cellist Hammer at 800fl (whose fame probably accounted for his significant salary), with Czervenka the bassoonist at 700fl. Most string players received no more than 500fl, and the 2nd bassoonist and 3rd hornist were paid the least, receiving 240fl each. (Meier, “Die Preßburger Hofkapelle,” 85). New wind players engaged by the Esterhazy court in 1761 received an annual sum of 240fl, while the two clarinettists engaged in December of 1790, Dionysius Zachmann and Joseph Baumgartner, received 425fl annually. (Roger Hellyer, “The Wind Ensembles of the Esterházy Princes, 1761 – 1813,” *Haydn Yearbook* 15 (1984): 5 - 92, 6; 19.
56 Meier, “Die Preßburger Hofkapelle,” 85.
57 *Preßburger Zeitung*, “Inländische Vorfälle,” Sunday 7th December, 1776.
Evidence of Lotz as an instrument maker

Lotz maintained his position in the Batthyány orchestra until its disbandment in 1783, under pressure from Kaiser Joseph II, who disapproved of the influence of ‘worldly’ music on a religious court. During Lotz’s employment with Batthyány, three of his four children were born, and the first evidence of Lotz as an instrument maker can be found. The earliest record in the literature of Lotz as a maker occurs in Carl Friedrich Cramer’s *Magazin der Musik* of 1783, where Lotz is described in the article on the basset horn as, “...der berühmte musikalische Instrumentenmacher Theodor Lotz zu Presburg [sic], in Ungarn;” [the famous musical instrument maker Theodor Lotz of Pressburg, Hungary] who had “Verbessert und zu der jetzigen mehreren Vollenkommenheit gebracht hat...” [improved and brought to the greatest perfection] [the basset horn].

This entry provides us with several facts regarding Lotz’s career as a maker. Firstly it shows that, despite a lack of evidence for Lotz’s activities as a maker prior to this, he must have been pursuing instrument making for some time in order to establish a reputation as ‘famous’. Secondly, he must have achieved considerable skill and already be advanced in his craft to have sufficient knowledge and abilities to

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59 Sebesta, “Theodor Lotz,” 55. Of the four children (Christian Elizabeth, 24/07/1779; Friedrich Theodor, 04/11/1780; Phillipus Josephus, 10/10/1782; Anna Theresia, 21/10/1783) only Theodor, Joseph and Theresia are recorded in Lotz’s testament, suggesting Elizabeth had died in infancy.
undertake innovative and original improvements to an instrument, particularly one as complex as the basset horn.\textsuperscript{61}

E.L. Gerber’s \textit{Historisch-Biographisches Lexicon der Tonkünstler} of 1790 contains a specific entry for Lotz which records him as an instrument maker in Pressburg in 1782.\textsuperscript{62} Although no instrument survives by Lotz bearing a stamp related to Pressburg, these two sources show that he certainly was active as a maker in this city. Haupt, however, claims that it wasn’t until the later years of his life that Lotz began to make instruments,\textsuperscript{63} thereby suggesting he did not make instruments in Pressburg. As Haupt gives no evidence for this claim, and given the evidence presented above, this claim must be considered erroneous.

As late as 1841, Gustav Schilling also considered Lotz of sufficient importance to include in his \textit{Encyclopädie der Gesammten musikalischen Wissenschaften der Universal-Lexicon der Tonkunst}, again highlighting his fame and his contribution to basset horn design:

...in der zweite Hälfte des vorigen Jahrhunderts berühmter Balsinsrumentenmacher zu Preßburg, trug besonders Viel zur Verbesserung des damals noch sehr unvollkommenen Bassethorns bei, und wirklich sind auch unter den älteren Instrumenten diejenigen Bassethörner die Schönsten, welche im seiner Fabrik verfertigt wurden. Auch seine Clarinetten und Fagotte sind oder vielmehr waren einst sehr geschätzt, doch bei Weitem nicht so wie seine Bassethörner.\textsuperscript{64}

\textsuperscript{61} It should be noted that after this introduction, Cramer proceeds to outline a more ‘primitive’ sickle shaped instrument, which has left Lotz’s actual innovations open to much speculation. This will be more fully discussed in Chapter 3.

\textsuperscript{62} Gerber, \textit{Lexicon der Tonkünstler}, 824.

\textsuperscript{63} Haupt, “Wiener Instrumentenbauer,” 158.

[...in the second half of the previous century the famous wind instrument maker of Pressburg carried out many improvements to the then very incomplete basset horn, and amongst the old instruments his were the most beautiful. His clarinets and bassoons were also greatly prized, but not so much as his basset horns.]

At the time of these innovations to the basset horn, Lotz would have been aged thirty-seven. If Lotz had followed a traditional route of apprenticeship it is most likely he would have begun his training at the age of around fourteen, as was the practice in England at the time, where the term of apprenticeship was seven years.65 The author of Art du Faiseur d’instruments de Musique et Lutherie puts the length of apprenticeship at six years.66 Sprengel, writing in Germany roughly contemporaneously to when Lotz may have been undertaking his training, states that a student must train for three years, but if he wished to become truly proficient in his art then he must expect to train for four to five years.67 Using these standards as a guide, this would mean that by the early 1780s Lotz had been making instruments for approximately twenty years, at least sixteen of those fully qualified, certainly sufficient time to have acquired the necessary skills for the innovations described by Cramer and Gerber. It should also be noted that the apprenticeships referred to above apply to wood turners, and additional training may have been required for instrument makers.

67 P.R. Sprengel, Handwerke in Tabellen, (Berlin: Verlag der Buchhandlung der Realschule, 1767), 133.
However, Lotz’s earlier and relatively well documented activities as a player and composer with no suggestion of instrument making intimate that he perhaps was primarily a player who then became involved with instrument making rather than an instrument maker who also played a little. If this were the case, it makes it somewhat less likely that Lotz was trained in instrument making from a young age by a family member, or followed a traditional route of apprenticeship. Nevertheless, Lotz must have learned his skills somewhere, although his innovative approach perhaps indicates a mind relatively unfettered by formal education. It is interesting to note here that amongst the duties of a musical instrument maker was sometimes to teach his pupil the rudiments of music.\(^6^8\)

It is necessary to mention here an instrument bill in Český Krumlov of 1780, for a bassoon for the Schwarzenberg court bassoonist Prochaska, made by Anton Lotz of Pressburg.\(^6^9\) The identity of this maker has not yet been satisfactorily established. It has been posited that this is either a relative of Lotz or Theodor himself under another name.\(^7^0\) As the name Anton does not appear in any official documents relating to Theodor, whose full name on his baptismal record is Johann Theodor, this latter explanation is not feasible. The statement by Waterhouse that Anton Lotz supplied the Viennese court with clarinets over the period 1784-86 is considered by the present author to be erroneous, probably the result of confusion arising from

\(^{68}\) Michael Nagy, “Zum Fagottbau in Wien,” *Bericht über die Vierte international Fachtagung zur Erforschung der Blasmusik Uster/Schweiz 1981*, (Tutzing: Hans Schneider, 1984): 25 - 76, 29. This practice was brought about by court decree in 1797, but there is no reason to suppose it was not informally practiced before this time.


these instruments having been supplied by Theodor during this time.71 No instrument is known to survive bearing Anton’s name.72

Nor was Anton a brother of Theodor, whose only siblings were two younger sisters.73 A possible hypothesis offered here is that Anton was an older relative, perhaps a cousin or uncle, resident in Pressburg and may have been responsible for Lotz’s education as an instrument maker. This would account for Lotz’s professional activities in Vienna and Pressburg at a great distance from his home town. It is interesting to note a marriage record of Anton Kilian Lotz in the church of St. Ulrich in Vienna in 1733.74 Anton Kilian Lotz is described as a student (Studiosus) from Dündorf in Franconia.75 Although it has not been possible to establish the location of Dündorf itself, Franconia is the neighbouring state to Lotz’s place of birth in Hesse. Without further information it is impossible to determine if both documents refer to the same Anton Lotz, but arguing against this is the fact that St. Ulrich is a Catholic diocese and a relative of Lotz would be likely to be Protestant, like himself. Furthermore, the date of the marriage would place Anton Lotz approximately in his late sixties to early seventies at the time of the receipt for the bassoon. Whilst not ruling out the possibility, most makers in this study – if still living - had retired by this age. Neither of the witnesses to the marriage are instrument makers – one a

71 Waterhouse, New Langwill, 243.
72 One extant instrument attributed to Theodor (a flute) is marked only LOTZ. With no identifying first name or city, the possibility that this instrument was made by another family member cannot be ignored. This instrument is discussed fully in Chapter 5.
73 I am again indebted to Herr Unfricht of Kirchheimbolanden for assisting me with this information.
74 Dr. Albert Starzer, ed. Quellen zur Geschichte der Stadt Wien Band VI, (Wien: Altertums-Vereines zu Wien, 1908), 188; Trauungsmatrik 1733, Pfarrkanzlei St. Ulrich. My thanks to the staff at the church of St. Ulrich for providing me with a copy of the original document.
75 Trauungsmatrik 1733, Pfarrkanzlei St. Ulrich.
miniature maker and the other a public servant, and the bride was the widow of a valet.\textsuperscript{76}

**Plate 1.3.** Map from *The New Universal Geographical Grammar* (1777), showing the neighbouring states of Hesse and Franconia outlined in red.

The possibility that Lotz was exposed to any number of different influences in the years between his birth and innovations to the basset horn cannot be ignored. It is particularly significant to consider that, in the 700 or more kilometres between Kirchheim and Vienna, Lotz could have passed through Würzburg, Nuremberg, Nürnberg, and Tyrol.\textsuperscript{76} Trauungsmatrik 1733, Pfarrkanzlei St. Ulrich.
Regensburg, Passau, Wels and Linz, all cities with a thriving instrument making community and many with significant connections to the history of the basset horn.

A further point to consider is Lotz’s appearance in a number of dictionaries of string instrument makers. The information contained in these sources is somewhat confusing and its accuracy and sources difficult to establish. Lütgendorf was the first to record Lotz as a string instrument maker, followed by Vannes, Henley and a further two volumes by Jalovec. The latter four works largely replicate the information found in Lütgendorf and it can be supposed they are derived from the earlier work.

All the works largely agree on much of the biographical information known about Lotz and also mention his activities as a wind instrument maker, but not as a performer or composer. These works also agree on Pressburg and Vienna as cities of activity, but also add Brno to these. Brno is close to both Vienna and Pressburg and, with a large Protestant community at the time, does provide a possible link with Lotz. Further research in archives and contemporary newspapers in Brno may provide evidence of Lotz’s presence in this city.

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These volumes also give an unrealistically early date of 1740 for Lotz’s activities as a maker. Given that Lotz’s year of birth has now been established as 1746 this date clearly cannot apply to Theodor. It may, however, indicate the activities of a family member of the same name. The possibility of an unrelated maker bearing the same name is considered by the author as unlikely, given the number of other facts which do coincide with Lotz’s own career. Jalovec gives a final date for Lotz as 1810.\(^{80}\) If this is taken from existing dated instruments or archival evidence, it could indicate the existence of another relative other than Lotz’s own children, who did not follow him into his trade.\(^{81}\)

Jalovec indicates that some violins are extant and describes their characteristics, but does not indicate where these instruments may be found.\(^{82}\) He describes the instruments of good quality with a pale brown varnish and highly arched.\(^{83}\) If Lotz’s name does indeed appear on some string instruments, it does not necessarily follow that he was their maker. It may be that he repaired these instruments and marked them with his name, or that he dealt in string instruments, selling on the work of others. It will be remembered, however, that Lotz was also a string player so his role as a maker or repairer of string instruments is not entirely implausible. Furthermore, three violins were listed amongst his effects after his death.\(^{84}\) These were not listed amongst the items in his workshop and do not appear to have gone to auction, but

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\(^{80}\) Jalovec, *German and Austrian Violin-Makers*, 232.

\(^{81}\) Sebesta, “Theodor Lotz,” 55. His eldest son went in to business and lived in Pest, whilst his younger son entered the army. (Sebesta, “Theodor Lotz,” 55).

\(^{82}\) Jalovec, *German and Austrian Violin-Makers*, 232. Enquiries amongst string instrument specialists has shown that Lotz is entirely unknown to them.

\(^{83}\) Jalovec, *German and Austrian Violin-Makers*, 233. The author has had no success in tracing these instruments.

instead are listed in the inventory amongst sundry furniture and twelve unfinished bassoons and work tools.

If Lotz made string instruments, it was certainly a secondary occupation to that of wind instrument manufacturer, for which considerably more evidence survives and which can furnish more details of his life. As stated above, the first mention of Lotz as a maker is Cramer’s work of 1783. Immediately after this comes further evidence of Lotz as a maker in the form of bills for the Hoftheater in Vienna. These exist for the years 1784 to 1786, during which time Lotz supplied the Hoftheater with a total of four clarinets together with Mutationen. Two of these instruments were also provided with cases. It is most likely these instruments were for the use of the Stadler brothers, who had been working on a freelance basis for the court orchestra since 1779, but had held permanent posts from February of 1782.

**Court appointment**

Lotz moved to Vienna from Pressburg in September of 1785. This can be established from an advertisement placed in the Wiener Zeitung of September 7th, 1785, in which Lotz announces his appointment as k.k. Hof- und Kammerinstrumentenmacher and the commencement of his residence in Vienna from the end of the month. Interestingly, Lotz describes himself as both a musician and musical instrument maker in this advertisement (“...Tonkünstler und

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87 Weston, More Clarinet Virtuosi, 246-247.
88 Wiener Zeitung, 7th September, (1785), 2109.
musikalische Instrumentenmacher...”), implying that he still actively pursued both these areas.

Der sonst in Presburg wohnhafte und sehr bekannte Tonkünstler und musikalische Instrumentenmacher, Theodor Lotz, gibt allen Kennern und Liebhabern hiermit Nachricht, daß, nachdem er aus allerhöchsten Gnaden Sr. Kais-Majestät, in Rücksicht seiner besonderen Geschicklichkeit in seiner Wissenschaft, als K.K. Hof- und Kammerinstrumentenmacher gnädigt aufgenommen worden, er bis Ende Septemb. 1785 seinen Wohnort in Wien nehmen, und auf der alten Wieden nächst den grünen Baum No. 67 zu erfragen seyn wird... 89

[Theodor Lotz, famous musician and instrument maker currently living in Pressburg, gives hereby notice to all Kennern und Liebhabern, that, in consideration of his exceptional skill in his craft, he has been granted by the high Grace of His Majesty the Emperor the title of K.K. Hof- and Kammerinstrumentenmacher. He will be taking up residence in Vienna at the end of September, and can be enquired for in the alten Wieden by the green tree No. 67...]

Before leaving Pressburg however, Lotz had married his second wife, Maria Barbara Heldenfeld, on January 31st 1785, his first wife having died in childbirth. 90 Lotz’s title on this marriage certificate is given as Thon-kunstmeister. 91

It is perhaps significant that Lotz only returned to Vienna after Joseph II’s Toleration Edict had taken effect. Although persecution of Protestants in Vienna in the late 18th century had not been as violent as in previous years, restrictions were still placed on where and how their churches could be built and since 1732 Protestants had been excluded from all official posts. 92 Furthermore, as discussed below, the court

89 Wiener Zeitung, 7th September, (1785), 2109. Remainder of advertisement quoted in Chapter 4.
92 Bérenger, A History, 102.
appointment kept him independent of the guilds, and therefore also independent on any restrictions placed by them on the grounds of religion.

Investigations in the *Hof-, Haus-, und Staats Archiv* (Court and State Archives) in Vienna have failed to reveal any further documentation regarding Lotz’s appointment. Documents in the *Obersthofmeisteramt, Oberstkämmereramt* and *Obersthofmarschallamt* were searched but yielded no traces of Lotz or his appointment. Documents for later court appointments, such as those for Raymund Griesbacher and Martin Lempp were easily traced, as were several documents relating to the employment of the Stadler brothers. The lack of any documentation regarding Lotz could be the result of one of several reasons.

Firstly it may imply that Lotz’s appointment consisted of a title only, rather than a salaried position to the Court. This would mean his business would be run much as that of any other instrument maker in Vienna, but he would have enjoyed the additional status of the Imperial title and stamp. If this were the case, one might expect to find further advertisements of Lotz’s business in the *Wiener Zeitung* in order to generate income, other than that quoted in part above. Makers such as Friedrich Lempp, who held a privilege from the court but not a salaried position, placed several advertisements in this newspaper during his career. However the quoted advertisement appears to be the only such which Lotz entered in the newspaper.

This suggests that he was a salaried employee of the Court, and thus had no need to advertise his business in the *Wiener Zeitung*. This is further borne out by the fact
that Lotz’s position on both the *Totenbeschauprotokoll* and *Sperrs-Relation* is recorded as *Königl. priv. Instrumentenmacher* (other makers in this study are recorded in similar documents as simply *Instrumentenmacher*).

This prompts the question as to why no record of Lotz’s appointment exists in the appropriate archive. As with many archives, large portions of the holdings of the Hof-, Haus- und Staatsarchiv have been lost or destroyed, which may account for the absence of any documents pertaining to Lotz. A further point to consider is that, from 1780 onwards the reformations of Joseph II, having succeeded his mother Maria Theresia, saw great changes in the style of government and all aspects of the management of the Empire.\(^9\) It may be that some records were not faithfully kept in this period of readjustment and reorganisation.

Adding further weight to the hypothesis that Lotz’s appointment was as a salaried employee to the court, his address at his death is recorded as the *Stahrembergischen Freyhaus an der Wieden*. It is this author’s opinion that Count Stahremberg was *Hofmusikgraf* at the time, the administrative official responsible for the management of musical matters in the court, as many documents relating to music in the court from this time bear his signature. In terms of Lotz’s appointment, it is significant therefore to consider he may have been living in a house owned by the *Hofmusikgraf*.

Further evidence of Lotz as a performer comes from 1785, although not as a clarinettist. In the same advertisement announcing his relocation to Vienna, Lotz describes his newly invented contrabassoon. He refers to a performance in which he

played the instrument himself, which took place on March 12th in the *k.k. Nationaltheater*, in the presence of the Emperor with the *k.k. blasenden Kammerharmoniemusik*.\(^{94}\)


[He has also created a large Contrabassoon.... Herr Lotz has already had the great honour to play this instrument here both in the presence of the Kaiser, and also in a large musical Academy in the K.K. National Theatre with the K.K. Wind Chamber Harmonie, heard with great approval by the public...]

The exact details of the concert are not known but as it took place before Lotz’s removal from Pressburg to Vienna it demonstrates that Lotz maintained some standing and connections as a performer in Vienna whilst continuing to live in Pressburg. Indeed, it may have been exhibitions of his innovative instruments such as this in the presence of the Kaiser which contributed to his selection as *Hofmusikinstrumentsmacher*.

Lotz performed on his new contrabassoon twice more in this year, on both occasions in concerts organised in and for the Viennese Masonic Lodges. The first of these occurred on November 17th and was the premiere of Mozart’s *Maurerische Trauermusik* K. 477, written for the Lodge of Sorrows to commemorate the deaths of Duke Georg August of Mecklenburg-Strelitz and Count Franz Esterházy von

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\(^{94}\) Morrow, *Concert Life*, 172; *Wiener Zeitung*, 7th September, (1785), 2109.
\(^{95}\) *Wiener Zeitung*, 7th September, (1785), 2109.
The fact that this work was composed in July of 1785, before Lotz moved to Vienna, indicates that his contrabassoon had been developed sometime before this and also implies that Mozart knew of the instrument, thus suggesting that the connection between Mozart and Lotz was of longer standing than hitherto supposed.

The second concert took place less than a month later on December 15th and was a Masonic benefit concert in aid of basset hornists and Freemasons Anton David and Vincent Springer. In this instance Lotz played his new contrabassoon in a now lost Partita for six wind instruments by Anton Stadler.

**Lotz and Freemasonry**

In both of the Masonic performances in which Lotz played in 1785, he was described as ‘Brother Lotz’, demonstrating that he was himself a Freemason. It is therefore relevant to discuss here Lotz’s involvement with Freemasonry. Lotz joined the Freemasons in Pressburg and although his name does not appear in any Viennese lists, his involvement in these concerts and his designation as ‘Brother’ implies a continued and active involvement with the lodges in Vienna.

Freemasonry played a significant role in the social, political and artistic life of the 18th century, and particularly so in Vienna. A brief examination of its role and ideals

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97 Lawson, “Basset Clarinet,” 489.
98 Lawson, “Basset Clarinet,” 489.
will be appropriate here in order to give further understanding of Lotz’s place in society.

Freemasonry was established in Austria in 1742. Throughout its history, Freemasonry has tended to be viewed by the general public and historians alike in a number of different ways, from condemnation to admiration. An 18th century French work in praise of drunkenness highlights one of the popular conceptions of Freemasonry when describing “Free Masons and other Learned Men, that used to get drunk”. The composer Ignaz Seyfried pointed out that in his later years Mozart frequented “eating lodges”, where “the brethren busied themselves...with games, music & the many pleasures of a well-covered table.” Sebesta also hints at a more dissolute association with Freemasonry when he comments that:

His [Lotz’s] Will and other legal documents illustrate an attitude of general indifference to financial problems as well as a certain disregard of his children, whom he abandoned (except for his eldest son) at Presbourg [sic] without an education when he left for Vienna. We should add that in Vienna Lotz was identified as a member of the Masonic lodge Zur getrönten [sic] Hoffnung, and the similarity of his lifestyle to that of his colleagues and fellow lodge members Anton Stadler and Wolfgang Amadeus Mozart is particularly marked.”

This presents only one view of Freemasonry, however, and a rather popularized and biased one. There were other aspects to Freemasonry which could account for Lotz’s involvement with the movement. At a fundamental level, Freemasonry had

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100 Curl, *Art and Architecture*, 137.
originally been a society for skilled craftsmen, and membership implied a higher level of skill than that of non members. Its symbols and practices were closely linked with geometry and tools, many of which would have been familiar to Lotz in his professional capacity. It could, therefore, have offered an attraction in this sense for a skilled craftsman of any trade. As Freeman points out, “One of the principal attractions of membership was an affirmation of social superiority and exclusivity...” In this context it is important to also consider Curl’s remark that “...Freemasonry was a focus for Austria’s intelligentsia, and that the important Lodges had Bretheren who were eminent in all branches of life.” This would certainly add exclusivity and elitism to the attractions of Freemasonry. Again Freeman points out, “The most important consideration regarding membership was the idea that everyone who joined belonged to some sort of elite, especially a social or intellectual elite.”

A significant aspect of Freemasonry when considered in reference to Lotz was its well known religious tolerance and particular admiration of Protestantism. Although, as has been discussed, Vienna at this time was relatively tolerant of religious differences, it was primarily a Catholic State and people were more or less defined by their religion. It may be that this overt tolerance within the Lodges enabled Lotz to feel more welcome and at home than in society at large. However,

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107 Freeman, “Mozart,” 139-140.
considering Lotz’s previous employment with two high profile members of the Catholic clergy, it seems unlikely that he used religion as a defining factor and it may well be that, if religion played a role in his membership, the attraction lay on the side of his fellow Masons rather than with Lotz himself.

Freemasonry was a centre for enlightened thought and discussion and was one of the fundamental intellectual forces of the 18\textsuperscript{th} century.\textsuperscript{110} The 18\textsuperscript{th} century in turn is considered the pinnacle of Masonic development.\textsuperscript{111} Its aims were largely humanitarian and it was intended that “...through Enlightenment, education, knowledge, reason and nature, Society as a whole could be improved, would be raised in tone, and could benefit everyone, not least the lower orders.”\textsuperscript{112} This implies that the Society would hold an attraction for intelligent, free-thinking individuals who were concerned with social and political reform. In reference to Lotz, this may suggest a relatively high level of education and an inquiring mind which sought to be well informed on current issues, or at least a desire to create the impression of such. It is perhaps interesting to note here that, according to Freeman, prospective Freemasons were carefully screened for their “social connections, a likable disposition, and a willingness to uphold traditions of secrecy.”\textsuperscript{113}

Perhaps most significantly for a man in Lotz’s position, however, Freemasonry provided an excellent basis for networking. According to Freeman, this had been the

\begin{flushend}
\textsuperscript{111} Nettl, \textit{Mozart and Masonry}, 5.
\textsuperscript{112} Curl, \textit{Art and Architecture}, 138.
\textsuperscript{113} Freeman, “Mozart,” 139.
\end{flushend}
true function of Masonic lodges for centuries.\textsuperscript{114} The members of the Viennese Masonic lodges would certainly provide fertile grounds for Lotz in this respect. It is well known that a number of eminent musicians were members of the lodges, including Mozart, Stadler and Haydn. Alongside these however, were a number of aristocrats (whose numbers counted for almost half the membership of the “True Concord” Lodge and more than half of “Crowned Hope”), members of the lesser nobility, government bureaucracy, merchant and professional classes (mostly to be found in the “Beneficence” and “New Crowned Hope” Lodges).\textsuperscript{115} Many of these men would not only have been in a position to require instruments from Lotz, either for their own use or that of a player or organisation whom they represented, but would also have had the means to purchase it.

The use of Masonic lodges as mechanisms for career advancement appears to have been widely acknowledged at the time and it was frequently claimed the lodges were full of opportunists.\textsuperscript{116} As a contemporary observer remarked:

> At that time it was not unadvantageous to belong to this brotherhood, which had members in every circle and had known how to entice leaders, presidents and governors into its bosom. For there, one brother helped the other.\textsuperscript{117}

This idea of assistance to fellow Masons is seen in the many benefit concerts organised for visiting brothers as well as home lodge members, but clearly also had a more mercenary application.

\textsuperscript{114} Freeman, “Mozart,” 138-139.  
\textsuperscript{115} Solomon, Mozart, 330.  
\textsuperscript{116} Solomon, Mozart, 329.  
\textsuperscript{117} Caroline Pichler, quoted in Solomon, Mozart, 569 note 45.
The peak of Freemasonry in Vienna occurred at a politically critical time, and its egalitarian ideals and secrecy quickly led it to become an object of suspicion from the ruling classes. After the death of the Mason-friendly Emperor Joseph II in 1790 the lodges faced an uncertain future, and in the face of increasing suspicion and threats to ban the movement the lodges closed voluntarily in 1794, before all secret societies were totally prohibited by the new Emperor.

**Documentary evidence**

After 1785 there are no further known references to Lotz as a performer or composer. He is mentioned as the maker of Stadler’s *Baß-Klarinet* in a 1788 concert programme at the National Hoftheater, but there appear to be no further newspaper advertisements or other such public references to Lotz’s career. It would seem curious that after moving to Vienna, Lotz found no need to advertise his instruments or participate actively in the performance life of the city. This may imply that Lotz’s business was sufficiently successful and stable to not require further advertising, which in itself implies that his reputation was already considerable on his arrival in Vienna. It also suggests a rather elite clientele.

Lotz died on 25\textsuperscript{th} June (26\textsuperscript{th} according to the *Wiener Zeitung*) 1792, of *Schlagfluß* (apoplexy) in the *Allgemeines Krankenhaus* at the age of 46. That Lotz died in

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118 Curl, *Art and Architecture*, 139.
120 Lawson, “*Basset Clarinet,*” 487.
121 It should be noted however, that because such references are not known to exist, this is not conclusive proof that Lotz did not advertise or perform.
122 *Wiener Zeitung*, 30\textsuperscript{th} June, (1792), 1826; *Totenbeschauprotokol*, Wiener Stadt- und Landesarchiv. This document also gives the date of death as June 26\textsuperscript{th} and erroneously gives the age at death as 44 years. Apoplexy is a term no longer employed by modern medicine and may have included
hospital is curious and may imply that his illness had been of unusually long
duration, as apoplexy is most frequently characterised by almost immediate death
following collapse.

The legal documents drawn up after Lotz’s death, particularly the estate settlement,
reveal a great deal about his personal circumstances and his career as an instrument
maker. The estate settlement shows that Lotz was survived by his second wife Maria
Barbara (whom it will be remembered he married in 1785 in Pressburg) and three of
his children, Fridrich, Joseph and Theres (see note 59 for dates of birth). All three
children were minors and therefore under the care of their step-mother. That these
three children were clearly resident with Lotz at the time of his death contradicts
Sebesta’s assertion above that they were abandoned in Pressburg.

The first of Lotz’s children, Christina Elizabeth (24/07/1779) does not appear on this
document. It may therefore be assumed that she had died some time previously.

Compared to other makers, however, Lotz’s family fared remarkably well in the
survival rates of children. Thanks to the work of Rita Steblin in uncovering a
number of significant documents relating to Viennese wind instrument makers of this
time, this comparison is now possible.

Lotz’s children were born in the period 1779-1783, with three of the four children
surviving to adulthood. The possessions listed in the estate settlement (discussed in
detail later) suggest a significant level of affluence. Jakob Baur (c1743-1797),

 condiciones now recognised as sudden cardiac arrest, cerebral aneurysms and aortic aneurysms. It was
generally applied to any sudden death in which began with a loss of consciousness.
whose estate settlement also shows considerable material wealth had four out of a probable five children surviving at the time of his death,\textsuperscript{123} although it must be noted that not all of these children were adults. These children were born between 1767 and 1794. Matthias Urban Thurner (c1714-1786), who was sufficiently financially successful to own his own house, also fared relatively well, with around five of seven children (born between 1749-1762) still surviving at his death.\textsuperscript{124}

Matthias Rockobaur (c1708-1775) and Friedrich Lempp (c1723-1796), however, were not so fortunate. Of Friedrich Lempp’s ten children, born between 1756 and 1772, only two survived to adulthood.\textsuperscript{125} Although Lempp achieved significant success, his first thirteen years in Vienna (that is c. 1755 – 1768, the time when most of his children were born) were spent as a musician licensed to play in the suburbs of Vienna,\textsuperscript{126} suggesting a relatively low income. Only four of Rockobaur’s eleven children, born between 1735 and 1753, outlived their father.\textsuperscript{127} The clarinettist Anton Stadler also suffered a high mortality rate in his family, with only two of his eight children (born over a ten year period of 1781 to 1791) surviving infancy.\textsuperscript{128}

As Steblin points out, “Vienna at that time had a high infant mortality rate, caused by unsanitary living conditions.”\textsuperscript{129} Although other factors could influence these figures, it is possible that the relatively low mortality rate found in the families of the more prosperous makers such as Baur and Lotz can be accounted for in part by the

\textsuperscript{124} Steblin, “Viennese Woodwind Makers,” 50-53.
\textsuperscript{125} Steblin, “Viennese Woodwind Makers,” 32.
\textsuperscript{126} Steblin, “Viennese Woodwind Makers,” 30.
\textsuperscript{127} Steblin, “Viennese Woodwind Makers,” 41-42.
\textsuperscript{128} Weston,\textit{ More Clarinet Virtuosi}, 247.
\textsuperscript{129} Steblin, “Viennese Woodwind Makers”, 32.
fact that this prosperity brought with it improved living conditions and diet, and therefore improved health. If this supposition is correct, it would be further evidence against Sebesta’s claim of Lotz’s recklessness with money and lack of care for his children.

Tools and working practices

We can also use the documents from Viennese archives to gain an idea of the size and technical advancement of Lotz’s workshop in comparison with that of other contemporary makers in Vienna.

Three lathes are listed amongst Lotz’s workshop possessions at his death, two of which were described as wheel-lathes. In the latter half of the 18th century, instrument makers and wood turners had a number of lathe designs, or variations on these, available to them. The three principal designs were the wheel, bow and pole lathes. The last two designs operated on the principle of reciprocal motion, with a tautened string wrapped around the work and secured at two other points controlling the speed and spin of the work. The depression (by means of a pole or treadle) or drawing of the string in one direction would cause the work to spin; its release would cause the work to spin in the opposite direction to the original motion.

Plate 1.4. A pole lathe represented in Joseph Moxon, *Mechanik Exercises or the Doctrine of Handy-works*, 1703.

Sprengel depicts a similar pole lathe in his 1767 *Handwerke in Tabellen*, with the modification of attaching the pole to the floor via a sturdy (and adjustable) post on which the pole gimbals, rather than to the wall or ceiling, as described in Moxon.\(^\text{132}\) This illustration also clearly shows the seat on which the turner rests his weight whilst operating the treadle mechanism with one foot.


Although effective and used by a large number of craftsmen,\textsuperscript{133} both the lathes operated by means of a bow or pole had certain limitations. These lay principally in the wasted action caused by the reciprocal motion, as the cutting tool could only be applied to the work during the initial revolutions caused by the depression or drawing of the string, and not on its return spin. The advantage of these two types of lathe lay in the fact that they enabled the turner to work alone, without the assistance of another to power the lathe.

While the wheel lathe usually did require the presence of an assistant for its operation, it had significant advantages over the other two types of lathe. The wheel

\textsuperscript{133} The spring-pole lathe appears most frequently in etchings of wood turner’s workshops and therefore is perhaps the most documented lathe used by wood turners. (Wachmann, *Clarinet Woodworking*, 24).
lathe operated by means of a strap passed around the work which was then passed around a wheel. This wheel was operated by an apprentice via a crank attached to the centre of the wheel. This mechanism meant that the wheel-lathe was the most powerful available to craftsmen at the time and also enabled the maker to exert greater control on the speed of the revolutions. Greatly increased speed was also possible on this lathe, which was capable of achieving as much as 1600rpm, allowing the maker to produce an exceptionally smooth finish.

Plate 1.6. A wheel lathe as shown in Joseph Moxon, *Mechanik Exercises or the Doctrine of Handy-works*, 1703.

As well as these advantages, the wheel-lathe also had the significant benefit of producing continual motion of the work in one direction. As Moxon puts it;

134 Wachmann, *Clarinet Woodworking*, 27.
135 Wachmann, *Clarinet Woodworking*, 27.
...[the] Wheel rides Work faster off than the Pole can do: because the springing up of the Pole makes an intermission in the running about of the Work, but with the Wheel the Work runs always the same way; so that the Tool need never be off it, unless it be to examine the Work as it is doing.\textsuperscript{137}

Moxon describes both the Great Wheel, used for heavy work for which other lathes are too light, and the Treadle-Wheel, which is used for smaller work.\textsuperscript{138} The treadle wheel did not require the presence of an assistant as the wheel was operated by means of a treadle situated underneath the lathe and operated by the turner’s foot. The treads had to be timed to coincide with when the wheel began to lose momentum and thus “...carry it swiftly about without intermission.”\textsuperscript{139}

Plate 1.7. A Treadle Wheel lathe as shown by Joseph Moxon, \textit{Mechanik Exercises or the Doctrine of Handy-works}, 1703.
Presumably at least one of the two wheel lathes listed in Lotz’s workshop was of the treadle variety, such as that depicted in Plate 1.7, effective for turning clarinets, flutes, oboes, basset horns and basset clarinets. Possibly a larger, more robust lathe, such as that in Plate 1.6, was required for making bassoons and contrabassoons, particularly to compensate for the unequal weighting when boring non-cylindrical sections such as the butt. The majority of etchings showing the interiors of wood turner’s workshops from around 1775 show more than one lathe in use, and frequently varying designs of lathe in the same workshop.¹⁴⁰

The first lathe listed in Lotz’s workshop was valued at 20 gulden,¹⁴¹ twice the value of the following two lathes, each at 10 gulden (total value = 40 gulden). This suggests that the first lathe could be differentiated from the other two in size and or quality. All three lathes, however, much exceeded their estimated value at auction. The first sold for 44fl 20xr, the second for slightly more at 45fl 45xr, and the third at 35fl 30xr (total = 125fl 35xr).¹⁴²

Jakob Baur, Lotz’s near contemporary, clearly ran a somewhat larger workshop. At his death Baur owed outstanding wages for four workers (one Altgeselle and three Nebengesellen).¹⁴³ His workshop contained five lathes which, valued together with other tools, totalled 30fl (this included saws, tools, brass and unfinished musical instruments).¹⁴²

¹⁴⁰ Wachmann, *Clarinet Woodworking*, 34.
¹⁴¹ The denominations discussed here are Gulden, abbreviated to fl, and Kreutzer, abbreviated to xr. 1 Gulden divided into 60 kreutzer, Maunder “Viennese Wind-Instrument Makers”, 172.
¹⁴² The first lathe was the most highly valued item in the inventory of tools and work, but 62 various instrument borers brought the highest value at auction – 81fl (valued at 9fl). Various pieces of uncut wood (valued at 5fl), was the next most valuable item at auction, making 56fl 10xr. Presumably this was seasoned wood and this demonstrates how much value makers placed on such items.
¹⁴³ Steblin, “Viennese Woodwind Makers,” 49.
Although greater in number, these lathes are of lesser value than those used by Lotz, suggesting they were older and less technically advanced machines - possibly bow- or pole-lathes. Mathias Urban Thurner was a craftsman at the opposite end of the spectrum. His estate settlement shows only one lathe, which together with tools was valued at 20fl. Although leaving only 30fl in cash, a number of valuable or luxury items were listed in Lotz’s estate settlement, indicating a certain level of affluence. This includes a significant number of items made of gold, silver and porcelain (such as clocks, a tobacco box and assorted cutlery, valued in total at 131fl 45xr, devaluing slightly at auction, bringing in 123fl 16xr). Not all of the gold, silver and porcelain items listed went to auction as some were retained by the widow at her request.

In addition there were also a number of gilt items, such as mirrors in gilt frames and furniture with gilded decoration. Again, a number of these and other valuable items of furniture were not put forward at auction, being either reserved by Lotz’s widow for herself or others. Included in this are fifteen oil paintings, the subjects of which are not recorded. That Lotz’s widow did not sell such items shows that her financial situation was not desperate.

The sale of Jakob Baur’s effects, announced in the Wiener Zeitung, demonstrated a similar wealth in possessions and included paintings and jewellery. Amongst these were also a number of musical instruments not made by Baur, including

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144 Steblin, “Viennese Woodwind Makers,” 49.
146 Wiener Zeitung, 8th November, (1797), 3347. Note that Baur is not mentioned by name in the advertisement, and Maunder has presumed its connection to Baur based on the address (Maunder “Wind-instrument Makers,” 181).
violins, violas and cellos, as well as a range of music. Lotz’s estate settlement also included various books and music (valued at 4fl, sold for 6fl 6xr). This shows that both these makers were literate and probably well educated.

The sums owed by Lotz’s debtors (whose identities and nature of their debts will be discussed in detail in following chapters) amounted to a significant sum. There are no fewer than ten debtors on the list, owing sums from as little as 4fl 30xr up to 2000fl, amounting to 5836fl 10xr in total. This shows that, at the time of his death, Lotz’s business was flourishing. The documents do not record any debts which Lotz himself owed.

The Guilds

Several other Viennese makers have already been mentioned in this chapter, all of whom were near contemporaries to Lotz. These makers, as well as several others not yet discussed, will now be placed in greater context through a brief chronological biographical discussion.

Before examining the makers in detail, however, it is perhaps necessary to make a brief study of the social and political climate in which they worked. Until well after 1800 (within the period covered by this study), musical instrument making in Vienna, as elsewhere, was influenced by the guild system. The primary purpose of the guilds was to regulate all aspects of the appropriate trade. This was achieved through strict rules and criteria relating to eligibility of membership,

147 Maunder “Wind-instrument Makers,” 181.
through to the process of becoming a qualified *Meister* (Master). These strict regulations were not relaxed until Joseph II’s Decree of 1786 in which the guilds were instructed to simplify the conditions required to become a *Meister*, as well as increase the total number admitted to the guild. The period covered by this study was therefore a critical one for the guilds.

Considering the apparent importance of the guilds, it seems surprising that, until 1799, only three woodwind instrument makers, Thomas and Mathias Stubenvoll and Martin Lempp, were *Bürger*, that is, citizens of Vienna with full rights to practice their trade under guild protection. According to Maunder, the vast majority of Viennese woodwind instrument makers in the 18th century were *Störer* (unauthorized craftsmen operating outside of the guild system, whose presence was tolerated by the government, suspicious of the organised power of the guilds). That many makers did not become guild members is hardly surprising, considering the intricate social and financial obstacles faced by the hopeful applicant. The power for retribution of a guild consisting of only three people would not have been significant enough to act as a deterrent or means of enforcement. Although in a politically dubious position, *Störer* were free from the suppression of internal competition (and the restrictions to

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152 Maunder “Wind-instrument Makers,” 180. T. and M. Stubenvoll have not been included amongst the relevant makers of this study. Available biographical information is extremely scanty and no instruments are known to have survived. In the few contemporary documents relating to the Stubenvolls, they are both described as flute makers. (Maunder “Wind-instrument Makers,” 188).
innovation that this brought) operated by the guilds, brought about through strict
rules governing working practices and the number of apprentices employed.154

Another group of makers also free of the guild system were those holding Court
appointments (Hofbefreite), whose status was denoted by the use of k.k.
Hofinstrumentmacher or k.k. priv[iligirt] and the use of the Imperial eagle on their
stamp.155 These makers were able to take on Lehrjungen (apprentices) and Gesellen
(journeymen) in the same manner as their Meister colleagues in the guilds, although,
with Hofbefreite viewed as “privileged rivals” from within the guild system, any
apprentice trained by Hofbefreite hoping to then gain entry into the guild faced
considerable professional jealousy.156

It is significant to note that Lotz held a Court appointment, which privileged position
free of the controls imposed by the guilds may have enabled him to exercise the
innovations which are the subject of this study. Furthermore, as a Protestant Lotz
would not have qualified for an apprenticeship with a maker in Vienna,157 and this
may account for his long residence in Pressburg before moving to Vienna.
Significantly, he only moved to Vienna once he was given a court appointment,
which rendered him independent of the guilds. This then is further evidence that
Lotz did not receive his training as a maker in Vienna.

It is likely that, as in Nuremberg in the late 15th century, makers granted the privilege
to use the imperial crown as part of their mark not only supplied instruments to the

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157 Dr. Eva Badura-Skoda, AMIS paper, 2009.
imperial court, but also to the courts of kings, electors and princes of, in the case of Nuremberg, the Holy Roman Empire of the German Nation. In reference to Vienna, the hub of the Hapsburg Empire, this would mean a significant number of potential and influential customers for any court instrument maker. Makers granted this privilege protected it vigorously, evidenced by the successful complaint against Joseph Huschauer by Anton Kerner in 1792 for the unauthorized use of the Imperial mark on his instruments.

Contemporary makers

The following graph gives a visual representation of the overlap of the lives of the principal makers in Vienna whose biographies are discussed here.

Graph 1.1. Timeline demonstrating the lives of the principal makers in this study.

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Mathias Rockobaur

The earliest known clarinet maker in Vienna was Mathias Rockobaur (c1708-1775). Although Rockobaur’s name is sometimes given in the literature as Rockobaur (as well as a variety of other spellings in primary sources), the researches of Maunder and Steblin have shown this to be erroneous and done much to clear the ambiguity surrounding this maker. Mathias Rockobaur is one of four makers identified by the Guild of Turners in 1768 as practicing their trade unlicensed by the Guild. Despite the Guild’s request that these makers be forbidden to make musical instruments, it seems their request was not heeded by the City and Rockobaur continued to practice his trade, evidenced by continued bills for his reeds and instruments to the Esterháza court.

Rockobaur began supplying the court at Esterháza with bassoon and oboe reeds in 1764, initially once a year, progressing to several times a year. In 1771 he also supplied two cor anglais and two bassoons to the court. The provenance of several of Rockobaur’s surviving instruments also indicates a regular trade with Austrian monasteries, with instruments by Rockobaur in the Landesmuseum Linz having arrived in that collection from Stift Hohenfurt, Stift Wilhering and Stift Kremsmünster. Rockobaur’s instruments won praise from Haydn who, when the

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160 Rice, Classical Period, 51; Steblin, “Viennese Woodwind Makers,” 40.
162 Steblin uses the term ‘Joiners’, but it is felt that ‘Turners’ is a more accurate translation of the term Dräxler. In German a joiner is usually referred to as either a Tischler or Schreiner; Steblin, “Viennese Woodwind Makers,” 30. The other makers identified are given as Paur (possibly Rockobaur or Jakob Baur), Fiedler, and the fourth unnamed. These makers are identified in a document presented to the City of Vienna in response to a petition lodged by Friedrich Lempp. This petition will be discussed in the section on this maker.
164 Steblin, “Viennese Woodwind Makers,” 44.
oboes in the court orchestra (by an unidentified maker) became old and worn out, recommended Rockobaur to Prince Nikolaus Esterházy, “...I would humbly point out to Your Highness that there is a master Rockobaur in Vienna, who in my opinion is the most skilful for this sort of work.”¹⁶⁵ Haydn’s letter also demonstrates that, despite the Guild’s objections, Rockobaur continued to practice a flourishing trade when he added,

But because this master is continually busy with work of this kind, and since it requires an exceptionally long time to complete a pair of good and durable oboes with corps de rechange (so that all the necessary pitches can be produced) – for these reasons the cheapest price is 8 ducats.¹⁶⁶

Rockobaur’s name continued to appear in the Esterháza account books for nearly eighteen months after his death.¹⁶⁷ Steblin suggests these orders were filled by Jakob Baur, who had married Rockobaur’s daughter Elizabeth in 1765.¹⁶⁸

Martin Harlow has suggested that Mathias Rockobaur is one of several potential masters for Lotz.¹⁶⁹ Given the biographical information presented on Lotz above, and in light of the fact that Jakob Baur, only three years Lotz’s senior, had married Rockobaur’s daughter and therefore probably worked and trained in Rockobaur’s workshop, this seems unlikely. Even allowing for generational differences, the instruments of Baur and Rockobaur bear little similarity to those of Lotz, while

¹⁶⁶ Steblin, 44. “Viennese Woodwind Makers,” As above
¹⁶⁷ Steblin, “Viennese Woodwind Makers,” 45.
¹⁶⁸ Steblin, “Viennese Woodwind Makers,” 41; 43.
¹⁶⁹ Martin Harlow, Viennese Chamber Music with Clarinet and Piano, 1783-1827: Repertory and Performance Strategy, (PhD Dissertation: University of Sheffield, 2004), 166.
showing a marked similarity to each other. The fact that Baur married Rockobaur’s daughter and continued providing reeds in his father-in-law’s name after his death suggests he may have been apprenticed to him. Although it was possible for more than one apprentice to be working in the workshop at once (traditionally a Master could only start a second apprentice four years after the commencement of the first\textsuperscript{170}), these considerations seem to make it unlikely that any other maker in the workshop would have been Lotz. Mathias Rockobaur, recorded only as “ein Musikant”, died on the 17\textsuperscript{th} July 1775, at the age of 67.\textsuperscript{171}

A variety of instruments by Rockobaur are extant, comprising one flute, four oboes, one oboe d’amore, one tenor oboe, four cor anglais, one clarinet, two clarinettes d’amour and one bassoon.\textsuperscript{172} All the extant instruments by Rockobaur are listed by Young as clearly stamped (with some slight variation in symbols) ROCKO/BAUR/WIEN.\textsuperscript{173} Appendix D gives details of instruments by Rockobaur consulted for this study.

Mathias Urban Thurner

Mathias Urban Thurner (c1714 – 1786), unlike Rockobaur and Baur, was a member of the guild and was identified as such in the 1768 report regarding Friedrich Lempp mentioned above.\textsuperscript{174} At his marriage in 1742, Thurner was working as a silversmith, but by 1749 was recorded at the christening of his daughter as a civic joiner.

\textsuperscript{170} Art du Faiseur, 140.
\textsuperscript{171} Totenbeschauprotokoll, Wiener Stadt- und Landesarchiv, 1775.
\textsuperscript{172} Young, 4900, 18-19. These instruments appear under the entry ‘Baur/Paur, Rocko’.
\textsuperscript{173} Young, 4900, 18-19.
\textsuperscript{174} Steblin, “Viennese Woodwind Makers,” 29.
One of his sons, Joseph (1753-1812), also became a turner, while two others, Mathias (1758 - p 1792) and Franz (1762 - 1829) both became flute virtuosi. Interestingly, Joseph married the daughter of a civic turner from Pressburg. This provides further evidence of a busy and intimate exchange in trade between Vienna and Pressburg. Mathias Thurner, described in the Totenbeschauprotokoll as “burgle. drachslermeister”, died on October 8th, 1786 at 72 years of age.

Friedrich and Martin Lempp

Another important family partnership in Vienna was that of Friedrich Lempp (c1723 - 1796) and his son Martin (1766 - 1836). Friedrich Lempp is suggested by Harlow as the most likely candidate for having provided Lotz with his training. Considering Friedrich had a son almost twenty years younger than Lotz (thus not receiving training at the same time) Martin’s presence is not an obstacle to this theory. Martin continued his father’s business after the latter’s death and no distinction is made between father and son on the stamps of extant instruments (except for two extant contrabassoons (Linz: Mu 37 and MIM: 1002), which can unequivocally be attributed to Martin).

Recent research by Rita Steblin has uncovered a great deal of previously unknown information about Friedrich. Much of this is gleaned from a petition made by him in

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175 Steblin, “Viennese Woodwind Makers,” 50. Again Steblin uses the term ‘joiner’, whereas ‘turner’ is a more likely translation.
176 Steblin, “Viennese Woodwind Makers,” 52; 54.
177 Steblin, “Viennese Woodwind Makers,” 53.
178 Totenbeschauprotokoll, Wiener Stadt- und Landesarchiv, 1786.
179 Harlow, Chamber Music, 166.
1768 requesting government protection to make woodwind instruments. From this we can establish that Friedrich had arrived in Vienna thirteen years before, presumably from his birthplace of Forchheim, probably in 1754.181 Until the time of his petition, Friedrich had been a musician registered to play in the suburbs.182 Lempp’s petition was approved – he was therefore given permission to make and sell musical instruments in Vienna.183 Interestingly, one of the points which made the city councillors decide in his favour was the fact that Lempp was himself a musician and therefore “...would be far more capable of giving such instruments the correct tone and voicing than a joiner who is inexperienced in music.”184 This statement is presumably in reference to Mathias Thurner, brought forward in the Guild’s argument against Friedrich’s petition, as an instrument maker of sufficient skill to satisfy demand.185 It will be remembered from the discussion of Mathias Thurner above that, initially a silversmith, he was then trained as a wood turner, not a musician or dedicated musical instrument maker. A further point in Lempp’s favour was Empress Maria Theresia’s efforts during her reign to lessen the power of the guilds so as to encourage industrial production.186 The city councillors refer to this in their report.187

183 Steblin, “Viennese Woodwind Makers,” 28. Lempp’s petition is discussed in detail by Steblin, and a transcription of the original documents included.
184 Steblin, “Viennese Woodwind Makers,” 66-67. As stated above, “turner” is considered a more applicable translation of the word “dräxler”, used in the original document, than “joiner” as used by Steblin.
Although Friedrich apparently prospered, buying and selling two houses during his career in Vienna, by the time of his death in 1796 his only possessions, according to his son Martin, were some old clothing and a bed.\footnote{Steblin, “Viennese Woodwind Makers,” 34-35; 36.} Apparently Friedrich’s wealth had been affected by his wife’s illness, whose medical bills and burial costs he had paid.\footnote{Steblin, “Viennese Woodwind Makers,” 35-36.} He succumbed to the same illness as Lotz – apoplexy – in his own home.\footnote{Steblin, “Viennese Woodwind Makers,” 36.}

Friedrich is of particular interest to this study as a price list of instruments published by him in the \textit{Wiener Zeitung} of 1789 contains the item “Ein neu erfundenes Dis oder G Bassethorn, das er selbst erfunden”\footnote{Wiener Zeitung, 25\textsuperscript{th} February (1789), 464.} [A newly invented D# or G Basset horn, invented by himself].

Friedrich’s son Martin claimed at his father’s death that he had been caring for and financially supporting his father for several years.\footnote{Steblin, “Viennese Woodwind Makers,” 36.} At the time of Friedrich’s death, Martin was recorded as a “…licensed musical instrument maker residing at the same address [as his father – \textit{Flautenmacher Haus} No 35].”\footnote{Steblin, “Viennese Woodwind Makers,” 36.} Martin became a member of the guild (\textit{Bürgereid}) in 1788 and became powerful within it, sitting as chairman of the wind instrument makers in 1813, with nine other \textit{Meister}.\footnote{Steblin, “Viennese Woodwind Makers,” 36.} He applied for the title of \textit{Hofinstrumentenmacher} in 1799, receiving the title in August 1800.\footnote{Steblin, “Viennese Woodwind Makers,” 36; Hopfner, \textit{Musikinstrumentenmacher}, 299.} Martin maintained his Court appointment until 1822, and retired the following year.\footnote{Steblin, “Viennese Woodwind Makers,” 36; Waterhouse, \textit{New Langwill}, 232.} Curiously, Martin’s activities as an instrument maker are not
mentioned in his estate settlement, in which he is recorded as ‘house owner, external councillor, and Imperial-Royal adviser to the poor’ [“Hausinhaber, äusserer Rath und k.k. Armenvater”].

Martin was survived by three adult daughters – there were no sons to continue the family business.

A significant proportion of Friedrich and Martin’s business appears to have been in supplying woodwind instruments – particularly fifes, serpents, oboes, clarinets, bassoons and cor anglais – to various military regiments. Indeed, Martin’s application of 1799 for the title of Hofmusikinstrumentenmacher particularly stressed his ability to make instruments for the Imperial regiments. There are a number of instruments surviving from the Lempp family and, as discussed above, it is often difficult to attribute them to Friedrich or Martin. This is discussed at relevant points in the following chapters.

Jakob Baur

As has been mentioned above, the woodwind instrument maker Jakob Baur married Rockobaur’s daughter, suggesting a strong personal link between the two makers, possibly that of Master and Apprentice. This is further strengthened by the fact that, at the birth of his daughter in 1767, Baur and his wife were living in the same house as Rockobaur, and were still living there in 1769. By 1774 they were living at a different address. Only three years older than Lotz, Baur held the position of

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201 Steblin, “Viennese Woodwind Makers,” 47.
Court instrument maker by 1780.\textsuperscript{202} Possibly this was in response to the number of instruments Baur supplied to Austrian regiments. It may also be in reference to the work he carried out, mentioned above, for the Esterházy court.

This raises the question as to the nature of Baur’s appointment and whether or not he and Lotz held the same position at the same time. Steblin suggests that this was an honorary title as Baur was never a salaried employee of the court.\textsuperscript{203} Baur’s stamp includes the Hapsburg eagle as seen on Lotz’s instruments (and indeed on others by makers with a court privilege) but does not include a title as Lotz’s does. This indicates that Steblin’s supposition that Baur’s title was honorary is correct. It may be that the use of the Hapsburg eagle on Baur’s stamp indicates, as it does on Friedrich Lempp’s instruments, that he was legally entitled to make and sell instruments in Vienna.

Baur was born in Vienna.\textsuperscript{204} The record of his first marriage in 1765 and his daughter’s birth in 1767 gives his profession as Musicus.\textsuperscript{205} By 1774 he was described as Instrumentenmacher.\textsuperscript{206} Interestingly, in 1771 Baur purchased his own house,\textsuperscript{207} implying that it was around this time that he gained his independence from Rockobaur as a musical instrument maker.

Baur was probably one of the four unlicensed woodwind instrument makers identified as practicing his trade illegally by the Guild of Turners in the documents

\textsuperscript{202} Maunder, “Wind-instrument Makers,” 181.
\textsuperscript{203} Steblin, “Viennese Woodwind Makers,” 48.
\textsuperscript{204} Steblin, “Viennese Woodwind Makers,” 46.
\textsuperscript{205} Steblin, “Viennese Woodwind Makers,” 46-47.
\textsuperscript{206} Maunder, “Wind-instrument Makers,” 181.
\textsuperscript{207} Steblin, “Viennese Woodwind Makers,” 47.
relating to Lempp’s petition of 1768. This suggests that he was working as an instrument maker by this time, although still only described in civil documents as *Musicus*. Baur never became a *Bürger*, and the objections raised by the Guild seemed to have had little effect on his career. Nevertheless, the use of the Hapsburg eagle on his stamp does indicate that at some point, probably around 1780, he obtained legitimacy. As mentioned above, his estate settlement shows a large and prosperous workshop, with several employees and an array of tools and musical instruments of a great variety. The sale of his effects in the *Wiener Zeitung* also testifies to significant wealth.

Baur is of particular importance to this study through his extremely close link to Lotz in both time period and area of activity. It seems impossible to imagine that two woodwind instrument makers operating at the same time in the same city would have no knowledge of the others’ work, therefore Baur’s instruments are of particular importance in the comparative study. Baur’s output seems to have been a little different from Lotz’s, with a preponderance of oboes and *cor anglais*, no surviving clarinets and only one each of basset horns and bassoons. Baur also made flageolets and fifes, of which there are no extant examples by Lotz. At Baur’s death, Martin Lempp completed 250 fifes in D which had been left unfinished by Baur. This therefore connects the three makers – Rockobaur, Baur, and Martin Lempp (and therefore probably also Friedrich) – in professional and personal relationships. Baur

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is another of the three candidates Harlow suggests as a possible Master for Lotz.\(^{212}\) This seems unlikely however, given the small age difference between the two.

**Raymund and Anton Griesbacher**

There is clear evidence of a personal and/or professional connection between Lotz and Raymund Griesbacher (1751/52-1818). This can be established not only through the marked similarity between the surviving instruments of the two makers and the focus of their output, but also through references in official documents. Interestingly, the two makers seem to have also followed a similar career path.

Raymund and his brother Anton also have a connection to Esterháza, having been employed there as clarinettists in the orchestra from 1776-78.\(^{213}\) It was said that Raymund was “an excellent concert player who performs on the clarinet with the greatest delicacy and purity.”\(^{214}\) Raymund then worked as a basset horn player to Count Palffy until 1781.\(^{215}\) He then served the Court in Vienna as a clarinettist from 1794-95, during which time he also supplied the Burgtheater with two *cor anglais*.\(^{216}\) According to Gerber, Griesbacher was also director of Count Grassalkowitz’s *Harmoniemusik*, which Maunder dates to around 1796.\(^{217}\)

Pamela Weston assumed that Raymund was the Griesbacher referred to in a letter written by the Stadler brothers in 1781 in an unsuccessful attempt to seek

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\(^{212}\) Harlow, *Chamber Music*, 166.


\(^{214}\) Weston, *Yesterday’s Clarinettists*, 77.


employment from the music director at Wallerstein - Ignatz von Beecke. In this letter, Stadler refers first to the bassoonist Griesbacher, formerly of the County Palffy harmonie, as a likely candidate for the position of bassoonist at Wallerstein. Later in the letter he states, “We also play basset horn with Mr. Griesbacher in trios...”

In 1780, the bassoonist Jacob Griesbacher had performed with the Stadler brothers in a Tonkünstlersocietät concert. In all probability this is the same Griesbacher to whom Stadler refers in his letter, meaning that it was not Raymund who played trios with Anton and Johann Stadler. It would seem it was not uncommon for bassoonists to double on basset horn and make the third for basset horn trios. This probably arose in courts where two clarinettists also played basset horns, and rather than employ a third person solely for the sake of basset horn trios, bassoonists doubled the instrument. Franz Oliva was employed as a bassoonist at the Schwarzenburg court, but while employed by the Princess Poniatowsky in the late 1770s had been sent to Linz to learn the basset horn. Oliva is listed amongst the debtors in Lotz’s estate settlement, owing 4fl 30x for unspecified work. Similarly Anton Blech, employed by the Nassau-Weilburg court as a bassoonist, is one of the three players mentioned above who were hired in 1772 and played the basset horn.

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218 Weston, More Clarinet Virtuosi, 247. Also in Hoeprich The Clarinet, 106.
219 Poulin, Basset Clarinet, 15. Jacob was probably also the dedicatee of Hummel’s bassoon concerto, stated to be Raymund by Nagy (Nagy, “Fagottbaur,” 31).
220 Stadler quoted in Poulin, Basset Clarinet, 15.
221 Poulin, Basset Clarinet, 8. The work was a concerto for five wind instruments (two clarinets, played by the Stadler brothers, two French horns, Nagel and Zwirzina, and bassoon) by Joseph Starzer. All the musicians were employed by Count Carl von Palm (Poulin, Basset Clarinet, 8).
223 Lemacher, Nassau-Weilburg, 42; 24.
It is likely that Jacob was a relation to Raymund and Anton, possibly a brother. In reference to this, it is interesting to note that the original programme for the announcement for the Tonkünstlersocietät concert in 1780 the first names of the horn players are not given, whereas those for the Stadler brothers and Jacob Griesbacher were, suggesting this distinction was necessary to avoid confusion with other family members.

Interestingly, Köchel’s lists of members of the Viennese Hofkapelle from 1543 until 1867 contain an entry for a Johann Georg Griesbacher, a cornettist employed by the court from 1721 until his death at the age of fifty-six in 1740. Clearly this cannot be the father of Anton and Raymund, who were born in the early 1750s, but may be a grandfather, showing that this family had a long established musical tradition in Vienna.

It seems clear that there was a significant level of personal and professional collaboration between the Griesbacher brothers and Lotz. Anton is entered in Lotz’s estate settlement for informing of some outstanding debts owed to Lotz, all of which are relating to instrument deliveries, suggesting Anton was in some way involved in the day to day running of the workshop, as well as being in possession of two valuable clocks belonging to Lotz which had been redeemed from a pawn broker. Raymund is also mentioned later in the same documents, in connection with the two

225 Sperr’s Relation, “an Gold, Silber und Porzelain,” Theodor Lotz, Wiener Stadt- und Landesarchiv, Abhandlung Kondradsworth, V2505/1792. The wording of the passages relating to the clocks is somewhat difficult and an exact translation has not been possible.
clocks, as having paid the total value of 68 gulden for their retrieval. Raymund was the executor for Lotz’s will and organised the sale of the tools and instruments from his workshop. There is no evidence to suggest that Anton ever made instruments himself and there are no extant instruments bearing his name. He appears to have been an accomplished performer on the Baryton as well as the clarinet. An 1804 letter of introduction from Count Starhemberg to his relatives and acquaintances in Munich, Dresden and London gives evidence of this:

The bearer of this letter is the Imperial Royal subject Anton Griesbacher, who is taking a trip through Germany to London in order to polish his musical talent. He plays the so-called Paridon [baryton] with much facility and wishes to perform at public as well as private academies. Therefore I beg you to be of the best possible assistance to him in reaching his goal.

While no known instruments by Anton are extant, numerous examples by his brother Raymund have survived, including six clarinets, seven basset horns and three bassoons. Raymund is also of especial interest not only due to his close connection to Lotz, but also as he is one of the Viennese makers in this study to have at one time also held a post as k.k. Hofinstrumentmacher. This appointment was granted in 1800, after a previously unsuccessful application in 1799. Contrary to previous understanding, Martin Lempp’s and Raymund Griesbach’s applications

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229 Morrow, Concert Life, 120.
230 Young, 4900, 109-110. To the two bassoons listed in Young can be added a third in the Stadtmuseum Retz (Retz: BSR-391). My thanks to Thomas Kiefer for bringing this instrument to my attention.
231 Waterhouse, New Langwill, 147.
for this post were made separately, and the grants were coincidentally given at the same time.232

All his surviving instruments are marked with the Hapsburg eagle. Interestingly, Griesbacher received the title of Meister and his citizenship rights in 1804, after his appointment to the Court.233 Griesbacher gave a guarantee of three to four years for the purity of intonation of his instruments.234 His clarinets were described in 1804 by Rohrer as “not needing to fear comparison with any other instruments, and that they could be heard throughout Europe.”235

It was previously believed that Raymund II, who succeeded Griesbacher in his workshop, was one of two children surviving him at his death.236 Steblin’s research, however, has shown that Griesbacher died unmarried and without children, willing his possessions to relatives.237 The Raymund II who succeeded him in the workshop is identified in his estate settlement as a distant relative.238 The business continued after Raymund’s death under the direction of Raymund II – in its last reference it is listed under the same address as that of Martin Lempp.239

Martin Lempp’s and Raymund Griesbacher’s simultaneous appointments as k.k. Hofinstrumentenmacher has long been the basis for the assumption that these two

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233 Hopfner, Musikinstrumentenmacher, 164-165.
235 Waterhouse, New Langwill, 147.
239 Hopfner, Musikinstrumentenmacher, 164-165.
makers were associated professionally, even sharing a house for a time.\footnote{Waterhouse, \textit{New Langwill}, 147.}

According to Hopfner, however, there is no evidence for this latter claim in the \textit{Adressenverzeichniss} of the time.\footnote{Hopfner, \textit{Musikinstrumentenmacher}, 164-165.} That such a situation has come to be understood to have existed may arise from the simultaneous appointments or through confusion over Raymund II’s business listed on the same premises as Martin Lempp. As stated above, the two makers applied separately for the court position, and the fact that they were granted it at the same time cannot be construed as a form of collaboration between the two makers. Jansen’s statement that the two makers began working together in 1799 - the date of the first court application - must be disregarded.\footnote{Jansen, \textit{The Bassoon} Volume I, 384.}

This raises the question as to why two woodwind makers would be granted the same post at the same time. It is suggested here, and evidence in support of this will be presented in the following chapters, that each maker pursued a different production speciality and therefore fulfilled a different niche. It will also be argued in the following chapters that this situation could also be applied to Lotz and Jakob Baur.

\textbf{Franz Scholl}

It is clear that a collaboration of some description occurred between Lotz and the Griesbacher brothers, and it may be that Raymund learned to make instruments or developed his skills with Lotz. There is, however, no documentary evidence conclusively proving this to be the case. A similarly ambiguous and inconclusive relationship exists between Lotz and Franz Scholl (c1752-1828). Scholl is long
thought to have been a pupil of Lotz by virtue of the fact that, according to Waterhouse, he took over Lotz’s workshop on his death.²⁴³ Further organological evidence in support of this claim is presented in the following chapters.

Very little is known regarding Scholl’s life and career, and there are only three instruments surviving (one bassoon and two clarinettes d’amour). Although clearly active as a maker in Vienna, Scholl died in Pressburg in 1828 at the age of 76.²⁴⁴ While there is no evidence to suggest that Scholl pursued his career as a maker whilst in Pressburg, so little evidence regarding this maker is available it is impossible to conclusively state that he did not do so. His daughter married in Pressburg in 1822,²⁴⁵ at which point Scholl would have been seventy years of age and unlikely to be actively pursuing a career as an instrument maker. According to Poulin, Scholl was also apparently a performer, working as a clarinettist in the Marienallischen Theater in Leopoldstadt.²⁴⁶ However, Schönfeld, in the *Jahrbuch der Tonkunst von Wien und Prag* for 1796 records Friedrich Scholl as second clarinet.²⁴⁷ As this player has a different Christian name to the maker under consideration here, it seems possible that Poulin was mistaken.

The precise capacity in which Scholl assumed Lotz’s workshop at his death is unclear. As has been shown the tools of the workshop were sold at auction shortly after Lotz’s death and it seems Scholl did not continue making instruments under

²⁴³ Waterhouse, *New Langwill*, 361. This information was probably derived from Haupt and in turn repeated by Nagy, but the source of the original evidence for this remains unclear.
Lotz’s name. His address in 1803 (and again in 1804) was in the Alte Wieden, Favoritengasse Nr. 537, im Großen Neumannschen Haus.\textsuperscript{248} This address, although in the same area as Lotz’s premises, bears no further resemblance to that of Lotz and suggests that, if Scholl had taken over Lotz’s premises, by this date he had moved elsewhere. Interestingly, however, Raymund Griesbacher’s address in 1808 is recorded as Freyhaus auf der Wieden Nr. 454, and in 1816 in auf der Wieden im Haus Nr. 361.\textsuperscript{249} These addresses differ from Lotz’s 1792 address in the number only, and may have been the same house renumbered.

Poulin, however, asserts that Lotz’s duties were taken over by Anton and Ignatz Kerner, brass instrument makers (father and son) active in Vienna from around 1751.\textsuperscript{250} This seems unlikely and may be a misunderstanding arising from the fact that the Kerner’s also held a court title – \textit{kk Hof- & Waldhorn- & Trompetenmacher} – which Anton had held since 1751.\textsuperscript{251} Lotz has also been incorrectly recorded as bearing this title.\textsuperscript{252} Assuming then that Scholl was more likely to succeed Lotz in the workshop, it would also seem logical to conclude that Scholl had worked there prior to Lotz’s death.

Scholl’s applications for a Court appointment in 1794 and again in 1799 were unsuccessful.\textsuperscript{253} He was, however, successful in gaining a \textit{Hofdekret} for his ‘Schollbasso’ in 1802.\textsuperscript{254} In 1799 he probably employed the maker Engelbert Johann

\textsuperscript{248} Wiener Zeitung, 2\textsuperscript{nd} April, (1803), 1174; Nagy, “Fagottbau,” 33.
\textsuperscript{249} Nagy, “Fagottbau,” 31-32.
\textsuperscript{252} Waterhouse, \textit{New Langwill}, 243.
\textsuperscript{253} Waterhouse, \textit{New Langwill}, 361.
\textsuperscript{254} Waterhouse, \textit{New Langwill}, 361.
Ehrlich (c.1765-1839) and was at that time, according the Maunder, the only 
bürgerlicher woodwind instrument maker in the Wieden suburb. Scholl’s 
connection with Pressburg provides yet another link with Lotz. This could suggest a 
shared history and may indicate that their relationship was one of many years 
standing.

Despite the lack of evidence regarding Scholl’s career and the paucity of surviving 
instruements, it is the author’s opinion that he is of considerable significance in 
relation to any study of Lotz, and that the two makers shared a closer working 
relationship than has previously been appreciated. According to Langwill, Scholl 
was, “...a zealous improver of woodwinds and thus became well known.”

Kaspar Tauber

The only maker for whom conclusive evidence of a working relationship with Lotz 
exists is Kaspar Tauber (1758-1831). This comes in the form of an advertisement 
placed in the Wiener Zeitung of June 4th, 1794:

Er überläßt es Kennern zu beurtheilen, ob er sich zu viel 
schmeichle, wenn er versichert, daß seiner Instrumente bey 
gleicher Güte und Reinheit auch sich noch leichter blasen 
lassen, als jene von der Arbeit des Hrn. Lotz sel. Bey 
welchem berühmten Meister er viele Jahre konditionirt

[He leaves it to experts to judge whether he flatters 
himself too much in asserting that his instruments are the 
same quality and purity [of intonation], and are even easier to 
play, than those of the late Mr. Lotz, the famous maker who 
employed him for many years...]

Lindsay & Co. Ltd., 1972), 144.
While this advertisement provides evidence (although uncorroborated) of Tauber’s employment with Lotz, it is further interesting in the sense that Tauber clearly feels, two years after Lotz’s death, that the mention of his name and comparison of his own work with that of his master are valuable and beneficial advertisements.

A large number of instruments by Tauber survive, many of which, particularly the clarinets, corroborate Tauber’s claim to have been a pupil of Lotz. Born in Werixas, Hungary, Tauber established his workshop in Vienna some time before 1798.258 He is recorded as k.k. priv[iligirt] in 1794, and a Bürger by 1799.259 On the strength of the 1794 dating of his k.k. priv[iligirt] title, the conservative estimate of prior to 1798 for his workshop establishment can be revised to an earlier date of prior to 1794.

It is curious that Tauber became a Bürger after he had become k.k. priv[iligirt]. While it seems that Bürgers who later became Hofbefreite frequently kept their citizenship, and possibly also their guild membership,260 the reverse situation seems less logical, as court protection seems to have removed the need for guild membership. Nevertheless, Tauber’s association with the guild clearly continued, for as late as 1812 he was second chairman of the guild.261 This suggests a shift in the role and status of the guilds, and may indicate that, rather than bodies governing entry and performance in the profession, guild membership was now something of a status symbol than a requirement.

258 Waterhouse, New Langwill, 395.
259 Maunder, “Wind-instrument Makers,” 188.
260 Maunder, Keyboard Instruments, 19.
261 Hopfner, Musikinstrumentenmacher, 501.
Tauber retired in 1829.\textsuperscript{262} His instruments are therefore significant to this study not only through his claim to have learned from Lotz, but also because they represent the state of instrument making in Vienna immediately after Lotz’s death as well as through the successive generation. While Lotz’s instruments may be associated with the works of Mozart, Tauber’s may be associated with those of Beethoven. Of particular interest in the context of this study are the extant clarinets and contrabassoons. Curiously Tauber does not seem to have made basset horns. Certainly none have survived, nor are there any references to such instruments in his advertisements.

The stamps on Tauber’s extant instruments vary and may reflect his changing status throughout his career. Those marked [double eagle]/KASPAR/TAUBER/WIENN are most likely associated with his appointment of \textit{k.k. priv[iligirt]}, incorporating as they do the heraldic beast of the Hapsburgs. It is possible that those instruments stamped simply TAUBER/WIENN can probably be related to a time when Tauber did not hold a Court appointment, suggesting these instruments date before 1794.

Alternatively, this stamp could reflect the changing political situation in Austria at the beginning of the 19\textsuperscript{th} century brought about by the Napoleonic Wars. Perhaps with the dissolution of the Holy Roman Empire and the French invasion of Vienna, the use of the Hapsburg eagle in makers’ stamps was no longer appropriate or permitted. If this were the case, one would expect to find a smaller number of Tauber’s instruments without the Hapsburg eagle, corresponding with the shorter

\textsuperscript{262} Waterhouse, \textit{New Langwill}, 395.
time that Vienna was under Napoleon’s control. This is indeed the case, with this stamp accounting for less than half of Tauber’s extant instruments.

Another explanation may be that Tauber supplied instruments for Regimentmusik (military music), as advertised in the Wiener Zeitung in 1827. Possibly those instruments bearing the Hapsburg eagle were intended for use in the Austrian regiments.

One point worthy of mention here is that, listed amongst the furniture of Lotz’s house at his death is “1 Gesellen Bett” (1 journeyman’s bed), which demonstrates that Lotz had made provision for a journeyman in his establishment. That only one such item is listed suggests that Lotz ran a relatively small business, providing for only one resident journeyman. Mathias Thurner’s small workshop also contained only one journeyman’s bed. This suggests that, of the makers known to be associated with Lotz – Raymund Griesbacher, Scholl and Tauber – only one of these could have been resident on the premises at any given time, and also that the three students may not have worked in the workshop together. Based purely on the three makers’ ages Scholl and Griesbacher, who were close in age, would have been the first to receive their training at approximately the same time. Tauber was the youngest pupil, and presumably the last to pass through the workshop. However, both Scholl and Griesbacher were also professional performers, and consequently may have come to instrument making a little later than traditionally.

263 Waterhouse, New Langwill, 395.
265 Steblin, “Viennese Woodwind Makers,” 52.

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Friedrich Hammig

One further maker active in Vienna at the time is worthy of mention, although no connection to any of the makers already discussed has yet been established. According to Hopfner, Friedrich Hammig (active from before 1791 to after 1823) was originally from Saxony, establishing his workshop in Vienna some time prior to 1791, describing himself in this year as priv[iligirt] and k.k. priv[iligirt] in 1799.266 He received a Hofdekret (for Turkish cymbals) on 1st July 1801, having made unsuccessful applications in 1792 and 1794.267 Hammig is also of interest as, in 1791, he placed an advertisement in the Wiener Zeitung for “...eine neue Erfindung von Bassethorn, dessen vorzüglich Eigenschaft die Tiefe and Stärke des Tons ist...” [...a newly invented type of basset horn, whose special feature is the depth and power of its tone...]268 This advertisement shows that Lotz’s design of basset horn was not the only one available to players in Vienna at that time.

Hammig is the only other maker (apart from Lotz) in this study to be mentioned in Schilling’s Encyclopädie der Gesammten musikalschen Wissenschaften der Universal-Lexicon der Tonkunst of 1841.269 The entry makes no reference to Hammig’s level of fame or skill as a maker, listing only the types of instruments he made and referencing his Hofdekret of 1801.

In light of the evidence presented above, it is suggested that woodwind instrument makers in Vienna in the period 1785-1792 can be largely viewed in two separate

266 Hopfner, Musikinstrumentenmacher, 179; Maunder, “Wind-instrument Makers,” 182.
‘schools’. The first comprises the earlier generation – Rockobaur, Baur, and Friedrich (and his son Martin by association) who, as has been shown shared various professional and personal relationships, and produced a more traditional style of instrument. These makers also appeared to regularly supply military regiments and their surviving instruments as well as contemporary newspaper advertisements demonstrate a proclivity for fifes and other instruments used by the regiments.

The second school can be seen to comprise the following generation – Griesbacher, Scholl and Tauber, with Lotz as the central figure of this group. It can be demonstrated that these makers had close ties and worked together, resulting in the production of the latest and most successful design of instruments. This group then passed on these skills and qualities to those that followed – Ehrlich and Griesbacher’s younger relative. While such a distinction between the two groups can now be seen to have existed, it is not suggested that the makers themselves consciously established these groups or indeed perceived them at the time.

Other makers of interest

This encompasses all the makers for whom a personal and/or professional connection to Lotz could be established. Other makers for whom no personal or professional connection with Lotz could be established were selected on the basis of period of activity, relevant instruments, or geographical proximity. This group is represented by later Viennese makers, whose biographies are of little relevance in the context of this study but whose instruments represent the generation succeeding Lotz and his associates. The two most significant makers in Vienna following Lotz and not
already discussed were Johann Baptist Merklein (1761-1847) and Stephan Koch (1772-1828). Merklein received the citizen’s oath in Vienna in 1799 and during his career was known as maker of clarinet, bassoon and contrabassoon, and significantly also of an improved basset-horn.\textsuperscript{270} His areas of expertise therefore match Lotz’s very closely. He retired in 1829, the same year as Tauber.\textsuperscript{271}

Stephan Koch was one of the most successful and prolific of the Viennese wind instrument makers in the first half of the 19\textsuperscript{th} century. His career therefore spans one of the most crucial and rapidly evolving periods in instrument history. The Koch workshop was established around 1807, with Stephan a master turner with citizen’s rights by 1815.\textsuperscript{272} There are a large number of extant flutes by him, and he sought a privilege for his newly invented flute in 1820.\textsuperscript{273} He also produced contrabassoons.\textsuperscript{274} He is possibly best known, however, for his involvement in developing the Sellner system oboe in collaboration with the oboe virtuoso Joseph Sellner.\textsuperscript{275} On his death in 1828, he was succeeded by his eldest son.\textsuperscript{276} He also trained Johann Ziegler, himself an influential maker in Viennese wind instrument history.\textsuperscript{277}

Remaining to be discussed are those makers whose relevance to this study can be drawn through either time period or instrument design. In some instances, both criteria are satisfied. This is the case for both Franz Doleisch I (1748/49-1806) in

\textsuperscript{270} Waterhouse, \textit{New Langwill}, 260.
\textsuperscript{271} Waterhouse, \textit{New Langwill}, 260.
\textsuperscript{272} Waterhouse, \textit{New Langwill}, 208.
\textsuperscript{273} Waterhouse, \textit{New Langwill}, 208.
\textsuperscript{274} Young, \textit{4900}, 139.
\textsuperscript{275} Waterhouse, \textit{New Langwill}, 209.
\textsuperscript{276} Waterhouse, \textit{New Langwill}, 208.
\textsuperscript{277} Waterhouse, \textit{New Langwill}, 209.
Prague and Johann Benjamin Eisenbrandt in Göttingen (1753-1822). Due to the close relationship between Prague and Vienna both politically and geographically which is evidenced in similar developments in instrument manufacture, Doleisch is of particular importance. It will be argued in Chapters 2 and 3, however, that clarinet and basset horn design in Prague, as represented by the instruments of Doleisch, had little to do with the developments taking place in Vienna with Lotz and his colleagues.

Franz Doleisch was Prague’s earliest clarinet maker, establishing his workshop around 1781, making him roughly contemporaneous with Lotz. It is likely that Doleisch, like many others, was initially trained in the furniture trades, as he is listed in documents as a “Kunstdrechsler” (ornamental turner). Little further is known of Doleisch, whose workshop was taken over by his son on his death in 1806. His extant instruments include clarinets, oboes, bassoons and a significant number of basset horns.

Johann Benjamin Eisenbrandt, active in Göttingen, was geographically considerably removed from Vienna. He is of particular interest to this study, however, because of an extant basset clarinet which strongly resembles that supposedly produced by Lotz. This instrument will be discussed in Chapter 3.

One further maker produced similar instruments, and is therefore also of interest. Until recently, nothing was known about Strobach beyond that he was active in

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278 Rice, Classical Period, 55.
279 Rice, Classical Period, 55.
280 Waterhouse, New Langwill, 92.
281 Waterhouse, New Langwill, 92.
Carlsbad in the early 19th century.\textsuperscript{282} Thanks to the recent researches of Robert Sebesta our knowledge of this maker’s career has been considerably enhanced. He can now be identified as Franz Strobach, born c1769 in Lidice (Liditz) and died in Carlsbad on May 30\textsuperscript{th} 1812 at the age of fourty-three.\textsuperscript{283} Documents in the State District Archive in Carlsbad, found by Sebesta, show that Strobach began requesting the right of domicile in the city from January 1801, stating his intention was to establish a workshop for musical instrument manufacture.\textsuperscript{284}

In these same documents, Strobach describes himself as an instrument maker and significantly for this study, as will be highlighted later, “...former musician at the Prague National Theatre.”\textsuperscript{285} Sebesta and Hoeprich estimate that he established his business in Carlsbad after 1790 and all of his extant instruments are stamped with that city.\textsuperscript{286} Given that Strobach’s wife, Johanna Mattoni, was a Carlsbad native and they had married in 1794,\textsuperscript{287} it seems logical to assume that he was not new to Carlsbad by this date.

In 1801, Strobach and two other Carlsbad musicians, Johann and Franz Ruppert, requested the privilege to perform concerts in Carlsbad, and Sebesta and Hoeprich suggest this group may have formed a basset horn trio.\textsuperscript{288} Sebesta further theorises

\textsuperscript{282} Waterhouse, \textit{New Langwill}, 391. According to Sebesta and Hoeprich there is no other trace of musical instrument manufacture in Carlsbad in the 18th century (Sebesta, “Strobach,” 58), however the maker F. Jäger was active c. 1800 (Waterhouse, \textit{New Langwill}, 191) and therefore may have also been active in the 18th century. Interestingly Waterhouse lists a basset horn amongst his extant instruments. (Waterhouse, \textit{New Langwill}, 191).
\textsuperscript{283} Sebesta, “Strobach,” 59.
\textsuperscript{284} Sebesta, “Strobach,” 59.
\textsuperscript{286} Sebesta, “Strobach,” 60.
\textsuperscript{287} Sebesta, “Strobach,” 58.
\textsuperscript{288} Sebesta, “Strobach,” 58; 65.
that Strobach must have pursued instrument making in Prague before relocating to Carlsbad, arguing that,

He must have acquired the necessary skills somewhere, and there were many woodwind-instrument makers in that city in the late eighteenth century; it is not unlikely that concrete information linking Strobach with one of them may be revealed at a future date.\textsuperscript{289}

Strobach seems to have concentrated his efforts almost entirely in the production of clarinets and basset horns, and he is represented today only by these instruments. There are currently eighteen basset instruments and three clarinets known to be extant.\textsuperscript{290} These include three anonymous basset horns which Sebesta believes may be attributed to Strobach.\textsuperscript{291} However, Strobach did not concentrate on clarinets and basset horns to the exclusion of all other instruments, as evidenced by the 1812 inventory of his workshop after his death, in which four basset horns and four clarinets are listed together with two flutes, two bassoons and one dozen \textit{Stadtflöten}.\textsuperscript{292}

Conclusions

In this chapter, evidence has been presented to demonstrate that Lotz was not a native of Vienna, as has long been supposed. The record of his baptism in Kirchheim in 1746 is the first official record of his birth to be presented in the academic record. Lotz’s career has been followed from his earliest appearance in contemporary sources in 1772 to his death in 1792. The biographies of a number of

\textsuperscript{289} Sebesta, “Strobach,” 60.
\textsuperscript{290} Sebesta, “Strobach,” 73.
\textsuperscript{291} Sebesta, “Strobach,” 77.
\textsuperscript{292} Sebesta, “Strobach,” 59.
other makers working in and around Vienna at approximately the same time of Lotz have also been examined and their relationship to Lotz determined. This has demonstrated that makers in Vienna at the time fell roughly in to two separate schools, each pursuing their own area of expertise. The identity – and his consequent relationship to Lotz – of the maker Anton Lotz has also been examined and a hypothesis put forward. While investigations in this chapter did not lead to an indication of where Lotz received his training, it is clear he can no longer be counted amongst the native Viennese makers and, as will be demonstrated in the following chapters, arrived in Vienna with his own unique approach to instrument design which quickly became one of the dominant forces in wind instrument manufacture in the late 18th century.
Chapter 2

Clarinet

Introduction

The chief obstacle faced in a comparative study of the extant clarinet of Theodor Lotz is the paucity of earlier or contemporaneous Viennese instruments with which to compare it. This in itself, however, is valuable evidence of the position of Lotz’s clarinets in Vienna in the last decade of the 18th century, suggesting that his skill was of a level to place him as the dominant maker of clarinets in the city, and further that he had brought his skills from elsewhere, rather than learning them in the clarinet poor environment of Vienna. Lotz himself is represented by one complete example and one recently uncovered left hand section.

Clarinet in B flat  Musée d’Arts et d’Histoire, Geneva, IM 136
Clarinet (fr.)  Museo Nazionale, Rome

This is not to say that clarinets were not made at all in Vienna prior to Lotz’s arrival in 1785. Indeed, a number of woodwind instrument makers active in Vienna before 1785 are known to have made clarinets, including Matthias Rockobaur (c1708 –1775), Jakob Baur (c1743 –1797), Friedrich Lempp (c1723 –1796) and Mathias Urban Thurner (c1714 –1786). Only one clarinet from amongst these makers is surviving however – that by Rockobaur in the Germanisches Nationalmuseum in Nuremberg (GNM: MIR 425). This suggests that, although clarinets were made in Vienna prior to 1785, the demand for them was not great and had certainly not

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1 This fragment was uncovered in the storerooms of the Muzeo Nazionale in Rome in 2010 and was reported to the present author by an Italian source. At present the museum is undergoing an intensive re-storage and re-cataloguing process, and further examination of this section will be possible once this is complete.
reached the level attained during Lotz’s years of activity in the city, when his fame rested chiefly on his production of clarinets.² Stradner suggests that few instruments, other than strings and organs, are surviving from the time of Maria Theresia (i.e. 1740-1780, exactly the time period concerned when discussing makers of a generation before Lotz) because at this time the ownership of instruments largely changed from nobles and courts to the musicians themselves. He argues that this meant owners of instruments they could change frequently and quickly, thus endangering their preservation.³ Although not represented by extant instruments, the other makers listed above are known to have made clarinets through advertisements, bills, or other surviving documentation.

It has been surmised that the maker M. Deper (dates unknown, early 18th century) was also active in Vienna.⁴ Stradner presents no archival or organological evidence to support this, but rather bases the suggestion on the fact that five of Deper’s six known surviving instruments are now preserved in Austrian collections.⁵ These extant instruments include an oboe, an *obo e d’amore*, an alto oboe, a tenor oboe, a bassoon and a clarinet.⁶ The clarinet in the Landesmuseum Linz (Mu 123) arrived in that collection from Stift Wilhering in Upper Austria. As several other Viennese instruments in the Linz collection, such as the flute by Rockobaur (Linz: Mu 139) and the oboe by Friedrich Lempp (Linz: Mu 120) also came from this monastery, it may indicate that they usually obtained their instruments from Vienna and therefore

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⁶ Young, 4900, 62.
makes it possible that Deper was indeed Viennese.\textsuperscript{7} If so, it seems unlikely he had any involvement with the court, as he is not recorded in Knaus’ \textit{Die Musiker im Archiv-bestand des Kaiserlichen Obersthofmeisteramtes}.\textsuperscript{8} The clarinet is a two-key example and as such is likely to predate the Rockobaur instrument but is missing the mouthpiece and barrel which might have provided valuable indicators. Furthermore, the instrument is badly damaged, with a severe crack running the length of the bell, distorting the bore. Internal data for the instrument is therefore not indicative of the instrument’s original condition and the comparisons rest chiefly on external characteristics. The instrument is examined in this study with its possible Viennese origins in mind, but without archival evidence (and no extant instrument by Deper is marked with a location) it is not accepted here as definitely representative of clarinet making in Vienna at this time.

\textbf{Plate 2.1. Clarinet in D by M. Deper (Linz: Mu 123).}

In light of this, the Lotz clarinet (made sometime between 1785 and 1792, as indicated by Lotz’s title included in the stamp) in the Musée d’Art et d’Histoire in Geneva (Geneva: IM 136) is therefore the second oldest surviving Viennese clarinet, and the oldest known surviving five-key Viennese clarinet. It has come to represent to today’s players and makers the typical style of Viennese clarinets in the latter part

\textsuperscript{7} Many of the instruments from Austrian monasteries in the Landesmuseum Linz arrived there during World War II when the monasteries were closed. Their provenance is therefore clear and they provide an accurate representation of one of the uses of these instruments at this time.

of the 18th century. It will be argued in this chapter that this particular ‘Viennese’ style did not in fact exist prior to Lotz’s arrival there, and that he introduced various aspects of clarinet design, either of his own innovation or from external influences, which then set the standard for Viennese clarinet making for at least the next decade, and furthermore that it was this design which caused an increased demand and enthusiasm for the clarinet in the city.

The measurements taken for the purposes of this comparative study included sounding length, bore diameter (measured at several points along the instrument’s length) and profile and tone hole sizes. For the purposes of comparison, the tone hole measurements (latitudinal and longitudinal) were used to calculate the area of the tone hole. The length of the expanding section of the bore is expressed as a percentage of the overall length of the instrument (not including mouthpiece). The percentage of the overall length occupied from the beginning of the expansion to the point at which the bore reaches double the area of its original size was also compared. As indicated in the methodology section, this was found to be the most effective method of comparing bore shapes. Where an original mouthpiece was present its dimensions, including sounding length, bore, and window opening, were also measured.9

Earlier Viennese clarinets

As detailed above, the only extant Viennese clarinet (or at least that which can be conclusively viewed as such) earlier than that by Lotz is an instrument in C by Rockobaur in the Germanisches Nationalmuseum Nuremberg (GNM: MIR 425).

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9 Where a mouthpiece was stamped by the maker in the same or similar manner to the rest of the instrument, this has been assumed as original, or at least contemporaneous. Where a mouthpiece has not been stamped, judgement as to its origins have been based upon style, fit and dimensions.
The museum catalogue dates the instrument to around 1750, whereas the museum’s file on the instrument dates it to c1765, a date which Ross believes to be accurate due to the relatively advanced form of the mouthpiece with “...evenly turned string grooves, a modest-sized window opening with table below, all this combined with the more Classic lines of the exterior profile of the whole instrument.”

**Plate 2.2. Clarinet in C by Matthias Rockobaur (GNM: MIR 425).**

The instrument by Rockobaur has three keys and is therefore representative of the baroque style of clarinet which evolved around 1750. The third key to be introduced was that for E/B which was typically mounted on the dorsal side of the instrument and activated by either thumb. This allowed the instrument to be played with the right or left hand uppermost, according to the player’s preference. An alternative F/C hole was provided on either side of the instrument – the hole not in use was plugged.

Due to the inherent stylistic differences between Baroque and Classical instruments it is impossible to meaningfully compare the Rockobaur instrument with that by Lotz, particularly considering the different nominal pitch of the two instruments. However, in order to gauge if the Rockobaur clarinet represented a style of instrument unique to Vienna around the middle of the 18th century, or if similar

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10 Frank P. Bär, Verzeichnis der Europäischen Musikinstrumente im Germanischen Nationalmuseum Nürnberg Vol. 4, (Wilhelmshaven: Florian Noetzel Verlag, 2003), 21; Ross, Clarinet Literature, 159.
12 Rice, The Baroque Clarinet, 55.
conventions were being observed in Vienna as elsewhere, some fundamental characteristics of this instrument will be examined and compared with others from well known contemporary makers in other cities.

It may be supposed from the origins of extant three-key clarinets known today that at this stage in its history the clarinet was largely produced in present day Germany. Albert Rice lists thirteen extant instruments, only two of which are not German in origin – one from Prague by Fridrich (Prague, NM: 666E) and the other the instrument by Rockobaur with which we are concerned here.\(^{13}\)

The Rockobaur instrument is in three sections – typical for instruments of this time – with three keys and an alternate F/C hole, for which the plug is extant.\(^{14}\)

**Plate 2.3. Double F/C hole on the Rockobaur clarinet (GNM: MIR 425), showing extant plug in place.**

The instrument has a bore of c13.5mm for the cylindrical portion of its length.\(^{15}\) This is somewhat larger than a three-key instrument by Strehli in the Stadtmuseum in

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\(^{13}\) Rice, *The Baroque Clarinet*, 164-165.

\(^{14}\) Ross, *Clarinet Literature*, 159.

\(^{15}\) Bär, *Verzeichnis* Vol. 4, 25. Internal bore measurements were not permitted by the museum, therefore catalogue information has been relied upon.
Munich (SM: 48-40) which measures 12.25-12.65mm, but smaller than earlier two-key instruments which, with some exceptions, have a bore of around 14.7-14.8mm.\textsuperscript{16} This is also in keeping with the date of the instrument as smaller bores, which benefit the higher range of the instrument, were favoured later in the century.\textsuperscript{17} The Deper two-key clarinet in Linz (Mu 123) has a bore ranging between 12.1 and 12.7mm. The bore of a three-key B flat clarinet in the Sir Nicholas Shackleton Collection (EUCHMI: 5167) by the as yet unidentified maker ‘IP’, and which would be roughly contemporaneous with the Rockobaur instrument, shares a similar sized bore at 13.4mm. Another three-key clarinet, by Stinglwagner (Linz: Mu 26), also has a similarly sized bore of 13.2mm.\textsuperscript{18}

\textbf{Plate 2.4. Clarinet in B flat by ‘IP’ (EUCHMI: 5167). Reproduced with permission of EUCHMI.}

\textsuperscript{16} Rice, \textit{Baroque Clarinet}, 163-164.
\textsuperscript{17} Rice, \textit{Baroque Clarinet}, 57.
\textsuperscript{18} Young, \textit{Landesmuseum}, 142.
Of particular interest is the clarinet by Fridrich (Prague, NM: 666E) as it has the same nominal pitch as the Rockobaur clarinet, three keys, and was made close to Vienna in Prague. For the cylindrical section of its bore, this clarinet measures more than a millimetre smaller than the Rockobaur clarinet, at 12.2mm, similar to the earlier instrument by Deper.20

Plate 2.6. Clarinet in C by Fridrich, Narodní Muzeum (Prague, NM: 666E).

19 Young, *Landesmuseum*, 143.
20 It should be noted that the mouthpiece and barrel of the Fridrich instrument were not included in the measurements as they are clearly of a later date than the rest of the instrument.
The bore diameter of the Rockobaur clarinet, therefore, does not differ markedly from other comparable instruments from other countries. The only instrument to show significant variation in bore size is that by Fridrich from Prague. The Fridrich clarinet is again the only notable exception when tone hole size is considered. Despite Rice’s assertion that finger hole size became smaller as the century progressed (that is, from Denner’s instruments to those from the mid 18th century), little variation was detected amongst the instruments in this study. The two-key Deper instrument in fact generally has tone hole areas somewhat smaller than the three-key instruments measured.

Of the three-key instruments, the Rockobaur clarinet on average has the larger tone hole areas, being larger than the clarinets by ‘IP’ and Stinglwagner for five of the eight tone holes compared. The thumb hole of the Rockobaur is smaller than the same hole on both the ‘IP’ and Stinglwagner clarinets, but by only 2.7mm² and 1.3mm² respectively. With a tone hole area of 24.2mm², the thumb hole of the Rockobaur clarinet is significantly larger than both the Deper (20.0mm²) and Fridrich (19.6mm²) clarinets. T4 of the Rockobaur clarinet is significantly larger than any of the other instruments measured, at 36.3mm², nearly 10mm² larger than the next largest T4 on any of the other clarinets (‘IP’ and Fridrich both measure 26.4mm²). Proportionally, this tone hole is positioned similarly on both the Rockobaur and Fridrich clarinets (at 75.3% and 76.5% of the section’s length respectively) and therefore this significant

21 Rice, Baroque Clarinet, 57.
22 The E/B tone hole of the Rockobaur clarinet was covered by the key head so as to prevent measurement of the tone hole on both planes. Measurements are therefore used from the published catalogue. All tone holes were measured where accessible.
difference in tone hole area cannot be accounted for by difference in position along the bore.

This tone hole primarily affects the tuning of $c'$ and $g''$. Without playing both instruments it is impossible to determine if the intonation of these notes differs significantly on each instrument. This tone hole is also half holed to produce $b$. The larger the tone hole, the easier this note is to produce and the clearer its tone. It may be that Rockobaur sacrificed some security of intonation on $c'$ and $g''$, which could be corrected by venting other tone holes, for a better $b$. If this is the case, this suggests that Rockobaur was aiming for greater consistency in quality throughout the clarinet’s range than the other makers, and was paying attention to areas of the compass which were generally neglected in the contemporary repertoire. Without playing the instrument, however, this must remain purely speculative.

The Rockobaur clarinet shares with the Fridrich instrument a large tone hole for E/B. Of the two, the Rockobaur is the larger by 2.1mm$^2$. That of the Rockobaur clarinet is 8.6mm$^2$ larger than the E/B tone hole on the ‘IP clarinet’. The significance of this will be discussed later in the chapter.

The evidence presented from these five instruments demonstrates that, while the Rockobaur clarinet generally does not differ significantly from other instruments for most of its tone holes, it has notable divergences in some significant areas, tending to be larger than other contemporary makers.
Table 2.1. Tone hole areas of two- and three-key clarinets. Tone hole sizes are in mm².

<table>
<thead>
<tr>
<th>Speaker</th>
<th>A</th>
<th>Thumb</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>E/B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rockobaur GNM: MIR 425</td>
<td>6.4</td>
<td>21.2</td>
<td>24.2</td>
<td>28.3</td>
<td>28.3</td>
<td>27.3</td>
<td>36.3</td>
<td>29.2</td>
<td>26.9</td>
<td>29.6</td>
</tr>
<tr>
<td>IP EUCHMI: 5167</td>
<td>-</td>
<td>27.8</td>
<td>26.9</td>
<td>26.4</td>
<td>26.9</td>
<td>25.5</td>
<td>26.4</td>
<td>28.3</td>
<td>29.7</td>
<td>38.3</td>
</tr>
<tr>
<td>Stinglwagner Linz: Mu 26</td>
<td>-</td>
<td>-</td>
<td>25.5</td>
<td>25.9</td>
<td>25.0</td>
<td>25.5</td>
<td>24.6</td>
<td>25.0</td>
<td>25.5</td>
<td>24.2</td>
</tr>
<tr>
<td>Fridrich Prague, NM: 666E</td>
<td>7.1</td>
<td>18.1</td>
<td>19.6</td>
<td>20.0</td>
<td>20.4</td>
<td>19.6</td>
<td>26.4</td>
<td>19.6</td>
<td>19.6</td>
<td>19.9</td>
</tr>
<tr>
<td>Deper Linz: Mu 123</td>
<td>-</td>
<td>23.6</td>
<td>18.1</td>
<td>23.7</td>
<td>23.3</td>
<td>23.3</td>
<td>24.2</td>
<td>22.1</td>
<td>22.5</td>
<td>42.2</td>
</tr>
</tbody>
</table>

Earlier clarinets – mouthpiece profiles

Rice asserts that, along with bore and tone hole size, the dimensions of the mouthpiece also became smaller as the 18th century progressed in order to favour the higher range of the instrument. The mouthpiece and barrel of the Deper instrument are missing, and those of the Fridrich are not original, therefore these clarinets are not included in the following discussion. Comparisons are made between the instruments by Rockobaur, ‘IP’, and Stinglwagner.

It is in the mouthpiece that the Rockobaur clarinet shows the greatest variation from the other instruments. It has the shortest facing at 49.1mm – 4.6mm shorter than the instrument by ‘IP’ – the shortest window at 26.3mm, as well as the most triangular window opening. This has a difference of 4.3mm from narrowest to widest (3.3mm to 7.5mm at the tip), whereas the instrument by ‘IP’ has a much less triangular opening, measuring a difference of only 0.7mm (8.8mm – 9.5mm).

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23 Rice, Baroque Clarinet, 57.
The form of the Rockobaur mouthpiece is also markedly different. While the instruments by ‘IP’ and Stinglwagner show the typical Baroque ‘duckbill’ profile, the Rockobaur instrument has a much more modern appearance with a more convex vamp and rounded sides.

Plate 2.7. Profile of mouthpieces by Rockobaur (GNM: MIR 425, image from catalogue), ‘IP’ (EUCHMI: 5167), and Stinglwagner (Linz: Mu 26, image kindly provided by Landesmuseum Linz).

Significantly, the mouthpieces on the two clarinettes d’amour by Rockobaur (Vienna: GdM 130 and GdM 131) have the more typical concave shape of the ‘duckbill’ profile common to Baroque instruments, but still maintain a pronounced wedge-shaped window opening. The shape of these two mouthpieces may indicate that these instruments are earlier in date than the clarinet in Nuremberg.

24 The Gesellschaft der Musikfreunde does not permit measurements of its instruments and has no information relating to this on file. It has therefore been impossible to determine if the window openings on these instruments correspond to that found on the clarinet in C in Nuremberg. Nor does the institution allow photographs.
Earlier clarinets – bore comparisons

The bore of the Rockobaur clarinet begins to flare 418.7mm from the top of the instrument, and the flare comprises 34.8% of the total length of the instrument. The Fridrich clarinet has a flare, which, not including the later barrel and mouthpiece, comprises 39.2% of the overall length. If the mouthpiece and barrel of the Rockobaur clarinet are also disregarded for the purposes of comparison, the percentage of the length occupied by the flare is 38.8%, a negligible difference of 0.4% from the Fridrich instrument. The bore of the clarinet by ‘IP’ showed significant oval distortion in this section of the instrument and the measurements for bore flare could therefore not be included. Likewise, the large crack on the bell of the Deper instrument precludes accurate measurements of this part of the instrument.

The Fridrich clarinet reaches double its bore area higher on its bore than the Rockobaur clarinet. Double bore area on the Fridrich clarinet is reached at 80.3% along the length of the instrument, whereas double bore area is not reached on the Rockobaur clarinet until 85.5% along the length of the instrument (calculated without the mouthpieces and barrels for both instruments). This suggests the flare of the Fridrich clarinet is more pronounced and occurs at a greater rate than that of the Rockobaur instrument. The proportion of the bore which is taken up by the beginning of the flare to where it reaches double the bore area is shorter on the Fridrich clarinet at 19.5%, compared to 24.3% on the Rockobaur clarinet.

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25 Bär, Verzeichnis Vol. 4, 25. Internal measurements were not permitted by the Germanisches Nationalmuseum and these measurements have been taken from a graphs provided by Frank Bär and measurements reproduced in their catalogue. As the exact measurements which composed the graph were not given there may be some slight variation in the accuracy of this measurement, but it is not considered significant due to the level of detail of the graph.
Table 2.2. Flare length as a percentage of total length and the point at which double the bore area is reached for two- and three-key clarinets in this study.

<table>
<thead>
<tr>
<th></th>
<th>Percentage of length</th>
<th>Double bore area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rockobaur</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GNM: MIR 425</td>
<td>38.8*</td>
<td>85.5</td>
</tr>
<tr>
<td>Fridrich</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prague, NM: 666E</td>
<td>39.2</td>
<td>80.3</td>
</tr>
</tbody>
</table>

*Not including mouthpiece and barrel for the purposes of comparison with the Fridrich clarinet.

The following graph demonstrates that, while the Rockobaur clarinet is slightly longer than the Fridrich instrument, the general shape of the flare does not differ greatly between the two.

**Graph 2.1. Demonstrating the relative flare shapes of the clarinets in C by Rockobaur (GNM: MIR 425) and Fridrich (Prague, NM: 666E). The portion of the instruments shown is the entire length of the stock and bell.**
Earlier clarinets – decoration

External decoration and shape, such as turned rings and lines, can be indicative of a certain style or maker and will therefore be considered here. The Rockobaur clarinet shares some similarities in decoration with the three-key clarinet by Stinglwagner (Linz: Mu 26), particularly in the turning of the middle section. The similarities become less apparent on the stock/bell section and the two mouthpieces and barrels share little in common.

Plate 2.8. Middle finger-hole sections of Rockobaur (GNM: MIR 425) (top) and Stinglwagner (Linz: Mu 26) (bottom), showing the similarity of the turned decoration.

Four of the instruments – Deper, Stinglwagner, ‘IP’ and Rockobaur – have in common turned incised lines on rings for key mountings. The ‘IP’ instrument differs slightly in having double incised lines on the wooden rings for mounting the A and speaker keys, but has a single line, as do all the others, on the mounting for the flap of the E/B key. This is also a feature of the Jacob Denner clarinet in Nuremberg (GNM: MI 149). This may suggest that this form of decoration was more universal in the Baroque period than it was later in the century when, as will be shown, this
was a feature almost exclusive to Viennese instruments. The turned incised line decorating both wooden rings for mounting the A and speaker keys on the Deper clarinet cannot therefore be used as evidence to suggest the instrument is Viennese in origin. The other decorative turning on the instrument shows little in common with that found on the Rockobaur clarinet, but neither can this be considered conclusive, as this may be the result of changes in style during the presumed fifty or more years between the construction of the two instruments. It should be noted that, while the clarinet by Jacob Denner (GNM: MIR 149), and also an instrument by Oberlender (Berlin: 2870), have the turned incised lines on the wooden rings noted above, their wooden rings are round rather than square, unlike the Deper instrument.

Plate 2.9. Wooden rings for mounting A and speaker keys on clarinets by Rockobaur (GNM: MIR 425), Deper (Linz: Mu 123), Denner (GNM: MI 149), ‘IP’ (EUCHMI: 5167), and Stinglwagner (Linz: Mu 26, image kindly provided by Landesmuseum Linz).

Some of the decorative turning on the Deper instrument, such as that found at the top of the finger hole section, between the two sets of tone holes and at the ferrule mounting T7, share marked similarity with the instrument by Jacob Denner (Berlin: 223) and Oberlender (Berlin: 2870). It differs considerably from the Denner

instrument, however, in the turning and external profile of the bell, which appears individualistic on the Deper example. The Deper clarinet is also missing a ferrule on the rim of the bell, presumably of ivory or horn, which, to this writer’s knowledge, is unique amongst two-keyed clarinets. Interestingly, the decorative turning and external profile on the bell of the Rockobaur instrument has more in common with Denner instruments than the Deper clarinet. The clarinet by Fridrich does not have turned incised lines on the wooden ring mountings for the A and speaker keys, nor on the block mounting for the E/B key. Indeed, its decoration is considerably more simple than any of the other clarinets studied.

Plate 2.10. Bells of clarinets by Deper (Linz: Mu 123), Rockobaur (GNM: MIR 425), Denner (GNM: MIR 14927), and Fridrich (Prague, NM: 666E).

The keys on the Deper clarinet are very similar, but not identical, to those on the Nuremberg Denner instrument. The examination of the Deper clarinet has therefore not yielded any defining characteristics which might suggest the instrument was

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Viennese (or Austrian) in origin. Indeed, it differs little from contemporary German instruments such as those by Jakob Denner and Oberlender.

An unusual feature of the Rockobaur clarinet is its barrel, which is of horn. As the sections of the instrument do not come apart it is impossible to tell if the barrel is entirely of horn or if this is an outer veneer. The density of the horn means X-ray images of the section also do not reveal its construction. The author is aware of no other clarinet with a similar form of decoration although according to Shackleton the basset horn by Mayrhofer in Nuremberg (GNM: MI 133) also has a barrel made of horn.28


As the clarinettes d’amour by Rockobaur do not have barrels, instead employing brass crooks, this feature is not present. They do, however, have a horn mount on the lower portion of the mouthpiece. The possible significance of this is examined below.

Rockobaur also employed an extended horn ferrule at the top of the stock (see Plate 2.3) which, unlike other instruments, extends further down the stock, past the F/C

hole, to the wooden ferrule mounting the E/B key. The clarinettes d’amour share this characteristic, and most of the other decorative features of this instrument, including key shape. They only differ on the E/B key – on the clarinet this is straight and wide at the touchpiece tapering to a point where it connects with the key-head, whereas on both clarinettes d’amour it is cranked to one side and is of uniform width for the length of the key. These may be later alterations, applied to the instrument to adapt it to the left hand uppermost position of playing once this became established.

The above discussion has shown that the Rockobaur clarinet has a bore size generally in common with other contemporaneous instruments made elsewhere. Its tone holes are generally larger, although in most cases not significantly so, but with several marked variations from the other instruments. While such a small sample cannot provide enough information to draw definite conclusions as to national characteristics, the significance of these findings will be placed in context in the following discussion on later Viennese instruments.

David Ross, who has played the Rockobaur instrument, has this to say about its playing qualities:

Personal observations on playing qualities can sometimes be deceiving, but of all the three-keyed clarinets on which I played, this instrument played perhaps the nicest, with a sweet, round sound. The intonation was good in both registers, sounding at around a’ = 430.29

This demonstrates that, although clarinet making may not have been greatly in demand in Vienna at the time, makers were certainly capable of producing instruments of quality. Instruments of this kind, however, would have been old fashioned by the time Lotz arrived in Vienna.

29 Ross, Clarinet Literature, 159-160.
The Lotz Clarinet

The clarinet by Lotz (Geneva: IM 136) is on first examination a relatively standard instrument for the latter part of the 18th century. It has five brass keys – speaker, A, A flat/E flat, F#/C# and E/B, and is in six sections – mouthpiece, barrel, left hand, right hand, stock and bell. The mouthpiece is of grenadilla wood and the body of the instrument is of boxwood with ivory ferrules. It has a total sounding length of 671.1mm and according to David Ross plays at around $a' = 435-437$. Ross also played the Lotz clarinet and was as enthusiastic about its playing qualities as he was of the Rockobaur clarinet. He described playing on the instrument as:

...a gratifying experience. It probably possessed the largest, “thickest” sound of any eighteenth-century clarinet that I tested, rounded and woody throughout its entire range,... Particularly impressive were the good intonation between the registers and the evenness of scale in the lower register.  


All sections of the instrument are clearly stamped with variations on [Hapsburg eagle]/THEODOR/LOTZ/K.K. HOF/INSTR.MACHER/IN WIEN. The inclusion of the city and Lotz’s title allows us to date the instrument between 1785, the year of Lotz’s appointment to the court, and 1792, the year of his death. There is no evidence to suggest that any of Lotz’s pupils – Scholl, Tauber or Griesbacher – ever

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30 Ross, Clarinet Literature, 252. Playing tests of the instrument are no longer permitted by the museum.
31 Ross, Clarinet Literature, 251.
used his mark. Indeed, such a practice would have been illegal, as the use of the Hapsburg eagle was a jealously guarded privilege, as demonstrated in Chapter 1.

**Plate 2.13. Detail of the stamp from the left hand section of the clarinet in B flat by Theodor Lotz (Geneva: IM 136).**

The left and right hand sections are additionally stamped ‘B2’. Rice has suggested that this denotes the original presence of alternative middle sections, also pitched in B flat, but of varying lengths in order to accommodate different pitch standards, so called *Mutationen.*\(^{32}\) That Lotz made such *Mutationen* is evidenced by a Vienna Hoftheater bill for April 1782-March 1783, in which Lotz provided clarinets, together with *Mutationen,*\(^ {33}\) most likely for the use of the Stadler brothers.

Extra Ausgaben
No. 168. dem Lotz Theodor für 2 neue Clarinet samt dazu gehörigen Mutationen ut Nr 168 86fl 40\(^ {34}\)
[Extra Expenses
No. 168. To Lotz Theodor, for two new clarinets together with appropriate exchange sections transaction no. 168 86 fl 40]

Peter van der Poel, however, believes a more likely explanation for this marking is that the instrument was one of a numbered pair or set.\(^ {35}\) It was common practice to stamp sets of instruments, such as basset horns, with its corresponding number in the

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\(^{32}\) Rice, *Classical Period,* 52.


\(^{34}\) Entries from the *Hoftheater Rechnungen* quoted in Hellyer, “Some Documents,” 51.

\(^{35}\) Peter van der Poel, Personal Communication, July 2009.
set. In these cases the number appears on every section of the instrument. The practice seems to have been less common with clarinets as very few extant instruments are so stamped. One example is the B flat clarinet by Hammig in Edinburgh (EUCHMI: 4988). In this instance the number ‘2’ occurs on the left and right hand sections, stock and bell (the barrel bears no mark of any kind and may not be original). Considered in this context, the numbering of ‘B2’ on the Lotz clarinet is more readily explained by the presence of *Mutationen*, as it is confined only to the left and right hand sections.

The barrel is prominently marked with the number ‘39’. It is the author’s opinion that this denotes the barrel as one of several belonging to the instrument, of differing lengths, with ‘39’ referring to its relative length in the set. This would seem a more satisfactory explanation than that of a serial number, as no other instrument by Lotz bears such a mark and the number does not appear elsewhere on the instrument.

The significance of the position of the stamp on the mouthpiece and what this implies for reed position has been discussed elsewhere. As the present author sees no reason to disagree with these arguments it will only therefore be added that in this instance the stamp occurs on the horn mount on the lower portion of the mouthpiece, and that the stamp is unusually positioned to the right of centre (from the players’ perspective). It is possible that the glue securing the horn mount to the underlying wood of the mouthpiece has at some time loosened and the horn mount has not been re-secured at its original position, thus leaving the stamp off centre, where it would normally be found. This author suggests that the rough hand cut grooves leading up

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36 Rice *Classical Period*, 52.
the vamp from the machined grooves are also evidence of later work and were not done by Lotz.

**Plate 2.14. Mouthpiece of clarinet in B flat by Theodor Lotz (Geneva: IM 136).**

The use of the horn mount at the base of the mouthpiece appears to be a characteristic common to many Viennese clarinets and basset horns. It is found on instruments by Griesbacher (Prague, NM: 1673E), Scholl (Vienna: GdM 132 and 133), Friedrich Lempp (Linz: Mu 28) and Merklein (EUCHMI: 4876). Of these, only the Lempp instrument, discussed in greater detail in Chapter 3, may predate the Lotz clarinet. This feature is not typically seen on contemporary instruments from other areas, such as those by August Grenser, Franz Doleisch, Prudent Theirriot or Bühner & Keller. Of earlier Viennese instruments, the basset horn by Jakob Baur in Nuremberg (GNM: MI 134) does not have a mouthpiece and the unusual mouthpiece and barrel design of the Rockobaur clarinet in the same museum (GNM: MIR 425) has been discussed above. The two *clarinettes d’amour* by Rockobaur (Vienna: GdM 130 and 131) do have a horn mount on the lower part of the mouthpiece, of a more stylized and decorative form than that found on the Lotz clarinet, similar to the
horn mount on the base of the mouthpiece of the basset horn by Lempp (Linz: Mu 28). This may suggest Lotz was adhering to a local tradition rather than introducing a new decorative or design aspect.

As the mouthpieces on the Lempp basset horn and Rockobaur *clarinettes d’amour* are of the socket type, fitting over a brass crook, the presence of the horn mount is readily explained as reinforcement of a potentially weak area of the instrument. It is less easily comprehended on the later mouthpieces of the tenon type, however. The horn mount may still serve a reinforcing purpose, to prevent cracking of the wood from the lower edge of the mouthpiece (the author’s own mouthpiece has cracked in this way). Eric Hoeprich has also suggested that making the mouthpiece with the horn mount may simplify the construction process.\(^{37}\) If this portion of the mouthpiece is left rounded and integral with the rest of the mouthpiece, as seen on mouthpieces by August Grenser and most other contemporary makers, access to the table of the mouthpiece to plane it flat is difficult to achieve. By making the entire length of the table flat, however, then rounding off the lower portion with the horn mount, the maker is easily able to achieve a perfectly flat table – crucial to the quality of the mouthpiece. It is unlikely that the horn mount served a purely decorative purpose, as its similarity in colour to the cocus wood of the mouthpiece does not make it an obvious contrast at a distance.

**Comparisons - bore diameter and shape**

For most of the instrument’s length, the bore diameter of the Lotz clarinet measures around 14.8mm-14.9mm. The bore of the barrel is slightly larger at 15.1mm. The unusual size of this bore becomes apparent when compared to those of

contemporaneous makers such as August Grenser and Franz Doleisch. A clarinet by Doleisch in Edinburgh (EUCHMI: 4843) dated 1793, has a bore diameter of 13.6mm, a difference of 1.3mm. It also shares the characteristic of a larger barrel than the following bore, which is now warped but measures around 14.6mm. The date of this instrument – 1793, the year after Lotz’s death – closely associates it with Lotz’s years of activity. The bore of the Lotz clarinet is nearly 1.5mm larger than the bore of the earlier Viennese clarinet by Rockobaur.

Many of the clarinets made in Vienna by makers associated with Lotz, particularly Griesbacher, record a similar bore diameter to the Lotz clarinet. The Griesbacher B flat clarinet in the Museum Viadrina in Frankfurt an der Oder (FO: V-185J) measures only marginally smaller, at 14.7mm and the clarinet in A in Leipzig (Leipzig: 1484) corresponds to the Lotz clarinet at 14.8mm.\(^{38}\) In other Viennese instruments of a slightly later date than that by Lotz, there is a trend towards slightly smaller bores, but still somewhat larger than bores of contemporary clarinets made elsewhere. This is generally not less than 14.3mm, demonstrated consistently in three instruments by Hammig (EUCHMI: 4988; EUCHMI: 5275 and Schlader Collection).

Six-key instruments by Tauber tend towards slightly larger bores, between 14.9mm (EUCHMI: 4798) and 15.0mm (EUCHMI: 4779. This instrument is in A). However a twelve key clarinet by Tauber (EUCHMI: 5267), of apparently a later date, has a smaller bore of 14.3mm. Taken together with the similar bore diameter of Hammig and Merklein (EUCHMI: 4876, 14.2mm; KHM: SAM 326, c14mm\(^{39}\)) instruments,  

\(^{38}\) Measurements taken from two drawings by Giles Thomé (1996) and Bruno Spinosi (1996?) provided by the museum. The instrument was not available for measurement during the present author’s visit.

\(^{39}\) The museum required this instrument to be measured at the tenons with its own measuring calipers, which were not digital and were accurate only to the nearest mm.
these measurements support the hypothesis of a tendency towards smaller bores in Vienna in the first half of the 19th century, and may be directly related to the addition of keys.

Table 2.3. Maximum and Minimum Bore diameters for the key Viennese clarinets in this study.

<table>
<thead>
<tr>
<th></th>
<th>Minimum Bore</th>
<th>Maximum Bore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (B♭) Geneva: IM 136</td>
<td>14.9</td>
<td>58.6</td>
</tr>
<tr>
<td>Griesbacher (A) Prague, NM: 1673E</td>
<td>14.5</td>
<td>52.9</td>
</tr>
<tr>
<td>Griesbacher (B♭) FO: V-185J</td>
<td>14.7</td>
<td>58.9</td>
</tr>
<tr>
<td>Griesbacher (C) FO: V-186J</td>
<td>13.0</td>
<td>-</td>
</tr>
<tr>
<td>Griesbacher (A) Leipzig: 1484</td>
<td>14.8</td>
<td>54.8</td>
</tr>
<tr>
<td>Tauber (B♭) EUCHMI: 4798</td>
<td>14.9</td>
<td>58.5</td>
</tr>
<tr>
<td>Tauber (A) EUCHMI: 4779</td>
<td>14.9</td>
<td>54.9</td>
</tr>
<tr>
<td>Tauber (B♭) EUCHMI: 5267</td>
<td>14.3</td>
<td>58.4</td>
</tr>
<tr>
<td>Hammig (B♭) EUCHMI: 4988</td>
<td>14.5</td>
<td>56.1</td>
</tr>
<tr>
<td>Hammig (B♭) EUCHMI: 5275</td>
<td>14.4</td>
<td>58.5</td>
</tr>
<tr>
<td>Hammig (B♭) Schlader Collection</td>
<td>14.3</td>
<td>57.5</td>
</tr>
<tr>
<td>Merklein (B♭/A) KHM: SAM 326</td>
<td>14.0</td>
<td>54.0</td>
</tr>
<tr>
<td>Merklein (B♭) EUCHMI: 4876</td>
<td>14.2</td>
<td>57.2</td>
</tr>
</tbody>
</table>

A clarinet by Schölnast of Pressburg (EUCHMI: 4710) measures 14.7mm, indicating that larger bores were also made in that city. Considering the proximity of Pressburg and Vienna, similarities in instrument design are not surprising. Lotz’s career is evidence in itself of a healthy artistic traffic between the two cities. Which direction
the trend travelled is impossible to determine without more surviving instruments, particularly from an earlier date. Schölnast is the earliest maker in Pressburg identified by Langwill for which there are surviving instruments, but there is little doubt that an instrument making tradition flourished there prior to this. The discussion on Anton Lotz in Chapter 1 hypothesises on Lotz’s connection with this. Interestingly, although German instruments have a tendency towards smaller bores at this time, many French clarinets share similarly large bores with Viennese instruments. An instrument by Prudent Theirriot (EUCHMI: 5115) does indeed have a smaller bore at 13.7mm, but many, including instruments by Michel Amlingue, Bühner & Keller, Dominique Porthaux, Roche and Theodore have bore measurements in excess of 14mm.

The smallest of these is a five key clarinet by Amlingue (EUCHMI: 5116) measuring 14.2mm. However, another instrument by Amlingue with ten keys (EUCHMI: 4986) measures 14.8mm. The instrument by Porthaux (EUCHMI: 5195) measures 14.4mm, while the instruments by Roche (EUCHMI: 5196) and Theodore (EUCHMI: 4899) have the largest bores at 15.0mm and 15.1mm respectively.
Table 2.4. Minimum and maximum bores for French clarinets measured for this study.

<table>
<thead>
<tr>
<th></th>
<th>Minimum Bore</th>
<th>Maximum Bore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porthaux (B♭) EUCHMI: 5195</td>
<td>14.4</td>
<td>54.7</td>
</tr>
<tr>
<td>Prudent (B♭) EUCHMI: 5115</td>
<td>13.7</td>
<td>52.9</td>
</tr>
<tr>
<td>Theodore (B♭/A) EUCHMI: 4899</td>
<td>15.1</td>
<td>60</td>
</tr>
<tr>
<td>Amlingue (B♭) EUCHMI: 5116</td>
<td>14.2</td>
<td>57.1</td>
</tr>
<tr>
<td>Amlingue (B♭) EUCHMI: 4986</td>
<td>14.8</td>
<td>57.6</td>
</tr>
<tr>
<td>Amlingue (A) Leipzig: 1475</td>
<td>14.6</td>
<td>59.3</td>
</tr>
<tr>
<td>Roche (B♭) EUCHMI: 5196</td>
<td>15.0</td>
<td>58.5</td>
</tr>
<tr>
<td>Bühner &amp; Keller (B♭/A) EUCHMI: 4856</td>
<td>14.6</td>
<td>56.8</td>
</tr>
<tr>
<td>Bühner &amp; Keller (B♭) EUCHMI: 4795</td>
<td>14.7</td>
<td>53.4</td>
</tr>
<tr>
<td>Bühner &amp; Keller (C) EUCHMI: 4857</td>
<td>13.2</td>
<td>45.7</td>
</tr>
</tbody>
</table>

Again, the lack of earlier Viennese clarinets makes it impossible to determine if this trend between French and Austrian instruments was coincidental or if one copied the other and if so, which was the innovator. The instruments by Porthaux and Theodore may predate Lotz’s clarinet as suggested by their earlier design feature of an integral stock and bell. This may indicate that the larger bore was originally a French design which Lotz may have applied to his own instruments.

There is evidence to suggest that French fashions and trends were popular in the German speaking lands during this time. According to Rice, from the 17th century onwards the German nobility “slavishly” copied their French contemporaries,
“...adopting their language and any new fashionable addition for their courts.”³⁰ That Lotz was exposed to an environment where this was the case is supported by the following statement from Evans. “Above all French was a linguistic fashion...of many aristocrats, artists, and musicians, even of prelates like Cardinals Migazzi and Batthyány, archbishop of Vienna and primate of Hungary respectively...”³¹ It will be remembered from Chapter 1 that Lotz was employed for several years by Batthyány. The Hapsburgs also spoke French at court from the reign of Maria Theresia onwards.³²

This tendency towards French adoration is explained by Fauchier-Magnan. “Since Germany, ruined by the horrors of war [Thirty Years War], was incapable of producing anything original in art or literature it was quite natural that Italian and French influences, welcomed with open arms, should find a soil propitious to their development.”³³ He argues that the revocation of the Edict of Nantes in 1685, causing approximately 400 000 French Protestants to leave France and settle in neighbouring Protestant countries, including Germany, contributed greatly to the influx of French culture into Germany.³⁴ Amongst these refugees would have been skilled tradesmen who employed their French methods in their new country.³⁵ Although this date is too early to have a direct influence on Lotz and his clarinets, it does indicate a predisposition to a strong French influence in the area where Lotz was born.

³¹ Evans, Austria, Hungary, and the Hapsburgs, 59.
³² Bérenger, A History, 120.
³⁴ Fauchier-Magnan, Small German Courts, 25.
³⁵ Fauchier-Magnan, Small German Courts, 25.
Arguing against a conscious adaptation of French designs in order to satisfy a Gallomanic client base is the fact that Lotz’s clarinets are never referred to in any way in contemporary sources which indicates an adherence to French style. This does not rule out the possibility, however, of Lotz coming under some form of French influence during his training.

The flare of the bore in the Lotz clarinet constitutes 26.8% of the total length of the instrument,\(^{46}\) considerably shorter than the 34.8% of the Rockobaur clarinet discussed above.\(^{47}\) The flare on the Lotz clarinet begins above the tone hole for E/B, which is affected by its positioning within the flare of the bore. The bore begins to flare at a diameter of 14.9mm, and completes its flare at the issuance of the bell at 58.6mm, covering a distance of 160.7mm. The flare therefore has an overall conicity of 0.27, somewhat more pronounced than the 0.23 of the Rockobaur clarinet.

The flare on the Tauber clarinet in B flat (EUCHMI: 4798) is 15.6mm shorter than that found on the Lotz clarinet, and therefore constitutes only 24.2% of the total length of the instrument. As this instrument begins its flare at the same diameter as the Lotz instrument (14.9mm) and has an end of bell diameter virtually identical to the Lotz (58.5mm) but which flares over a shorter distance, the overall conicity of the flare is more pronounced, at 0.31. However, it should be noted that warping in the bore made it difficult to determine where the flare actually started, and these measurements should be considered with this in mind.

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\(^{46}\) This measurement does not include the mouthpiece, both because many instruments are lacking their original mouthpieces and the bore of the mouthpiece follows a different pattern to the rest of the instrument. The mouthpiece was included in the overall measurement for the baroque clarinets however, as this was integral with the barrel.

\(^{47}\) The percentage for the Rockobaur clarinet in this instance includes the barrel in the measurement.
The flare on the other Tauber B flat clarinet in Edinburgh (EUCHMI: 5267), is shorter again, comprising 23.6% of the total length. The flare begins at 14.3mm and progresses to a similar measurement of the previous Tauber instrument at 58.4mm. As the flare has nearly the same starting and finishing measurements as the previous instrument, and only differs in length by 1.3%, the overall conicity is also much the same at 0.32.

The flare of the Tauber clarinet in A (EUCHMI: 4779) is slightly shorter again, comprising 22.4% of the total length of the instrument. Despite having a different nominal pitch, it shares a similar conicity with the other Tauber instruments at 0.31.

The Tauber instruments reach double the bore area only slightly later than the Lotz clarinet.

Table 2.5. Percentage of the total length of bore taken up by the flaring portion, conicity, and point at which double the bore area is reach on three Tauber instruments, compared to Lotz.

<table>
<thead>
<tr>
<th></th>
<th>Percentage of LOA</th>
<th>Conicity</th>
<th>Double bore area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (B♭)</td>
<td>26.8</td>
<td>0.27</td>
<td>84.8</td>
</tr>
<tr>
<td>Geneva: IM 136</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tauber (B♭)</td>
<td>24.2</td>
<td>0.31</td>
<td>85.6</td>
</tr>
<tr>
<td>EUCHMI: 4798</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tauber (B♭)</td>
<td>23.6</td>
<td>0.32</td>
<td>86.9</td>
</tr>
<tr>
<td>EUCHMI: 5267</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tauber (A)</td>
<td>22.9</td>
<td>0.31</td>
<td>87.9</td>
</tr>
<tr>
<td>EUCHMI: 4779</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The similarity in the length and shape of the flare of the three Tauber instruments examined is demonstrated in the following graph.
Graph 2.2. Comparison of bore flare shape in the stock and bell sections of Tauber instruments EUCHMI: 4798, EUCHMI: 5267 and EUCHMI: 4779.

By adding the Lotz clarinet to this graph, the similarity between it and instruments by Tauber become evident.

Graph 2.3. Comparison of Lotz and Tauber clarinet bores in the stock and bell.
As Tauber was Lotz’s pupil, as shown in Chapter 1, it is not surprising to find marked similarities between his instruments and that by Lotz. If any difference is to be observed, it is that the Lotz clarinet has a slightly steeper curve than that exhibited by the Tauber instruments.

Instruments by Griesbacher, whom it was also demonstrated in Chapter 1 had a close connection with Lotz, generally have a slightly shorter flare than the Lotz instrument, comprising between 21.7 – 23.8% of the total length of the instrument. However, as they all reach double the bore area at approximately the same place as the Lotz clarinet, ranging between 83.6 – 86.2%, they consequently have a much more pronounced rate of conicity. The clarinet in C by Griesbacher (FO: 186) has not been included in this discussion as it is lacking a bell.

*Table 2.6. Percentage of total length (LOA) of flaring section of the bore, point at which double the bore area is reached and overall conicity of Griesbacher clarinets in this study compared with the Lotz clarinet.*

<table>
<thead>
<tr>
<th>Clarinet Type</th>
<th>Percentage of LOA</th>
<th>Double bore area %</th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (B♭) Geneva: IM 136</td>
<td>26.8</td>
<td>84.8</td>
<td>0.27</td>
</tr>
<tr>
<td>Griesbacher (B♭) Prague: 1673E</td>
<td>23.8</td>
<td>85.4</td>
<td>0.49</td>
</tr>
<tr>
<td>Griesbacher (A) Prague, NM: 1673E</td>
<td>22.5</td>
<td>86.2</td>
<td>0.49</td>
</tr>
<tr>
<td>Griesbacher (B♭) FO: V-185J</td>
<td>22.1</td>
<td>83.6</td>
<td>0.35</td>
</tr>
<tr>
<td>Griesbacher (A) Leipzig: 1484</td>
<td>21.7</td>
<td>84.9</td>
<td>0.31</td>
</tr>
</tbody>
</table>

The following graph demonstrates the consistency of bore shape in clarinets by Griesbacher.
Graph 2.4. Stock and bell section of the bores of Griesbacher clarinets in this study.

When compared with the Lotz clarinet, it can be seen that the instruments are generally quite similar. However, it can be observed in the following graph that the Lotz clarinet begins to flare earlier than any of the Griesbacher instruments.

Graph 2.5. Comparative graph of the stock and bell sections of bores from clarinets by Griesbacher and Lotz.
Instruments by Hammig have a shorter flare than the Lotz clarinet, ranging from between 21.3% (EUCHMI: 5275) to 23.6% (EUCHMI: 4988) of the total length. All the Hammig instruments measured, however, had a greater conicity than the Lotz clarinet, increasing from 0.31 (EUCHMI: 4988), to 0.34 (Schlader) to 0.35 (EUCHMI: 5275). It is interesting to note with these Hammig instruments that the decrease in the length of the flare is directly proportional to the increase in conicity.

**Table 2.7. Relationship between decreased length of flare and increased conicity in clarinets by Hammig.**

<table>
<thead>
<tr>
<th>Flare (% of overall length)</th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUCHMI: 4988 23.6</td>
<td>0.31</td>
</tr>
<tr>
<td>Schlader</td>
<td>21.6</td>
</tr>
<tr>
<td>EUCHMI: 5275 21.3</td>
<td>0.35</td>
</tr>
</tbody>
</table>

The consistency of Hammig’s bore shapes is demonstrated in the following table.

**Graph 2.6. Hammig stock and bell bore shape comparisons.**
The following comparison of the three Hammig instruments studied with the Lotz clarinet shows that, while all the instruments share a similar length of flare, the curve of the Lotz clarinet is steeper and more pronounced than that found on any of the Hammig instruments.

Graph 2.7. Comparison of Hammig and Lotz stock and bell bores.

![Graph showing a comparison of Hammig and Lotz stock and bell bores.]

Table 2.8. Percentage of overall length (LOA) of flaring bore section, point at which double the bore area is reached, and conicity of Hammig clarinets compared to Lotz.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Percentage of LOA</th>
<th>Double bore area %</th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (Bᵇ) Geneva: IM 136</td>
<td>26.8</td>
<td>84.8</td>
<td>0.27</td>
</tr>
<tr>
<td>Hammig (Bᵇ) EUCHMI: 4988</td>
<td>23.6</td>
<td>85.9</td>
<td>0.31</td>
</tr>
<tr>
<td>Hammig (Bᵇ) EUCHMI: 5275</td>
<td>21.3</td>
<td>86.9</td>
<td>0.35</td>
</tr>
<tr>
<td>Hammig (Bᵇ) Schlader Collection</td>
<td>21.6</td>
<td>85.5</td>
<td>0.34</td>
</tr>
</tbody>
</table>
One instrument which shares the same conicity as the Lotz clarinet is, perhaps significantly, by the French makers Bühner & Keller (EUCHMI: 4856). Although the length of the flare is slightly shorter at 25.4%, it has the same conicity as the Lotz clarinet at 0.27. The similarity between the bore shape in the flaring portion of the two instruments is demonstrated below. Although similar in general shape, it will again be observed that the curve of the Lotz clarinet is somewhat steeper.

**Graph 2.8. Comparison of Lotz and Bühner & Keller (EUCHMI: 4856) stock and bell bore shapes.**

The curve of the Lotz clarinet is similarly steeper than any of the other French instruments included in this study, a selection of which appears on the graph below.
Graph 2.9. Comparative graph of stock and bell sections of the bore of the Lotz clarinet and selected French instruments.

Of the non-Viennese instruments, the clarinet by Schölnast (EUCHMI: 4710) displays the greatest similarity with the Lotz instrument when the shape of the expanding part of the bore is considered. This instrument is missing its barrel and therefore the calculation of the length of the flare as a percentage is compromised. As, however, the section lengths of the Schölnast clarinet are very similar to those of the Lotz, we may include the length of the Lotz barrel in the calculations for the Schölnast instrument to give a reasonable estimate of the overall length of the instrument. Including this measurement gives a percentage of 30.5%, still somewhat larger than the Lotz by 3.7%. Its conicity is also less pronounced at 0.25. This is reflected in the following graph, where the shallower and shorter curve of the Lotz instrument can clearly be seen in comparison to the Schölnast clarinet.
Graph 2.10. Comparison of Lotz (Geneva: IM 136) and Schölnast (EUCHMI: 4710) clarinets in the stock and bell sections.

Table 2.9. Percentage of overal length (LOA), point at which double the bore area is reached, and conicity of Schölnast clarinet compared to Lotz.

<table>
<thead>
<tr>
<th></th>
<th>Percentage of LOA</th>
<th>Double bore area %</th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (B♭)</td>
<td>26.8</td>
<td>84.8</td>
<td>0.27</td>
</tr>
<tr>
<td>Geneva: IM 136</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schölnast (B♭/A)</td>
<td>30.5</td>
<td>82.0</td>
<td>0.25</td>
</tr>
<tr>
<td>EUCHMI: 4710</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Doleisch clarinet (EUCHMI: 4843) shares a similarly long flare with the Schölnast clarinet at 33.0%, and the conicity is even less pronounced at 0.23. The increasing divergence in shape between the Lotz clarinet and non-Viennese instruments is evidenced in the following graph. In this graph the difference in bore diameter at the starting point of the flare – not significant on previous graphs – is also observable.
Graph 2.11. Comparison of Lotz clarinet (Geneva: IM 136) with Doleisch (EUCHMI: 4843) (stock and bell sections).

A clarinet by August Grenser (EUCHMI: 5732), also shows a marked difference in bore shape to the Lotz clarinet. The Grenser instrument remains at its original bore diameter considerably longer than the Lotz instrument and exhibits a much steeper curve once the bore begins to expand.
Graph 2.12. Comparison of stock and bell bore shapes of clarinets by A. Grenser (EUCHMI: 5732) and Lotz (Geneva: IM 136).

The difference is also observable when the percentage of the bore taken up by the expanding section and its conicity is considered. The flaring section of the bore of the Grenser clarinet comprises considerably less of the overall length of the instrument than on the Lotz clarinet, and consequently has a much greater degree of conicity. Interestingly, however, it reaches double its original bore area at a similar point to the Lotz clarinet.

Table 2.10. Percentage of overall bore (LOA) of the flaring section, conicity, and point at which double the bore area is reach of clarinets in B flat by August Grenser (EUCHMI: 5732) and Lotz (Geneva: IM 136).

<table>
<thead>
<tr>
<th></th>
<th>Percentage of LOA</th>
<th>Conicity</th>
<th>Double bore area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (B♭)</td>
<td>26.8</td>
<td>0.27</td>
<td>84.8</td>
</tr>
<tr>
<td>Geneva: IM 136</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Grenser (B♭/A)</td>
<td>19.9</td>
<td>0.39</td>
<td>84.3</td>
</tr>
<tr>
<td>EUCHMI: 5732</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Only two instruments – by Hammig (EUCHMI: 5275) and Roche (EUCHMI: 5196) – have the tone hole for E/B situated outside the flare of the bell. Only one instrument – Doleisch (EUCHMI: 4843) – has both F#/C# and E/B tone holes situated within the profile of the flare.

It can be seen therefore that Lotz was utilizing a different shape and rate of flare in the lower part of his clarinets (judged on the surviving example) to other makers in other areas, such as his near contemporary and neighbour, Franz Doleisch. Clarinets by Lotz’s pupil Kaspar Tauber show the greatest similarity to the surviving Lotz clarinet, followed by those of Griesbacher. The large bore of the Lotz clarinet is also unusual amongst contemporary non-Viennese instruments with the exception of some French clarinets, although the fashion for large bores in Vienna appears to have died out within the first two decades of the 19th century.

Comparisons – tone hole size

The size of the tone holes of the Lotz clarinet is a characteristic which is frequently remarked upon as being larger than those of contemporary clarinets, particularly in the lower part of the instrument. In comparison to later Viennese clarinets, however, this does not generally appear to be the case. Tone hole size will be expressed here in mm², being calculated as the surface area of the tone hole from the diameter measured latitudinally and longitudinally.

The thumb hole on the Lotz clarinet is indeed generally larger than that on most later Viennese instruments and other contemporary clarinets. It is larger than the same tone hole on all the Griesbacher clarinets measured, by as much as 10.1mm² on the C clarinet (FO: V-186) but only by 2.0mm² on the B flat clarinet in the same collection (FO: V-185J). When the instruments by Tauber are compared, the difference in size
is less marked. Although the tone hole on the Lotz clarinet is still larger, it is only by 4.9mm$^2$ at its greatest (EUCHMI: 4798) and 2.5mm$^2$ at its closest (EUCHMI: 5267). Only the clarinet by Hammig (EUCHMI: 5275) exceeds the size of the Lotz clarinet on this tone hole, but only by 0.4mm$^2$. Yet the instruments by Hammig also record the greatest difference so far with EUCHMI 4988 smaller than the Lotz by 10.9mm$^2$. It is in the contemporary non-Viennese instruments, however, where the greatest consistency in smaller thumb holes may be found. The Lotz clarinet tone hole is consistently significantly larger than clarinets by Doleisch, Schölnast, Bühner & Keller and Prudent. The significance of the size of this tone hole would be most noticeable on the open fingered G (concert pitch $f'$) where the intonation and clarity of the note is affected by the tone hole size. However, this tone hole on instruments by most of the makers in this study varies in size significantly within their own output and with only one surviving Lotz clarinet it is impossible to say if this tone hole is representative of his output.
Table 2.11. Tone hole areas for thumb to T7 for Viennese clarinets in this study.

All measurements are in mm$^2$.

<table>
<thead>
<tr>
<th></th>
<th>Thumb</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (B$^b$) Geneva: IM 136</td>
<td>31.7</td>
<td>24.1</td>
<td>26.8</td>
<td>25.0</td>
<td>32.7</td>
<td>33.2</td>
<td>29.6</td>
<td>37.9</td>
</tr>
<tr>
<td>Griesbacher (B$^b$/A) Prague, NM: 1673E</td>
<td>20.0</td>
<td>22.9</td>
<td>20.4</td>
<td>22.5</td>
<td>30.7</td>
<td>24.6</td>
<td>24.6</td>
<td>39.4</td>
</tr>
<tr>
<td>Griesbacher (B$^b$) FO: V-185J</td>
<td>29.7</td>
<td>29.7</td>
<td>25.5</td>
<td>25.1</td>
<td>37.9</td>
<td>28.3</td>
<td>26.4</td>
<td>44.7</td>
</tr>
<tr>
<td>Griesbacher (C) FO: V-186J</td>
<td>21.6</td>
<td>22.9</td>
<td>22.5</td>
<td>21.2</td>
<td>31.2</td>
<td>27.3</td>
<td>24.2</td>
<td>46.3</td>
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<tr>
<td>Griesbacher (A) Leipzig: 1484</td>
<td>22.5</td>
<td>23.3</td>
<td>22.5</td>
<td>22.5</td>
<td>-</td>
<td>29.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tauber (B$^b$) EUCHMI: 4798</td>
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<td>26.4</td>
<td>26.9</td>
<td>25.5</td>
<td>36.3</td>
<td>37.4</td>
<td>35.8</td>
<td>43.6</td>
</tr>
<tr>
<td>Tauber (A) EUCHMI: 4779</td>
<td>27.3</td>
<td>24.6</td>
<td>25.1</td>
<td>26.0</td>
<td>34.7</td>
<td>35.2</td>
<td>34.2</td>
<td>40.0</td>
</tr>
<tr>
<td>Tauber (B$^b$) EUCHMI: 5267</td>
<td>29.2</td>
<td>29.2</td>
<td>29.7</td>
<td>28.3</td>
<td>40.1</td>
<td>34.2</td>
<td>30.2</td>
<td>47.8</td>
</tr>
<tr>
<td>Hammig (B$^b$) EUCHMI: 4988</td>
<td>20.8</td>
<td>24.6</td>
<td>23.3</td>
<td>23.3</td>
<td>31.1</td>
<td>29.7</td>
<td>30.2</td>
<td>38.3</td>
</tr>
<tr>
<td>Hammig (B$^b$) EUCHMI: 5275</td>
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<td>27.3</td>
<td>30.6</td>
<td>29.1</td>
<td>33.7</td>
<td>34.2</td>
<td>35.2</td>
<td>45.8</td>
</tr>
<tr>
<td>Hammig Schlader Collection</td>
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<td>26.4</td>
<td>28.7</td>
<td>26.4</td>
<td>36.8</td>
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<td>32.2</td>
<td>45.8</td>
</tr>
<tr>
<td>Merklein (B$^b$/A) KHM: SAM 326</td>
<td>28.3</td>
<td>28.3</td>
<td>28.3</td>
<td>28.3</td>
<td>38.5</td>
<td>28.3</td>
<td>38.5</td>
<td>44.2</td>
</tr>
<tr>
<td>Merklein (B$^b$/A) EUCHMI: 4876</td>
<td>27.3</td>
<td>23.7</td>
<td>26.9</td>
<td>28.3</td>
<td>34.2</td>
<td>26.9</td>
<td>27.3</td>
<td>34.2</td>
</tr>
</tbody>
</table>

For most of the remaining tone holes of the instrument the Lotz clarinet is very similar to most of the other instruments measured, with relatively small margins separating all the instruments. The most significant differences begin to occur on the lower three tone holes of the instruments, those for A flat/E flat, F#/C# and E/B. The A flat/E flat tone hole on the Lotz clarinet measures 105.2mm$^2$. Of the Viennese clarinets studied, only the clarinet in A by Tauber (EUCHMI: 4779) exceeds this, and then only by 2.0mm$^2$, and the clarinet by Merklein (EUCHMI: 4876) with a
greater variation at $15.5\text{mm}^2$. The Lotz clarinet is at least $10.2\text{mm}^2$ larger than the largest measurement of the Griesbacher instruments (FO: V-185J) and $17.9\text{mm}^2$ larger than the largest Hammig instrument (EUCHMI: 4988).

Table 2.12. Tone hole areas for $A$ flat/$E$ flat, $F\#/$C$\#$ and $E$/B for the Viennese clarinets in this study. All measurements are in $\text{mm}^2$.

<table>
<thead>
<tr>
<th></th>
<th>$A^\flat/E^\flat$</th>
<th>$F#/$C$#$</th>
<th>$E$/B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz ($B^b$) Geneva: IM 136</td>
<td>105.2</td>
<td>47.7</td>
<td>83.8</td>
</tr>
<tr>
<td>Griesbacher ($B^b/A$) Prague, NM: 1673E</td>
<td>69.4</td>
<td>26.3</td>
<td>67.8</td>
</tr>
<tr>
<td>Griesbacher ($B^b$) FO: V-185J</td>
<td>95.0</td>
<td>35.1</td>
<td>121.4</td>
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<tr>
<td>Griesbacher (C) FO: V-186J</td>
<td>92.9</td>
<td>-</td>
<td>87.3</td>
</tr>
<tr>
<td>Griesbacher (A) Leipzig: 1484</td>
<td>-</td>
<td>-</td>
<td>63.6</td>
</tr>
<tr>
<td>Tauber ($B^b$) EUCHMI: 4789</td>
<td>99.3</td>
<td>37.3</td>
<td>141.3</td>
</tr>
<tr>
<td>Tauber (A) EUCHMI: 4779</td>
<td>107.2</td>
<td>47.7</td>
<td>110.0</td>
</tr>
<tr>
<td>Tauber ($B^b$) EUCHMI: 5267</td>
<td>100.2</td>
<td>43.6</td>
<td>86.3</td>
</tr>
<tr>
<td>Hammig ($B^b$) EUCHMI: 4988</td>
<td>87.3</td>
<td>37.3</td>
<td>75.3</td>
</tr>
<tr>
<td>Hammig ($B^b$) EUCHMI: 5275</td>
<td>70.1</td>
<td>24.2</td>
<td>68.6</td>
</tr>
<tr>
<td>Hammig Schlader Collection</td>
<td>84.9</td>
<td>31.3</td>
<td>75.1</td>
</tr>
<tr>
<td>Merklein ($B^b/A$) KHM: SAM 326</td>
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<td>-</td>
<td>-</td>
</tr>
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<td>Merklein ($B^b/A$) EUCHMI: 4876</td>
<td>120.7</td>
<td>37.9</td>
<td>80.0</td>
</tr>
</tbody>
</table>

Of the non-Viennese instruments, the August Grenser clarinet has the smallest tone hole for $A$ flat/$E$ flat, being smaller than the Lotz by $36.6\text{mm}^2$. Indeed, the Grenser instrument measures the smallest on all the lowest three tone holes of the non-Viennese instruments, significantly smaller even than the next smallest – the clarinet
by Doleisch. Interestingly, the A flat/E flat tone hole on a number of the French instruments exceeds the measurement on the Lotz clarinet.

Table 2.13. Tone-hole areas of non-Viennese clarinets in this study compared to the Lotz clarinet for Thumb to T7. All tone hole sizes are in mm².

<table>
<thead>
<tr>
<th>Model</th>
<th>Thumb</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (B₉) Geneva: IM 136</td>
<td>31.7</td>
<td>24.1</td>
<td>26.8</td>
<td>25.0</td>
<td>32.7</td>
<td>33.2</td>
<td>29.6</td>
<td>37.9</td>
</tr>
<tr>
<td>Doleisch (B₉) EUCHMI: 4843</td>
<td>23.3</td>
<td>25.0</td>
<td>25.5</td>
<td>24.2</td>
<td>31.1</td>
<td>26.4</td>
<td>25.9</td>
<td>35.7</td>
</tr>
<tr>
<td>A. Grenser (B₉/A) EUCHMI: 5732</td>
<td>26.0</td>
<td>22.9</td>
<td>25.1</td>
<td>24.2</td>
<td>30.7</td>
<td>30.7</td>
<td>27.3</td>
<td>33.2</td>
</tr>
<tr>
<td>Schölnast (B₉) EUCHMI: 4710</td>
<td>25.9</td>
<td>28.3</td>
<td>28.3</td>
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<td>33.7</td>
<td>31.1</td>
<td>39.4</td>
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<tr>
<td>Bühner &amp; Keller (B₉/A) EUCHMI: 4856</td>
<td>22.5</td>
<td>22.5</td>
<td>25.0</td>
<td>27.3</td>
<td>30.2</td>
<td>27.8</td>
<td>26.4</td>
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<td>22.4</td>
<td>21.6</td>
<td>25.1</td>
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<td>27.8</td>
<td>27.8</td>
<td>40.4</td>
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<tr>
<td>Bühner &amp; Keller (C) EUCHMI: 4857</td>
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<td>25.5</td>
<td>27.3</td>
<td>23.3</td>
<td>37.9</td>
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<td>Roche (B₉) EUCHMI: 5196</td>
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<td>26.9</td>
<td>27.3</td>
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<td>27.3</td>
<td>30.2</td>
<td>39.0</td>
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<td>Prudent Thierriot (B₉) EUCHMI: 5115</td>
<td>22.9</td>
<td>23.3</td>
<td>22.5</td>
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<td>27.3</td>
<td>28.3</td>
<td>26.8</td>
<td>29.7</td>
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<td>Amlingue (B₉) EUCHMI: 5116</td>
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<td>28.7</td>
<td>27.8</td>
<td>26.9</td>
<td>38.4</td>
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<td>Amlingue (B₉) EUCHMI: 4986</td>
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<td>31.7</td>
<td>29.7</td>
<td>27.3</td>
<td>37.9</td>
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<tr>
<td>Amlingue (A) Leipzig: 1475</td>
<td>27.3</td>
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<td>23.7</td>
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<td>27.8</td>
<td>28.3</td>
<td>27.3</td>
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<td>Porthaux (B₉/A) EUCHMI: 5195</td>
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<td>25.0</td>
<td>26.0</td>
<td>25.1</td>
<td>28.7</td>
<td>26.4</td>
<td>26.9</td>
<td>39.6</td>
</tr>
<tr>
<td>Theodore (B₉/A) EUCHMI: 4899</td>
<td>25.5</td>
<td>26.8</td>
<td>25.5</td>
<td>25.9</td>
<td>30.1</td>
<td>28.7</td>
<td>23.7</td>
<td>27.8</td>
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Table 2.14. Tone hole areas for A flat/E flat, F#/C# and E/B keys of the non-Viennese clarinets in this study. All tone hole sizes are in mm².

<table>
<thead>
<tr>
<th>Model</th>
<th>A♭/E♭</th>
<th>F#/C#</th>
<th>E/B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (B♭)</td>
<td>105.2</td>
<td>47.7</td>
<td>83.8</td>
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<tr>
<td>Geneva: IM 136</td>
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<tr>
<td>Doleisch (B♭)</td>
<td>82.3</td>
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<tr>
<td>A. Grenser (B♭)</td>
<td>68.6</td>
<td>28.7</td>
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<tr>
<td>Schölnast (B♭)</td>
<td>100.7</td>
<td>33.2</td>
<td>70.1</td>
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<td></td>
</tr>
<tr>
<td>Bühner &amp; Keller (B♭/A)</td>
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<td>Bühner &amp; Keller (B♭)</td>
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<td>48.4</td>
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<td>Bühner &amp; Keller (C)</td>
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<tr>
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<td>54.1</td>
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<td>65.0</td>
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<tr>
<td>EUCHMI: 4899</td>
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</tbody>
</table>

Key number and design

Although the number of keys on the Lotz clarinet is conventional for instruments of the time, the method of mounting them appears to have first been applied to the clarinet by Lotz and subsequently adopted by other makers in Vienna, becoming an identifying characteristic of Viennese instruments for some time. Instead of being mounted in integral wooden blocks, the two long keys, those for F#/C# and E/B, are, after the initial pivot points in the swelling of the stock, mounted in brass saddles.
On the F#/C# key this performs the function of a guide to ensure the key opens and closes without excessive sideways movement.

Plate 2.15. Detail of IM 136, showing (left to right) the brass saddles for the F#/C# and E/B keys.

This feature is not found on the two clarinettes d’amour (Vienna: GdM 130 and 131) or the three-keyed clarinet (GNM: MIR 425) by Rockobaur, indicating that this was not common practice in clarinet making in Vienna prior to Lotz’s arrival. Although the Scholl clarinettes d’amour (Vienna: GdM 132 and 133) do not have the guide for the F#/C# key, they do employ the same type of saddle as appears on the Lotz clarinet. Several of the later Viennese instruments, such as the twelve-key clarinet by Tauber (EUCHMI: 5267), the five-key clarinet by Hammig (EUCHMI: 5275) and all the clarinets by Griesbacher revert to using wooden blocks. This suggests a shift away from the trend of using brass saddles sometime in the first two decades of the 19th century. It should be noted that some of the Griesbacher clarinetns have several keys mounted in brass saddles, but the long keys for F#/C# and E/B are mounted in wooden blocks on all the Griesbacher instruments, suggesting that those in saddles
may be later additions. This is particularly noticeable on the two instruments in Frankfurt (Oder) (FO: V-184J and V-186J), where the wooden blocks and rings for the original A, speaker and side trill keys have been cut away for the addition of a side G# and side trill key respectively (the C clarinet does not have the second side trill key). That these two instruments appear to have almost identical additions mounted in the same way, including a cut through the section between T2 and T3 (possibly to shorten the sounding length of the instrument), suggests that the additions were made by the same person at the same time, and that these instruments form part of a set or pair.

**Plate 2.16. Clarinets in C (V-186J) and B flat (V-185J) by Raymund Griesbacher.**

The method of key mounting on the clarinets by Tauber in this study is indicative of a change in fashion for key mountings within the first two decades of the 19th century. The earlier two six-key instruments by this maker (EUCHMI: 4798 and 4779) exclusively use brass saddles. Whether or not the C#/G# keys on both these instruments are original is open to some debate. The springs of all the other keys on the instruments are attached to the body of the instrument, whereas the spring for the
C#/G# keys are attached to the keys, suggesting a later addition. However, this alone does not establish that the keys are not original, as their curved shape mounted within a brass saddle would have been best served by a spring mounted in this way. Furthermore, both keys are exactly the same shape and mounted in identical brass saddles. This suggests, as with the clarinets by Griesbacher in Frankfurt an der Oder, that both keys were at least added by the same person at a similar time, perhaps even Tauber himself. The later twelve-key instrument, conversely, has all keys mounted in wooden blocks (which therefore must be original), thus indicating the change in key mounting fashion.

None of the French instruments examined, nor those by Doleisch in Prague (EUCHMI: 4843) nor Schölnast in Pressburg (EUCHMI: 4710) mount their keys in brass saddles. Similarly this method of mounting keys is not found on contemporary German clarinets, such as those of August Grenser.

Makers who chose to employ wooden blocks on their clarinets were not unfamiliar with the technique of mounting keys in brass saddles. Extant basset horns by both Doleisch (NMM: 3541, Brussels, MIM: 938, Prague, NM: 466E and 467E and RCM: 90) and Jakob Baur (GNM: MI 134) also make use of this technique. For a maker such as Doleisch, with a long career spanning rapid development of the instruments he made, this technique would have been essential, as it was the only way to add keys to an existing instrument. Doleisch employed brass saddles almost exclusively on the mechanisms for the basset keys on his basset horns, mounted on the back of the buch. It may be that Doleisch found this an easier method to mount keys on a section which was not turned, as all wooden blocks would first have to be turned on the lathe then shaped by hand.
Mounting the keys in brass saddles rather than wooden blocks has no significant effect on the performance of the keys themselves (unless to reduce the incidence of sluggish action and sticking keys as a result of wood swelling around the key mount in response to atmospheric changes) and was probably a device employed by Lotz to simplify the appearance and processes of making the instrument. They are also difficult to break but easily replaced if that should occur, whereas wooden blocks are easily broken off under moderate pressure and virtually impossible to replace. The fact that the technique was already in use on bassoons and basset horns suggests that Lotz applied the idea to the clarinet from these instruments. This would further simplify working practices within the workshop, giving a uniformity of technique for several different instruments. With regards to the basset horn, the processes of hand shaping and bending involved in making the earlier sickle shaped instruments may have inspired the use of saddles for mounting the keys, thus simplifying an already complex procedure.

Comparisons – decoration

As was discussed above in the examination of the baroque clarinets, a single incised turned line on the wooden rings mounting the A and speaker keys is indicative (although not exclusively so) of Viennese origins. This form of decoration occurs on all the Viennese clarinets considered in this study. It was not found on any German instruments. It is, however, a feature of the clarinet by Schölnast (EUCHMI: 4710) and three of the French clarinets – Roche (EUCHMI: 5196), Theodore (EUCHMI: 4899) and Amlingue (EUCHMI: 4986). With the exception of the instrument by Theodore, the instruments are all of a later date than the clarinet by Lotz.
Doleisch decorated this part of his instruments by leaving the top and bottom edges of the ring slightly proud of the rest of the profile and rounding these off. This is a feature which can usually be linked directly to Doleisch, and is seen on basset horns by this maker discussed in Chapter 3. Sebesta identifies this as one of the characteristics which Doleisch’s instruments share with those of Strobach, and uses this in support of the hypothesis that Strobach learnt to make instruments with Doleisch.\footnote{Sebesta “Strobach,” 63.} This possibility is more fully examined in Chapter 3.

Plate 2.17. Detail of ring decoration found on clarinets by Doleisch (EUCHMI: 4843).

The Lotz clarinet, apart from the horn mount on the mouthpiece, has ivory ferrules, including at the end of the bell. Few instruments in this study employed ivory mounts, most making use of horn. In 1767 Sprengel priced ivory at 1 Reichsthaler per pound or more,\footnote{Sprengel, Handwerke, 110.} whereas horn could be obtained by the hundredweight for 16 Groschen (1 Groschen = 1/24 Reichsthaler), slightly more than half the price of ivory. The end ring of the bell would have required an exceptionally large (and consequently expensive) piece of ivory, with a diameter in excess of 73mm. As this is the only surviving example of a clarinet by Lotz it is not possible to say with
absolute conviction whether he habitually used ivory on clarinets. However, as all of Lotz’s extant basset horns use ivory to a significant extent, particularly on the knee section, it is a fair assumption that this was a material readily available in his workshop. By contrast, clarinets by Doleisch make use of horn ferrules, and his basset horns do not have an ivory knee, instead employing a wooden integral angled section at the top of the right hand section, with a horn ferrule (see Chapter 3 for further details).

The use of this expensive material may account in part for the fact that Lotz’s instruments were generally more expensive than those of his contemporaries.\(^{50}\) Considering the bill from the Vienna Hoftheater above, giving the cost of two clarinets at 86fl 40xr, and assuming that both instruments were identical and incurred the same price, this prices Lotz’s clarinets, together with \textit{corps-de-rechange}, at around 43fl 20xr. With cases and three \textit{corps-de-rechange} (or \textit{Mutationen}), a C clarinet from Lotz cost around 48fl, as evidenced in another \textit{Hoftheater} bill from April 1785 – March 1786.\(^ {51}\) In a \textit{Wiener Zeitung} advertisement of 1789, Friedrich Lempp offered clarinets in B flat with \textit{corps-de-rechange} in A for 18fl - 27fl,\(^ {52}\) nearly half the price of the same instruments from Lotz. These instruments had horn ferrules rather than ivory.\(^ {53}\) By 1807 the cost of clarinets had risen dramatically, with Griesbacher charging 110fl for a B flat clarinet with \textit{Mutationen}, ivory ferrules

\(^{50}\) Maunder, “Wind-instrument Makers,” 172.
\(^{52}\) \textit{Wiener Zeitung}, February 25\(^ {\text{th}}\), (1789), 464. The price quoted is 4, 5 or 6 ducats, with one ducat equivalent to four-and-a-half gulden (H.C. Robbins Landon, \textit{1791: Mozart’s Last Year}, (Glasgow: William Collins Sons & Co., Ltd., 1989), 6.)
\(^{53}\) \textit{Wiener Zeitung}, February 25\(^ {\text{th}}\), (1789), 464.
and two mouthpieces, while a single C clarinet cost nearly as much in 1807 as an instrument with *corps-de-rechange* in 1785/86, at 40fl.\(^{54}\)

Furthermore, some of the debts for instruments listed in Lotz’s will are substantial, such as that incurred by the Princess Lichnowsky (3200fl in total, around £26,894 in today’s currency\(^{55}\)) or Prince von Sultikor of Russia (1794fl, £15,072 today). Such substantial sums are likely to have been for large numbers of instruments, perhaps a set of a number of different types of instruments for the use of a *harmonie* group. Unfortunately no other bills for prices of other instruments by Lotz have survived. To place these prices in context, at this time a small house could be bought for 200fl (£1,680), while in 1830 the annual wage for a teacher was 100fl (£840).\(^{56}\) Viewed in this context, even the relatively cheaper instruments by Lempp would have been a considerable investment, being nearly a third of the annual wage for a teacher.

The use of ivory, which was not found to be common amongst Viennese clarinets of this date, is seen almost exclusively on French clarinets through the 18\(^{th}\) and 19\(^{th}\) centuries. This may in part be accounted for by France’s close trading ties and colonial interests in Africa, allowing a more ready supply of ivory than elsewhere.

**Conclusions**

The evidence presented in this chapter has shown that Lotz was pursuing different designs to his colleagues in other parts of Europe. This takes the form of a larger

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\(^{54}\) Hellyer, “Some Documents,” 54.

\(^{55}\) Using The Marteau Early 18\(^{th}\) Century Currency Converter (http://www.pierremarteau.com/currency/converter.html) and the currency converter of the National Archive (http://www.nationalarchives.gov.uk/currency/default.asp#mid).

\(^{56}\) Katharina Kirr, “Objekt des Monats,” Rosgarten Museum, unpublished lecture given at the Rosgarten Museum Konstanz, date unknown. I am grateful to Frau Kirr for providing me with the material from her lecture concerning the Lotz basset horn in the Rosgarten Museum.
bore than other contemporary makers such as Doleisch in Prague and August Grenser in Dresden, as well as larger tone holes in the lower part of the instrument, coinciding with adjustments in the flared portion of the bore to alter intonation. By employing metal saddles to mount keys, he demonstrated an inclination to not only simplify the manufacturing process but also to make a more durable and practical instrument, less prone to breakage and alteration. His success is indicated not only by his position of Court Instrument Maker, but also by references to purchases made by leading Viennese institutions and the apparent supremacy of his clarinets demonstrated by the sole surviving example. The lack of examples from other contemporary makers suggests that they did not pursue the innovation and manufacture of clarinets with the same intensity as Lotz.
Chapter 3

Basset horns and basset clarinets

Introduction

Lotz is represented by ten basset horns – the largest extant number of any of the instruments he is known to have made. This includes the only surviving numbered set of three basset horns by any maker, uncovered in the 1990s in Krasna Horka Castle in Hungary.

- Basset horn in F, Narodní Muzeum, Prague, 1365E
- Basset horn in F, Narodní Muzeum, Prague, 2094E
- Basset horn in F, Musikinstrumenten-Museum, Berlin, 2911
- Basset horn in F, Germanisches Nationalmuseum, Nuremberg, MI 135
- Basset horn in F, Krasna Horka Castle, Hungary
- Basset horn in F, Krasna Horka Castle, Hungary
- Basset horn in F (fr.), Museum Viadrina, Frankfurt (Oder), V-433J
- Basset horn in F (fr.), Museum Viadrina, Frankfurt (Oder), R53366
- Basset horn in F, Rosgarten Museum, Konstanz, J19

It will be remembered from Chapter 1 that the first literary references to Lotz as a maker are primarily in reference to the basset horn and he is widely credited with improvements to that instrument. This discussion focuses on a comparative study of the extant basset horns with those of other significant contemporary makers of the instrument. The aim is to examine the nature of Lotz’s innovations, which are not defined by contemporary reports and which remain largely unspecified in the literature. It is particularly interested with a comparison of Lotz’s instruments with those by Franz Doleisch, who is similarly well represented by extant instruments and may be regarded as perhaps the other most prolific contemporary maker of basset horns. For this reason Strobach is also of interest in this discussion due to the
connections drawn by Sebesta between Doleisch and Strobach (see Chapter 1), and particular attention will be paid to the possible influences, and their extent, which Lotz’s innovations on basset horn design had on these two makers.

**Body forms and keys**

As can be seen from the passages quoted in Chapter 1, from Cramer (1783) and Gerber (1790), the improvements which Lotz applied to the basset horn are not detailed. The entry by Cramer is particularly misleading and does nothing to clarify exactly what constituted the improvements with which he credits Lotz. After describing Lotz as having “…Verbessert und zu der jezigen mehreren Vollenkommenheit gebracht hat…”¹ [improved [the basset horn] and brought [it] to the greatest perfection], Cramer goes on to describe the instrument:

…die Form desselben ist ein halben Mond, am Ausgang befindet sich ein viereckter Kasten, darinnen 3 Canäle befestigt find. Um Ende des letzten Passages steckt ein von Meßing zusammengebrauchtes Schalstucht. Dieses Instrument ist von Holz mit Schwarzen Leder überzogen, hat 7 Löcher und 7 Klappen, wird wie ein Clarinet geblasen, und hat auch ein solches Mundstück. Der Umfang ist nach dem Baßschlüssel bis in das tiefste g, in einem starken Ton, und die Höhe bis is das obere d, wenn die Stimmung aus g ist.²

[…the form of the instrument is a half moon, at the end of which can be found a four-cornered box, within which 3 channels may be found. From the end of the last channel protrudes a brass bell. This instrument is made of wood and covered with black leather, has 7 tone holes and 7 keys, is played like a clarinet, and has the same kind of mouthpiece. The range is from the lowest g in the bass clef, with a strong tone, and in the upper range is to the top d, if the tuning is in g.]

Cramer’s wording implies that the half-moon shaped leather covered instrument pitched in G was the instrument of Lotz’s design. None of Lotz’s extant instruments, however, are made in this form, being universally angled and pitched in F. Whether or not Lotz ever made instruments in the curved form or in G is open to speculation.
He was undoubtedly familiar with the techniques for making curved instruments, as all his extant cor anglais are in this form. As a pioneer of the wider angled form of basset horn, it is likely that he would have learned initially to make instruments in the curved or 90° angled forms and must have continued to do so until the early 1780s. In view of the origins of the 90° angled form discussed below, the theory put forward as to Lotz’s relationship with Anton Lotz of Pressburg in Chapter 1 is given added significance.

Although the earliest basset horns had been curved, and the design had persisted well in to the second half of the 18th century, angled basset horns were not unknown before 1782 – the year in which Cramer states Lotz undertook his improvements. According to Shackleton, the earliest departures from the curved to the angled form were made by the makers Georg Glezl in Bavaria (exact years of activity unknown, thought to be late 18th century), I.G. Dimpfl in Stralfeld (thought to be late 18th century) and F. Königsperger in Roding (c1774 – p1812). The instruments by these makers (two by Glezl: Bayerisches Nationalmuseum Munich: 111, Berlin: 295; one by Dimpfl: Linz: Mu 27; one by F. Königsperger: Berlin: 578) have two straight sections joined by a knee at an angle of 90°. There are a further two anonymous angled instruments, which appear to be a pair, in the Narodní Muzeum Prague (Prague, NM: 178, 179). The knee section on these instruments is in the form of a carved human face, and together with their intricately turned barrels and wooden inlay on the buch are amongst the more elaborately decorated examples. These instruments generally share in common with the earlier sickle shaped basset horns large, circular flaring brass bells.

1 Cramer, Magazin der Musik, 654.
2 Cramer, Magazin der Musik, 654.
3 Waterhouse, New Langwill, 136; 89; 211. No other member of the Königsperger family is known to have made basset horns.
With the exception of the Glezl instrument (which has eleven keys, some of which are duplicates and several of which may be later additions), the earliest basset horns angled at 90° are seven-keyed instruments of which one is the basset key for C, with the E/B key mounted on the dorsal side, thus placing them roughly contemporaneously with the four-key clarinet. As well as the shape and size of the bell, these instruments also share with earlier sickle-shaped basset horns a reversed configuration for the keys for F/C (which, on the clarinet, is serviced by a hole, but a key is required on the basset horn due to its size) and A flat/E flat, where the F/C key is placed centrally and the A flat/E flat is placed to the right of it (from the players’ perspective). Some of the earliest instruments have duplicate A flat/E flat keys placed either side of the central F/C key to facilitate playing with either hand uppermost.

None of the above instruments are dated and without precise knowledge of the working lives of their makers accurate dating of the instruments is impossible. They are, however, generally considered to be the earliest surviving representations of the angled form of basset horn. However Dlabacž, writing in 1815 in his Allgemeines-Historisches Künstlerlexicon für Böhmen, claimed the invention of this form belonged to Simon Truska, a maker who will be explored in more detail in Chapter 4:

He [Truska] also made various wind instruments, including basset horns in bent and angled form. This latter was his own invention, and was so successful that he was asked to make similar basset horns for Count Klebelsberg of Liboritz, for which work he was paid 40 ducats.4

There are no surviving basset horns from Truska so it is therefore impossible to

establish this claim through physical examination of instruments. The remainder of Dlabacž’s biographical information regarding Truska, however, appears to be accurate and his remarks must therefore be given some credence. This, taken together with the two anonymous instruments in the Narodní Muzeum Prague (178 and 179), thought to be Czech,⁵ may indicate a Bohemian origin for angled basset horns. Certainly the Bohemian lands remained a stronghold for the basset horn throughout the 18th century.

Lotz’s basset horns are the earliest surviving examples of instruments made at a wider angle of 120°. It therefore seems likely that this was a modification of his own invention, and may be counted amongst the improvements attributed to him by Cramer and Gerber. Lotz’s basset horns consistently measure 120° at the knee, with the only exception the second instrument in the Krasna Horka set, which measures 5° less at 115°. The advantage of a wider angle lay chiefly in the ease of holding and playing the instrument.

Plate 3.1. Basset horn in F by Lotz (GNM: MI 135).

Earlier Viennese instruments

As was the case with clarinets, there are few early Viennese basset horns with which to compare Lotz’s instruments. There is only one instrument which is conclusively Viennese in origin and which may predate instruments by Lotz. This is a seven-key sickle shaped instrument by Jakob Baur (GNM: MI 134).
Plate 3.2. Basset horn in F, Jakob Baur, Germanisches Nationalmuseum Nürnberg (GNM: MI 134).

The museum dates the instrument to the late 1770s. As was posited with clarinets, the lack of earlier examples of Viennese basset horns may suggest a lack of interest in the instrument prior to Lotz’s arrival. The fact that this example is of the more outmoded sickle-shape gives further credence to this. The popularity of Lotz’s basset horns may have resulted largely from their forward-looking design in comparison to the more old fashioned varieties offered by makers such as Baur already being produced in Vienna.

Apart from this single surviving example, there is little evidence to suggest an interest basset horn making in Vienna prior to Lotz’s arrival. Only Friedrich Lempp
advertises basset horns, first in 1776 when he lists “englische= Basset=horn” amongst the instruments he makes, but did not list them in his petition for protection to the Government of Lower Austria in 1768 and does not mention them again in his advertisements for instruments until 1789. Lempp’s use of the term “englische” is curious, and to this author’s knowledge is the only association of the term with the basset horn in Vienna. Steblin posits that the term may have arisen from the similarity in body shape of the cor anglais and the curved basset horn. If indeed this were the case this would indicate that Lempp was, at this point in time, making sickle-shaped basset horns and not angled instruments. There is one surviving basset horn from the Lempp family, which is discussed in detail separately due to its unusual nature.

One of the primary advantages of the angled form of instrument over the curved form was increased ease of manufacture. The curved form, as evidenced by the X-rays of the basset horn by Baur (GNM: MI 134) and an anonymous basset horn in the same collection (GNM: MIR 465, described as possibly Viennese in the museum catalogue, stamped ‘AS’), was created by making small cuts along the underside of previously bored straight sections. On GNM: MIR 465 there are twenty-one cuts made around approximately 75% of the diameter, whereas on the Baur instrument (GNM: MI 134) the cuts are considerably larger at 90%. The Baur instrument is less aggressively curved than the ‘AS’ example and the cuts, although difficult to distinguish on the X-ray, appear to be further apart on the Baur instrument. The cuts on the Baur instrument may only clearly be seen on the X-ray on the lower section of

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8 Bär, Verzeichnis Vol. 6, 85.
7 Wienerisches Diarium, no. 92, 16th November (1776), Anhang “Nachricht”; Wiener Zeitung, 25th February (1789), 464.
9 Bär, Verzeichnis Vol. 6, 77.
10 Bär, Verzeichnis Vol. 6, 77; 85.
the instrument, where three may be observed. Conversely, on the equivalent area on GNM: MIR 465, seven cuts have been made.

Once the instrument had been cut in this way, it was bent to shape, glued, and usually secured with a metal or wooden brace along the inside curve. Finally, in order to help hold the shape in place and seal the cuts, the body was covered with leather. Often the body of the instrument was not left round in cross-section, but could be six sided, as in the ‘AS’ example, or octagonal.\textsuperscript{11} In the X-ray images of GNM: MIR 465 and the basset horn by Jakob Baur (GNM: MI 134) there appears to be no evidence of pins or a metal brace along the dorsal side of the instrument. It may be that these instruments were secured with a wooden brace or with glue alone. The anonymous instrument (GNM: MIR 465) has the additional feature of what appears to be a tenon and socket joint just below the touchpiece for the A key, which is held in place by a metal brace on the side of the instrument. The body therefore, although apparently one piece when viewed externally, has been constructed from two separate pieces.

Plate 3.3. X-ray image of GNM: MIR 465, showing tenon and socket joint secured with a metal brace in the upper half of the instrument.

The angled form, by contrast, was considerably more straightforward to make. Instead of the involved process of cutting out the slots, bending, securing and covering the instrument with leather, the maker was able to turn two straight sections on the lathe, with the only hand work being carried out in partly shaping the knee and, as with all designs, the buch. The angled instruments were also easier to hold for the player, as the instrument could comfortably be held to the front or slightly to the side with the bell resting on the players’ thigh, suspended by a strap around the neck or from the button of their clothing. Brass loops attached to the bodies of instruments surviving from the latter part of the 18th century attest to this, confirmed by the description in Backofen’s *Anweisung zur Klarinette nebst einer kurzen Abhandlung über das Basset-Horn* of 1803.

Instruments of the curved form, however, do not appear to have had loops for a strap and may have been held to the side and rear of the player in a similar manner to the horn. Alternatively they may have had a length of rope or string attached to the top
and bottom extremities of the instrument body (e.g. around the barrel and at the top of the chimney) which was then slung over the shoulder, thus supporting the weight of the instrument. A length of string which may have been put to such a purpose is associated with a cor anglais by Baur in the Germanisches Nationalmuseum (GNM: MI 110, see Chapter 6).

A further advantage of the angled form lay in the fact that makers could now select boxwood for the body of the instrument rather than maple, which, being a soft textured wood that was easily worked, lent itself to the construction of the curved form. Boxwood, however, was much harder to work, allowing finer turning, as well as enabling a smooth finish crucial to a good quality bore.

A final advantage lay in the application of the long keys, particularly those for the basset notes. On curved instruments these were generally made to follow the line of the body and thus had to be slightly curved, or else were made straight and standing out from the body of the instrument. On an instrument with a straight body, however, the keys could themselves be straight, thus eliminating another step in the manufacturing process and also making the keys less prone to being bent or broken. Indeed, the general advantages of ease of manufacture may have given greater impetus to the change to an angled design than some of the other advantages discussed here.

As the Baur basset horn in Nuremberg is the only surviving example from this maker, it is impossible to say whether or not he persisted in manufacturing sickle-shaped instruments at the same time that Lotz’s angled instruments were also available. No basset horns of any kind were listed amongst Baur’s effects after his death.  

Shackleton thought it unlikely that Baur would continue to offer an

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12 Backofen, Anweisung zur Klarinette, 37.
antiquated design such as the sickle-shaped basset horn when one of his main competitors offered a far more modern equivalent, and suggests that the Baur basset horn in Nuremberg is representative of the stage of development of Viennese basset horns in around 1780, prior to Lotz’s innovations in 1782 and arrival in the city in 1785. Considering Baur was only fifty-four at the time of his death, it is likely that he continued to make instruments up to 1797, strengthening the theory that he would have begun to produce a more modern type of instrument.

However, the question remains whether or not Baur, around three years Lotz’s senior, would have been willing to adapt to making a new style of instrument. Baur’s active dates do not in themselves argue against a continuation of the curved basset horn tradition, as several curved instruments are extant by makers who were active well into the 19th century. These include instruments by Kirst of Potsdam (active 1772 – 1804) in the Museum für Hamburgische Geschichte (1912.1561), by Porthaux of Paris (active from 1782 to after 1824) in the Cité de la Musique Paris (E.603), and by Bühner & Keller (active after 1802 to around 1844), also in the Cité de la Musique Paris (E.189). The latter two instruments are the only known examples of basset horns by these makers. The instrument by Kirst, however, is the only curved example amongst nine other angled examples, demonstrating makers were capable and willing to change from one form to another.

It is this author’s suggestion, however, that Baur persisted with the curved form even after Lotz’s innovations and arrival in Vienna. This is supported firstly by the lack of further surviving instruments by Baur compared to the comparatively larger number by Lotz, suggesting that Lotz’s instruments were far more in demand due to their more modern design. The larger number of fifes, flutes, flageolets, oboes and

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cors anglais surviving by Baur compared to the same by Lotz (from whom only four cor anglais are extant) further supports the supposition put forward in Chapter 1 that each maker fulfilled a different demand within the city. Baur’s surviving output, as well as evidence from contemporary documents discussed in Chapter 1, shows a strong emphasis on regimental instruments such as those listed above, whereas Lotz’s output appeared to centre mainly on clarinets, basset horns and bassoons.

It is necessary here to consider the Viennese ascription of the instrument in Nuremberg stamped ‘AS’ (GNM: MIR 465). Shackleton suggested as a possible maker Antonius Schindler, who is known to have supplied oboe reeds to Esterháza in 1777-8.\(^\text{15}\) The instrument is made in the same manner which Shackleton identifies as being unique to Bavarian and Austrian curved basset horns – with cuts along the inside of the bore as discussed above.\(^\text{16}\) Unusual among basset horns, the instrument has a turned wooden bell rather than a brass one.


It is a composite instrument, probably compiled from a pair or set as the top section of the instrument is stamped with the number ‘2’ while the lower half is stamped with the number ‘1’.
Plate 3.5. Stamps from GNM: MIR 465, showing clockwise from top: the stamp on the upper section, below the barrel; the stamp on the dorsal side of the *buch*; the change of numbering from the top section to the lower section.

On the underside of the *buch*, at the opposite end to the socket for the bell, the instrument is stamped with the letter ‘A’ (or possibly ‘V’) and a sun with a face. To this author’s knowledge, no other Viennese instrument is marked in such a way.

One further attribute which may argue against a Viennese origin is apparent in the X-rays of the instrument. This shows that the final bore in the *buch*, which leads to the bell, is clearly conical in shape. The instrument by Baur shows no such tendency. The significance of this characteristic will be elaborated upon in the discussion of Doleisch’s instruments.

Plate 3.7. X-ray images of GNM: MIR 465 and GNM: MI 134, showing cylindrical and conical bores in the final passage of the *buch*.

Two other instruments, designated as *clarinettes d’amour* by the Cité de la Musique where they are housed but elsewhere as basset clarinets, are also stamped with the letters ‘AS’ and the museum catalogue records these instruments as also being
Viennese in origin.\textsuperscript{17} As was the case with the clarinet by Deper in Chapter 2, there is not enough evidence to suggest conclusively whether any of these instruments are Viennese or not. If the Nuremberg example is Viennese, it must significantly predate the Baur example as it exhibits several early features, such as its pronounced curve, duplicate A flat/E flat key, E/B and F#/C# keys operated by the thumb and mounted beside the C basset key, no D basset key, and a double hole for T4. Interestingly, the Nuremberg ‘AS’ basset horn shows a virtually identical key configuration and shape for the keys operated by the thumb on the dorsal side of the instrument as another anonymous instrument in the New York Metropolitan Museum of Art.

\textbf{Plate 3.8. Dorsal side of, from left to right, GNM: MIR 465 and NYMM: 1982.100.3.\textsuperscript{18}}

\textsuperscript{17} Rice, \textit{Large Size Clarinets}, 117, note 105; http://mediatheque.citemusique.fr/masc/?url=/clientbooklineCIMU/toolkit/p_requests/default-collection-musee.htm

\textsuperscript{18} Image for NYMM: 1982.100.3 taken from Shackleton, “Earliest Basset Horns,” Plate III.
The Nuremberg catalogue also identifies the instrument (GNM: MIR 465) with two basset horns in Stift Kremsmünster designated ‘AA’ and ‘SS’ respectively, the instrument in New York (NYMM: 1982.100.3) marked only ‘1’, and a further unmarked basset horn in Prague.\(^{19}\) The connections drawn in the Nuremberg catalogue are based on key configuration, body shape (including that of the \textit{buch}) and construction methods, as well as a letter from Professor Helmut Schutz, Director of the Leipzig Instrument Museum, dated 1936 in which the place of origin for this instrument was given as Vienna.\(^{20}\) The instruments in Stift Kremsmünster are not marked with a sun similar to the instrument in Nuremberg.\(^{21}\) The ‘AA’ stamp corresponds closely to the stamp on an oboe by Rockobaur (Linz: Mu 45, see Chapter 6).

\textbf{The Lempp Basset Horn}

Another instrument which may predate, or be at least contemporaneous with Lotz’s instruments is the basset horn in F by Lempp in the Landesmuseum Linz (Mu 28). Philip Young attributes the instrument to Martin in his catalogue of the collection on the basis of its apparently more modern design.\(^{22}\) Its form is indeed unlike any other Viennese basset horns of the time, being similar to a bassoon in shape, with a butt joint in which the bore forms a ‘u’ shape before travelling upwards towards an outwardly curving brass bell.

\textsuperscript{19} Bär, \textit{Verzeichnis} Vol. 6, 79.
\textsuperscript{20} Bär, \textit{Verzeichnis} Vol. 6, 79.
\textsuperscript{21} Ernst Schlader, Personal Communication, June 2011.
\textsuperscript{22} Young, \textit{Landesmuseum}, 170 – 171.

There are several features, however, which suggest the instrument may be made by Friedrich rather than Martin. Firstly, the boxwood mouthpiece with the ‘duckbill’ profile is more typical of earlier instruments and would be unusual to find on an instrument of Martin’s generation, when mouthpieces were typically made of black wood with a more convex profile. A similar profile can be observed on the clarinet by Rockobaur and other three or four key instruments such as those by Stinglwagner and ‘IP’, as discussed in Chapter 2. Secondly, the stamp on the mouthpiece is placed on the reed side, which, together with the duckbill profile, suggest it was originally made for the earlier reed-uppermost style of playing.
Plate 3.10. From left to right: Side profile of mouthpiece from Linz: Mu 28, showing ‘duckbill’ profile; reed side of the mouthpiece of Linz: Mu 28 showing stamp.

Thirdly, all but one of the key springs are attached to the body of the instrument rather than the key itself, another practice more likely to be found on earlier instruments. Finally, in 1789 Friedrich advertised in the Wiener Zeitung a new kind of basset horn, which could refer to this design. However it should be noted that the new invention is mentioned only in connection to basset horns in E flat and G, whereas the instrument under discussion is in F.

The chief advantage, and presumably aim, in this design is its compact size. By doubling the bore back on itself in the manner of a bassoon the length of the instrument is effectively halved, allowing the player to hold it comfortably to the front of the body with the hands to the front as when playing the clarinet. The bassoon form also allowed the necessary length of the instrument to be
accommodated without the necessity of making the labour intensive *buch*. The shortening of the body also results in significantly shorter keys. The keys required for the basset notes, E/B and F#/C# found on the instruments of Lotz’s design are very long and often bent, cranked or jointed between the touchpiece and the key head. Such long keys, and particularly those which are not straight, lose a significant amount of energy between the depression of the key at the touchpiece and the action this inspires at the key head. The keys on the Lempp instrument are all relatively short and ingeniously placed within easy reach of the players’ fingers in a familiar, clarinet-like configuration.

A further advantage of this shape is its outward facing bell. The relatively small bore size in comparison to bore length of the basset horn, combined with small tone holes has always resulted in an instrument with high resistance and a relatively soft tone. On curved and angled basset horns this is compounded by the bell facing back towards the player and usually supported or gripped by the players’ legs. With Lempp’s bassoon design, the bell is angled to face directly towards the audience. This is the only basset horn from either Friedrich or Martin to have survived, so there is no indication if they made more instruments in this shape or if the design was well received. The fact that this is the only surviving example may suggest relatively few were made.

**Comparisons – body forms and construction**

Clearly there were other makers and styles of basset horn available to musicians in Vienna at the same time as Lotz was offering his new angled form. Yet the large number of surviving instruments by Lotz, as well as the adoption of this style of instrument by the following generation suggests it was overwhelmingly the most

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popular design. Apart from the ten extant examples by Lotz, basset horns with an angled knee of around 120° survive by Griesbacher, Merklein and Harrach have survived, as well as non-Viennese instruments such as those by Schölnast.

**Plate 3.11. Basset horn in F by Raymund Griesbacher, EUCHMI 4796.** The instrument was originally made with eight keys – keys in pillars and posts are later additions.

These makers also all adopt the oval bell shape which is a characteristic of Lotz basset horns. Whereas the bells of the earliest instruments had been large and circular in cross section, the bells on most Lotz basset horns are smaller and oval in cross section. Backofen illustrates this shape in his *Anweisung zur Klarinette nebst einer kurzen Abhandlung über das Bassett-Horn* of 1803, where he also describes the practicality of this shape for resting the instrument on the players’ thigh.²⁴

Franz Doleisch of Prague may be considered another significant maker of basset horns at the same time Lotz was creating his influential models, with eight known extant examples. Although Doleisch also made instruments in the angled form, his

approach differed from Lotz. The angle of the knee is generally more acute than that found on Lotz basset horns, being around 110°. Doleisch also includes another angle in the lower part of the barrel. The knee on Doleisch’s basset horns is integral to the right hand section, and consequently made of wood. They share this characteristic with basset horns by Strobach, a feature which Sebesta highlights as a point of connection between the two makers.25 Instead of the oval bell shape favoured by the Viennese makers, Doleisch’s basset horns all have large round brass bells.

Plate 3.12. Basset horns by Doleisch, Narodní Muzeum Prague, 466E, 467E, 476E.

Although not stamped, Lotz’s bells may further be distinguished by the laurel pattern adorning the rim. All of the Lotz basset horns in this study exhibit this form of decoration on the bell.

Plate 3.13. Detail from bell of basset horn by Lotz, Museum Viadrina (FO: R5366), showing detail of laurel decoration to rim.

Interestingly, the two Lotz basset horns in Prague (Prague, NM: 1365E and 2094E) both have round rather than oval bells, yet still display the laurel decoration identifiable with Lotz.

Plate 3.14. Basset horn in F by Lotz (Prague, NM: 1365E), showing rounded bell and detail of rim decoration. (No image of Prague, NM: 2094E available).
This departure in shape from that seen on all other Lotz instruments, and as identified by Backofen as being synonymous with Viennese instruments, may suggest that these instruments predate all other Lotz basset horns in this study. The instruments are likely to be part of a set, with 2094E numbered ‘1’ and 1365E a composite instrument - perhaps compiled from the remaining two instruments in the set – stamped ‘3’ on the barrel and left hand sections, and ‘2’ on the right hand and buch. Also distinct from Lotz’s instruments is the shape in which Doleisch made the buch. On Lotz basset horns, and most other Viennese basset horns of the time, including the earlier Baur model, the buch is flat and the bore is arranged in three parallel sections. Doleisch, however, and most other non-Viennese makers including August and Heinrich Grenser, chose to instead place the bore in a triangular configuration in cross section in the buch. The result is a more rounded and solid buch, which consequently is heavier and more unevenly weighted than the flat models seen on instruments by Lotz and Griesbacher.

The advantage of the shape of buch employed by makers such as Doleisch and the Grenser family lies principally in the mounting of the basset keys. The large flat surface on the dorsal side of the buch allows the basset keys to continue, for the most part, in a straight line from their touchpieces to key-heads. This is particularly crucial when the addition of one or more chromatic basset keys is considered and is demonstrable on the instruments by Doleisch at the Royal College of Music (RCM: 90), Musée Instrumental Brussels (MIM: 938) and Narodní Muzeum Prague (Prague, NM: 466E). In these instances, all three basset keys (for E flat, D and C) are mounted in a straight line from touchpiece to key-head, with only a slight crank in the shank of the key for basset C. The form adopted by Strobach, in which the whole lower part of the instrument is straight and without a joint, further simplifies the
addition of the basset keys, as all keys can run straight from key-head to touchpiece. Furthermore, as the keys do not cross over a joint (as they do on Lotz basset horns – from the stock to chimney) the possibility of the alignment of the keys being disrupted, and so their effectiveness, is eliminated. It is interesting to consider that Strobach may have been influenced in this design by Lotz, a possibility explored in greater detail later in this chapter, and that these improvements to the key system may first have been undertaken by Lotz although no instruments have survived to substantiate this. By comparison, basset keys on instruments by Lotz and those following in a similar style, even with a diatonic basset range require the D basset key-shank to be cranked and the C basset key mounted at a right angle with an articulated arm. In one instance (GNM: MI 135), the E/B key is also cranked to one side. The instrument by Merklein (KHM: SAM 328), with three basset keys, further demonstrates the complexity of mounting basset keys on a flat buch shape.

Plate 3.15. Dorsal view of basset horns by Doleisch (MIM-938 and RCM-90) showing basset keys mounted on flat dorsal side of buch.
Plate 3.16. Basset horn in F by Strobach, showing straight alignment of all basset keys, even with chromatic additions, and without crossing a joint. (GNM: MIR 471).

Plate 3.17. Basset horns in F by Lotz (FO: V – 433J and GNM: MI 135) showing cranked basset D key and articulated arm for basset C.
Plate 3.18. Basset horn in F by Merklein (KHM: SAM 328), showing complexity of key shank shape and mounting position for diatonic and chromatic basset keys on a flat *buch*.

The shape of the *buch* is further significant when examined in the context of how the instrument was held. The brass loop for securing the instrument by a piece of string to a button on the clothing, as described by Backofen and mentioned above, is on the left side of the instrument (players’ perspective) at the base of the *buch* on instruments by Doleisch. This means the instrument would naturally hang to the right side of the player. The protective brass plate on the left side (players’ perspective) of the *buch* on the anonymous instrument (GNM: MIR 465) suggests it was also intended to be held in this way (although this instrument is now without a brass loop). Significantly in the case of instruments by Doleisch, this places the E/B key opening against the player’s leg or body. Although this key is usually fitted with a key guard, the proximity to the players’ body would significantly muffle the note. This is especially important in light of the small tone hole size found on Doleisch
instruments which is discussed below. Furthermore, not all of the Doleisch instruments in this study are fitted with key guards, such as the instruments in Vermillion (NMM: 3541) and Prague (Prague, NM: 467E). In these instances the position of the buch, player’s body, and E/B key could result in the key being closed unintentionally or tangling with the player’s clothing and not closing when required.

Plate 3.19. Buch of (from left to right) basset horn in F by Doleisch (MIM: 938), basset horn in F by Doleisch (NMM: 3541) and Anonymous (GNM: MIR 465).
The basset horn by Jakob Baur (GNM: MI 134), with a flat shaped *buch*, has the brass loop for securing the strap at the base of the *buch* on the dorsal side. This would allow the instrument to be held either at the players’ side or to the front resting on the players’ leg, but still makes the instrument unbalanced in the players’ hands, giving a pivot point with an uneven balance ratio.

**Plate 3.20. Basset horn in F by Jakob Baur (GNM: MI 134), with position for brass loop on the dorsal side of the *buch*.**

It will also be noted in this image that the basset key for C is not protected by a key guard, nor is there any evidence that one was ever in place. Were the instrument to be held to the players’ side, this would create similar problems to those identified on Doleisch basset horns above. This would be a particular problem on this instrument, considering the high raised profile of the mounting of the C basset key (which in itself protects the E/B key).
Plate 3.21. Profile of the C basset key on GNM: MI 134, with the E/B key directly underneath.

By contrast, instruments by Lotz, and consequently by Griesbacher and other makers influenced by his design, have the brass loop mounted between the two basset keys on stock, giving the instrument a more central and consequently more balanced pivot point for the support and also allowing the instrument to be held in a more natural position to the front of the players’ body with the bell resting on the upper thigh. The importance of the oval bell shape characteristic of most of Lotz’s basset horns is highlighted by this, and the two innovations may be considered to be complementary. Not all of Strobach’s basset horns are fitted with brass loops for a strap support, but those that are (Prague, NM: 225E and 465E; GNM: MIR 471) have the loop positioned between the basset key touchpieces, as on Lotz’s instruments. This may be another of Lotz’s refinements which Strobach observed on Stadler’s instruments from Lotz.

Key number and placement

In his announcement of 1783, Cramer describes the basset horn he has linked to Lotz as having seven keys. As was stated earlier in this chapter, seven-key basset horns date generally from the middle of the 18th century and lack a basset key for D, much
like the anonymous instrument in Nuremberg (GNM: MIR 465, see Plate 3.2). Such instruments are usually configured to be played right or left hand uppermost with alternate A flat/E flat keys and for the E/B and F#/C# keys to be operated by either of the thumbs, similar to the contemporary clarinet in which an alternate hole was provided on either side of the instrument for F/C. It is possible that one of the alternate A flat/E flat keys on this instrument (probably the left as viewed in Plate 3.22) is not original. Note that it is considerably shorter than the other A flat/E flat key, situating the touchpiece some distance from the players’ finger, and the touchpiece head is facing the opposite direction to that which might be expected. It may be a repair.

Plate 3.22. Anonymous basset horn (GNM: MIR 465) showing alternate keys for A flat/E flat allowing for either hand uppermost style of playing.

Lotz’s instruments, by comparison, are universally eight-keyed, with two basset keys (D and C) and are configured to be played in the same way as the clarinet – that is with the left hand uppermost, one key for A flat/E flat, and the E/B and F#/C# keys operated by L4.
Plate 3.23. A flat/E flat and F#/C# keys on Lotz basset horn (GNM: MI 135).

This difference highlights two significant aspects of Lotz’s potential contributions to basset horn design. Firstly, the arrangement of the A flat/E flat and F/C keys. It will be noticed from the above two images that the shortest key - A flat/E flat - is mounted on either side of the long key (for F/C) on GNM: MIR 465, and centrally on the Lotz example (GNM: MI 135). Furthermore, the Lotz example only has a single key for A flat/E flat and dispenses with the swallowtail touchpiece for F/C seen on GNM: MIR 465. The configuration seen on GNM: MIR 465 is common to all sickle shaped basset horns and arises from its original usage by non-specialist players, such as oboists, cor anglais players or bassoonists – positioning the F/C and A flat/E flat keys in this way maintained a key configuration which would have been more familiar to double reed players. Finally, the positioning of the keys in this way provided a pleasing symmetry to the design of the instrument which is particularly

marked on basset horns with octagonal bodies. That this practice was used in Vienna prior to Lotz’s arrival there is evidenced by the surviving basset horn by Jakob Baur, which, while not providing an alternate A flat/E flat key on either side of the instrument, continues the tradition of mounting the longer F/C key centrally, opposite to that found on the contemporary clarinet, and with a swallow-tail touchpiece.

**Plate 3.24. A flat/E flat and F/C keys on basset horn by Jakob Baur (GNM: MI 134).**

While the reversal of these keys is a characteristic found universally on earlier basset horns, it persisted in some later instruments as well, most notably those by Doleisch, Strobach and the Grenser family. All the basset horns by these makers retain the earlier reversed position of the A flat/E flat and F/C keys. It is difficult to conceive why makers would persist in this design long after the basset horn had ceased to become a secondary instrument for double reed players and was primarily played by clarinettists used to a different configuration of these keys.
As all earlier basset horns, including the Viennese example by Baur, as well as contemporary non-Viennese instruments by Doleisch and Strobach all have their A flat/E flat and F/C keys reversed, the positioning of these keys to match that found on the clarinet appears to have been first introduced by Lotz and may be counted amongst his innovations to the instrument.

Although Strobach’s instruments date mostly from the first decade of the 19th century, they all exhibit the more old fashioned mode of mounting the keys for F/C and A flat/E flat (operated by the right little finger) in reverse order to that found on the clarinet. In suggesting that Strobach may have learned instrument making from Doleisch, Sebesta highlights this shared characteristic as evidence in support of this.27 The Nuremberg example by Strobach (GNM: MIR 471) has these two keys switched to the ‘normal’ position at a later date, and the original position of the keys is still evident. This later change suggests that not all players found the reversed position of these keys comfortable or easy to adopt. Sebesta and Hoeprich curiously explain Strobach’s adherence to this tradition by stating,

> Since most basset horn players were also clarinetists, this key placement would have caused considerable difficulties, something that Strobach presumably did not realize. … Or might we consider the possibility that his clarinetists were more versatile than those of today?28

Considering Strobach was himself a clarinettist, ignorance of the difficulty in playing an instrument in which the keys are mounted in the opposite position to where one might expect to find them (bearing in mind players of the day would have most likely, as today, first become proficient on clarinet before learning the basset horn) is a difficult argument to sustain. The fact that a large number of extant basset horns from a wide variety of makers demonstrate this feature suggests that clarinettists

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were adept at adjusting themselves to the new fingerings required by the different key configuration and simply accepted this as another skill that had to be gained. It is argued here that, instead of this being considered old fashioned, we must instead consider this the normal practice as the vast majority of basset horns of this time share this characteristic. Nevertheless, Lotz’s innovation of placing the keys in the same order as on the clarinet must have greatly simplified the change between basset horn and clarinet for players. Indeed, the inspiration for this may have come from Anton Stadler, who appears to have frequently played clarinet and basset horn in the one concert, as well as the need to switch instruments during opera performances, such as in *La Clemenza di Tito* KV 621. It may even be that innovations such as this assisted the basset horn in becoming the domain of specialist, skilled performers such as Stadler, rather than a secondary instrument for double-reed players.

Extant basset horns by Doleisch range in date from 1791 (Prague, NM: 466E) to 1803 (RCM: 90), and all Strobach’s instruments must date from sometime after 1790 to his death in 1812. Instruments by August Grenser, who is believed to have retired about 1796 and whose extant dated basset horns range from 1784 to 1795, also all have the two keys for R4 mounted in the reverse of the clarinet position, as do those by Jakob Grundmann (whose extant basset horns are dated 1787 to 1799). Instruments by Heinrich Grenser also have these keys configured in this way. No alternate A flat/E flat key is provided on any of these instruments, the position of left hand uppermost having now become established, but many of the instruments still maintain the traditional swallowtail shape of the F/C touch seen on earlier instruments.

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29 This if course does not mean that these makers did not make basset horns outside these dates (Doleisch’s earliest dated instrument is a bassoon, stamped 1773,(Sebesta, “Strobach,” 63)).

This presents a strong argument that Lotz was the first to mount the F/C and A flat/E flat keys in line with the key configuration of the contemporary clarinet, and that this must represent one of the improvements to the instrument mentioned by Cramer as taking place in 1782. Eppelsheim concurs with this, and further adds that the addition of the basset key for D coincided with the switch of the two keys for R4 to the same position as that found on the clarinet,\textsuperscript{31} thus adding further weight to the argument that Lotz was responsible for both these improvements.

If Cramer’s date of 1782 is taken as accurate, this suggests that Lotz had brought basset horn key configuration in line with that found on the contemporary clarinet at least nine years earlier than the earliest extant Doleisch basset horn. Makers such as Strobach persisted in using the reversed configuration for these two keys as long as thirty years after the more clarinet-like design was introduced by Lotz. This argues strongly for the hypothesis that, rather than old fashioned, the key configuration of instruments like those by Strobach was the norm, whereas Lotz’s instruments were well in advance of these designs.

By mounting the keys in this way, Lotz had made the basset horn more accessible to clarinet players in allowing them to utilize the same fingering as employed on the clarinet. The early date at which Lotz must have introduced this innovation is further evidence of the remarkable advancement of his approach to instrument making and design in the context of contemporary instruments and makers.

Lotz’s advertisement of 1785, already mentioned in Chapter 1, adds further weight to the hypothesis that one of Lotz’s aims in instrument innovation and manufacture was to make ‘doubling’ instruments, such as the basset horn, as close to the parent instrument as possible in order to facilitate the changeover between instruments. In

\textsuperscript{31} Eppelsheim, “Bassetthorn-Studien,” 99-100; 96.
this advertisement, Lotz’s highlights the virtues of his newly invented contrabassoon as being, “..., dennoch mit eben so leichtem Odem, und mit der nemlichen Art Röhren und Fingerapplikatur gespielt wird.”\[^{32}\] [..., which nevertheless can be played with the same lightness of breath, and with the same reeds and fingerings [as the usual bassoon].

**Chromatic basset keys**

Lotz also appears to have been the first to move the keys for F#/C# and E/B to the left side of the instrument to be operated by L4, as on the clarinet. The wider angle of the body designed by Lotz facilitated this move – the more acute angle of the 90° instruments complicated the placement and leverage of these keys in this position, and so they are usually placed on the dorsal side of the instrument for operation by the thumb. By moving these keys from the dorsal side of the instrument, space was cleared for the addition of the D basset key, which had been absent on all earlier basset horns. By adding the D basset key, Lotz gave the basset horn a diatonic range in the basset register. The transferral of the keys for F#/C# and E/B to the left side of the instrument and the addition of the D basset key may therefore be considered complementary innovations and the second of Lotz’s improvements to the key configuration of the basset horn. This is in contrast to two instruments – one by August Grenser (Stockholm: M553) and one by Grundmann (Tutz Collection, Innsbruck) – which each have basset D and C keys mounted on the dorsal side of the instrument together with the F#/C# and E/B keys.\[^{33}\] Interestingly, both instruments are stamped ‘1784’\[^{34}\] and therefore narrowly predate any of Lotz’s surviving examples. As Lotz’s improvements must date to 1782 or 1783 at the latest, however,

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\[^{32}\] *Wiener Zeitung*, 7\(^{th}\) September (1785), 2109.
\[^{34}\] Rice, *Large Size Clarinets*, 102.
the existence of the instruments by August Grenser and Grundmann does not discount Lotz as the innovator in the addition of the basset D key.

All of the extant basset horns by Lotz have diatonic basset notes, yet contemporary reports and surviving repertoire suggest that he made at least one instrument with an additional E flat basset note, and probably also a C#, making the basset range fully chromatic. Certainly Stadler’s basset clarinet in A must have had a fully chromatic basset range. Albrechtsberger credits the addition of these keys to the Stadler brothers, when in 1790 he stated, “die Brüder Anton und Johann Stadler, K.K. Kammermusici haben durch ihre Erfindung auch das tiefe und bassmässige Cis, D und Dis hinzufugen lassen; folglich geht es jetzt in der gehörigen Ordnung durch vier ganze Octaven…”35 [the brothers Anton and Johann Stadler, Imperial Chamber musicians, have added through their own invention the bass notes C sharp, D and D sharp to their instrument; it therefore now proceeds in the usual manner through four octaves…] There can be no doubt that the actual construction of the extra basset notes was undertaken by Lotz rather than the Stadler brothers, neither of whom are known to have any experience with instrument making. Whether or not the impetus to add the notes arose from Lotz himself or at the instigation of the Stadler brothers cannot be conclusively argued in the absence of any supporting documentation.

Nevertheless, chromatic basset notes appear not infrequently in the music of Mozart. The earliest known occurrence, as closely as can be ascertained in the absence of autograph manuscripts, is the Gran Partita K361, composed sometime between 1781 and 1784. Although there is only one chromatic basset note in the entire work – a basset E flat in the second basset horn part in the 3rd movement – the passage is exposed and crucial to the thematic material. Adjustment of the note up an octave

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35 Albrechtsberger, Gründliche Anweisung, 426.
would severely disrupt the melodic line, and transposition of the entire passage up an octave would similarly disrupt the voicing. Mozart was clearly assured of the presence of the note on at least one basset horn in Vienna at this time.

Figure 3.1. W.A. Mozart, *Gran Partita* K.361, 3rd movement, Trio 1, bars 86-90, showing only the active voices.

The *Notturni* for three basset horns and three voices, also composed around the same time, in approximately 1783, makes use of both basset E flats and C sharps. As with the example from K.361, any alteration of these parts to accommodate an instrument lacking a chromatic basset register would entirely disrupt the melody and voicing.\textsuperscript{36}

\textsuperscript{36} Note that the third part in KV. 437 is scored for a basset horn in G, suggesting the actual or projected existence of an instrument in this pitch with a chromatic or semi-chromatic basset range.
Figure 3.2. W.A. Mozart, Notturni “Mi lagnerò tacendo” KV 437, bars 29 – 33.
Figure 3.3. W.A. Mozart, *Notturni* “Se lontan, ben mio, tu sei” KV 438, bars 7 – 9.

Figure 3.4. W.A. Mozart, *Notturni* “Ecco quell fiero istante” KV 436, bars 4 -6.
Mozart also utilizes a basset C# in the first movement of the *Divertimento* No. 4 KV Anh. 229 (439b) and it is again in a situation where transposing the note to a higher octave would result in significant reduction of the texture.

**Figure 3.5.** W.A. Mozart *Divertimento* No. 4, KV Anh. 229 (439b), 1st movement, bars 108-109.

A sketch for an Allegro in F (KV Anh. 90 (580b)) for clarinet in C, basset horn in F, violin, viola and cello again demonstrates Mozart’s confidence in the availability of an instrument with chromatic basset notes, using a basset E flat in octaves with the clarinet and viola. As with previous examples, any omission or transposition of the note would impact significantly on the texture and melodic material.

**Figure 3.6.** W.A. Mozart, *Allegro* in F, KV Anh.90 (580b), bars 96-99.
Stadler also writes a basset C# in the third of his 18 Terzetti (date of composition unknown). Unlike the above examples, however, Stadler also writes a note an octave above, giving the player without a basset C# the option of transposing the note. Nevertheless, the transposed note is clearly disruptive to the melodic shape and the passage was evidently originally conceived for an instrument with a basset C#.

**Figure 3.7. Anton Stadler, 18 Terzetti, No. 3 – Allegro, Traum, bars 42-43. Taken from an 18th century manuscript in the Narodní Bibliothek, Prague, possibly in Stadler’s own hand.**

The occurrence of basset E flats and C sharps in repertoire by Mozart and Stadler indicates that at least one instrument with a chromatic basset range existed in Vienna at this time. That the use of these notes appears to be limited to works by these two composers at this time suggests the instrument was unique to their circle and therefore made by Lotz. No instrument with a chromatic, or even an E flat, basset extension by Lotz has survived, further suggesting that such an instrument was the only one of its kind. Other Viennese basset horns, such as those by Griesbacher, also only survive with a diatonic basset extension. While Lotz undoubtedly made such an instrument, its manufacture was not therefore immediately taken up by makers in Vienna. Only the basset horn by Merklein in the Kunsthistorisches Museum (KHM: SAM 328) has a basset E flat – the only Viennese instrument made in Lotz’s form to have such an extension.

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37 My thanks to Eric Hoeprich for providing me with a copy of this manuscript.
However, there are several basset horns from the late 18th and first part of the 19th centuries with semi- and fully-chromatic basset extensions. The majority of these come from the workshops of Doleisch and Strobach. Of the five (stamped) Doleisch instruments examined for this study, three have a semi-chromatic basset extension including basset E flat. These are dated 1795 (Prague, NM: 466E), 1797 (MIM: 938) and 1803 (RCM: 90) (all after Lotz’s death) and are the only Doleisch instruments with more than a diatonic basset extension. Thus there are no extant basset horns with a chromatic or semi-chromatic range dating from Lotz’s lifetime. These instruments are all stamped with the number 2 or 3, indicating they were part of set and probably used to play the second or third part of a trio. As has been shown in the repertoire examples above, chromatic basset notes appeared exclusively in the second and third voices of trios, or the second voice when in a pair, such as the Gran Partita KV 361. Although the sample of surviving numbered basset horns with semi-chromatic extensions is too small to determine with any certainty, it may be that only the second and/or third instruments in a set were provided with a semi- or fully-chromatic extension.

Of the ten Strobach basset horns examined for this study, two have a fully-chromatic basset register (GNM: MIR 471 and Prague, NM: 81E). All other Strobach instruments in the study have a diatonic basset register. In addition to these two fully-chromatic examples, there are four further examples known to have a fully-chromatic basset extension (Prague, NM 12.206, Berlin: 2915, Brno: 195E and 196E).\(^\text{38}\) It should be noted that, while Berlin 2915 was examined for this study, only the mouthpiece, mouthpiece cap and left hand section survived WWII.\(^\text{39}\)

\(^{38}\) Rice, *Large Size Clarinets*, 159.
\(^{39}\) Rice, *Large Size Clarinets*, 159.
Three other instruments in this study have chromatic basset notes – two by Zielke of Vienna (Berlin: 4852 and HH: MS-405), and one by Eisenbrandt of Göttingen (Berlin: 1208). One further instrument, by Johann Georg Braun of Mannheim (Berlin: 4707) has five basset keys, descending to low B natural ($B'$). These are all likely to be later instruments than those by Doleisch and Strobach, and the continued paucity of instruments with a chromatic basset range in comparison to those with a diatonic range suggests that the demand for such instruments continued to be relatively low. The lack of repertoire fully exploiting the chromatic range of the basset horn, together with contemporary descriptions of eight-key basset horns (that is, those with a diatonic basset register) in literature by Fröhlich (c.1810) and Schilling (c.1840)\(^{40}\) further suggest that basset horns with chromatic basset registers did not become the norm.

Comparisons – bore diameter

Bore diameters of basset horns generally reflect the bore diameter of contemporary clarinets – a characteristic which, combined with their length, contributes to their unique sound. It may therefore be expected that Lotz basset horns would have a bore of around 15mm while basset horns by other makers, such as Doleisch, would have a smaller bore diameter in keeping with the smaller bore evident on their surviving clarinets. Of the Lotz instruments included in this study, all exceeded the bore measurements of the extant clarinet, ranging from between 15.0mm to 15.5mm. 15.5mm is the most common measurement, accounting for five of the seven instruments measured in this study.

\(^{40}\) Lawson, “Basset Clarinet,” 489.
TABLE 3.1. Bores of Lotz basset horns measured for this study.

<table>
<thead>
<tr>
<th></th>
<th>Bore diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prague, NM: 1365E</td>
<td>15.2</td>
</tr>
<tr>
<td>Krasna Horka 1(^{41})</td>
<td>15.5</td>
</tr>
<tr>
<td>Krasna Horka 2</td>
<td>15.5</td>
</tr>
<tr>
<td>Krasna Horka 3</td>
<td>15.5</td>
</tr>
<tr>
<td>FO: R5366</td>
<td>15.5</td>
</tr>
<tr>
<td>FO: V – 433J</td>
<td>15.0</td>
</tr>
<tr>
<td>Berlin: 2911</td>
<td>15.5</td>
</tr>
</tbody>
</table>

Of the surviving basset horns by Lotz, only one is known to differ from this range of bore measurements: this is the instrument in the Rosgarten Museum Konstanz (J19). This instrument is reported to measure 16.0mm.\(^{42}\) The instrument is further unusual in that it was made for a left handed player – the only such of Lotz’s extant basset horns. It also appears to have a more square profile to the *buch* than any other surviving basset horn by Lotz. These features lead Hoeprich to suggest this might have been a prototype instrument.\(^{43}\) Arguing strongly against this is the fact that, in other respects, the Konstanz basset horn shares the same advanced features of Lotz’s other basset horns, and the fact that the instrument is stamped, as are all the others, with Lotz’s title as *K.K. Hofinstrumentenmacher* means this instrument must post date 1785. If Lotz was already reported to be making innovations to the basset horn in 1782/83, it is unlikely that he would still be producing a prototype instrument several years later, after his court appointment of 1785. The unusual size of the bore of this instrument may be original, but may equally be the result of a later re-reaming of the bore which is now impossible to detect. The left handed configuration is likely to have been at the request of the owner or player. To this author’s

\(^{41}\) Measurements for the three instruments from Krasna Horka are kindly provided by Eric Hoeprich, who made detailed technical drawings of the three instruments while examining them.

\(^{42}\) Hoeprich, “A Trio of Basset Horns,” 230.
knowledge, the instrument is not stamped with a number, indicating it was not made as part of a set.

Plate 3.25. Basset horn in F by Lotz, Rosgarten Museum Konstanz (J19). Image provided courtesy of the museum.

Seven basset horns survive by Griesbacher, all of which bear strong similarities to the extant instruments of Lotz. They share a similarly large bore diameter with a range of 15.5mm (EUCHMI: 4796) to 15.7mm (Santa Cecilia Rome). The emphasis on clarinets and basset horns displayed by Griesbacher’s surviving output demonstrates a similarity of focus to Lotz which is consistent with the strong indications of a personal connection existing between the two makers as explored in Chapter 1. Curiously, there are no basset horns surviving by Tauber, nor is any indication given in his Weiner Zeitung advertisements that he made them. His extant

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output demonstrates a considerable emphasis on bassoons and contrabassoons, which will be discussed more fully in Chapter 4. This fact in itself suggests a working practice within Lotz’s workshop, where he trained his apprentices to specialise in different areas of instrument manufacture in order to reduce potential competition.

TABLE 3.2. Bore diameters of Griesbacher basset horns measured for this study.

<table>
<thead>
<tr>
<th>Bore diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUCHMI: 4796</td>
</tr>
<tr>
<td>EUCHMI: 4797</td>
</tr>
<tr>
<td>RCM: 242</td>
</tr>
<tr>
<td>Rome: MUSA 050</td>
</tr>
</tbody>
</table>

Nor are there any surviving basset horns from Lotz’s other pupil, Franz Scholl. However, his interest in improving and experimenting with wind instruments is demonstrated by his advertisement in the *Wiener Zeitung* of 1803, which describes his improvements to and developments of instruments in the clarinet family.

Franz Scholl k. priv. Blas-Instrumentenmacher in Wien, empfiehlt einem hohen adel, einem verehrunswürdigen Publikum, und allen löbl. K. K. Regimentern seine theils selbst neu erfundene, theils nach eigener Erfindung beträchtlich verbesserte und vervollkommnete Blasinstrumente. 1) Seine Clarinetten (in B oder C) gehen um 2 Töne tiefer, nämlich bis in das tiefe C, welches da man den tiefen Grundton zur Kadenze hat, immer einen guten Effect macht; seine Clarinetten müssen sich außerdem durch guten Bau, reine Stimmung, und durch die eine neue Art, wie die Klappen angebracht sind, vorzüglich empfehlen. 2) Verfertigt er ein Instrument von neuer ganz eigener Erfindung, nämlich den Schollbaß (Sciolbasso).  Dieses ist ein clarinettartiges Instrument, welches bis in des tiefe B des Octav-Fagottes herunter reicht, und einen Umfang von mehr als vollkommen 4 Octaven beherricht, welchen noch kein bis jetzt bekanntes Blasinstrument bestegt 3) Eine andere Art eben dieses Scholbasses (Sciolbasso) gehet bis in das sogenante grosse G. – Ueberhaupt empfiehlt sich der Schollbaß nicht bloß durch seinen ausserordentlichen Umfang, sondern auch durch die Annehmlichkeit des ihm eigenthümlichen Tones im Discant, wie im Baß. Diese
Instrument ist so eingerichtet, daß es die Clarinet-Scala hat, und von jedem Clarinettisten geblasen werden kann.\textsuperscript{44}

[Franz Scholl bespoke wind instrument maker in Vienna, presents to the nobility, worthy public, and all praiseworthy military regiments his newly invented instruments. 1) His clarinets (in B flat or C) go two tones lower, namely to low C, which, as the lower pedal tone, always has a good effect in cadences; his clarinets are to be recommended for their good construction, pure intonation, and with the keys attached in a new manner. 2) He has prepared an instrument of entirely new invention, namely the Schollbasso (Sciolbasso). This is a clarinet-type instrument, which reaches the low B of the Octave Bassoon and has a compass of more than 4 complete octaves, which no currently known wind instrument achieves. 3) Another kind of Schollbasso (Sciolbasso) which descends to the so called large G. – The Schollbasso recommends itself not only because of its exceptional compass, but also its pleasing tone in both the descant and bass registers. This instrument is so arranged as to have the clarinet scale and can be played by clarinettists.

Scholl received a *Hofdekret* in 1802 for his Schollbasso, indicating his continued interest in low pitched clarinets with an extended range. However, this advertisement does not specifically identify basset horns, and places emphasis on his developments of basset clarinet-like instruments, which may suggest that, while Lotz shared his knowledge of clarinet and basset horn manufacture with Griesbacher, bassoons and contrabassoons with Tauber, Scholl received instruction in producing basset clarinets. Indeed, as Scholl applied for his first *Hofdekret* for the Schollbasso shortly after the death of Lotz (firstly in 1794), it may even be a possibility that the instrument was the result of a collaboration with Lotz himself, and a continuation of the work already undertaken on Stadler’s instruments.

Later Viennese basset horns share a similarly large bore with the Lotz examples, with instruments by Merklein measuring 15.8mm (HH: MS-408), Harrach 15.5mm (MCA: 18/32), and Ziegler 15.5mm (Brussels, MIM: 1987-027) and 15.8mm (HH:

\textsuperscript{44} *Wiener Zeitung*, 2\textsuperscript{nd} April, (1803), 1174.
The earlier example by Baur (GNM: MI 134) however, is considerably smaller than the examples by Lotz and other Viennese makers, measuring 13.8mm at the top of the finger hole section, and appears to be slightly conical, measuring 14.7mm at the bottom of the same section. The mouthpiece, and possibly also the barrel, of this instrument do not appear to be original. A conical bore in the main part of the body is extremely uncharacteristic of instruments of the clarinet family, and it may be that this characteristic demonstrated in this instrument by Jakob Baur is a result of wood shrinkage rather than representative of the original form of the instrument. As with the Jakob Baur example, the ‘AS’ instrument (GNM: MIR 465) also lacks its original mouthpiece and barrel. Unlike the Baur example, the bore appears to be cylindrical, measuring 14.5mm at both the top and bottom of the finger hole section.46

The bores of Doleisch basset horns are consistently smaller than those measured on Lotz basset horns, never exceeding 14.2mm (Prague, NM: 466E, dated 1795) and with two instruments measuring 13.4mm (NMM: 3541, dated 1793, and MIM: 938, dated 1797). This is a difference of more than 1.3mm from the Lotz models.

TABLE 3.3. Bore diameters from Doleisch basset horns measured for this study.

<table>
<thead>
<tr>
<th>Bore diameter (mm)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prague, NM: 467E</td>
<td>14.1</td>
</tr>
<tr>
<td>Prague, NM: 466E</td>
<td>14.2</td>
</tr>
<tr>
<td>Prague, NM: 476E (att.)</td>
<td>13.8</td>
</tr>
<tr>
<td>NMM: 3541</td>
<td>13.4</td>
</tr>
<tr>
<td>Brussels, MIM: 938</td>
<td>13.4</td>
</tr>
<tr>
<td>RCM: 90</td>
<td>13.9</td>
</tr>
<tr>
<td>HH: MS – 408 (att.)</td>
<td>13.8(^{47})</td>
</tr>
</tbody>
</table>

Strobach, from whom at least fifteen extant basset horns are known, shares a similarly narrow bore with Doleisch. Sebesta cites this as one factor indicating that Strobach may have received his training in instrument manufacture from Doleisch during the years he lived in Prague.\(^{48}\) Strobach’s basset horn bores generally measure no more than 14mm, a size which Sebesta comments is unusual.\(^{49}\) As is shown here, however, bores of this size were more common than the larger diameters found on instruments by Lotz. The only instrument of Strobach’s to exceed 14mm is the Nuremberg example (GNM: MIR 471), recording 15.0mm at the top of the left hand section, but reducing to 14.4mm at the bottom of this section.\(^{50}\) The bore

\(^{46}\) Bär, Verzeichnis Vol. 6, 83. Due to the middle section of the instrument being too firmly attached to the chimney to allow its separation and measurement, the catalogue has been relied upon for this part of the bore, but the author’s own measurement was obtained for the top of the section.

\(^{47}\) Heyde, Händel-Hauses, 225.

\(^{48}\) Sebesta, “Strobach,” 63.

\(^{49}\) Sebesta, “Strobach,” 63.

\(^{50}\) Bär, Verzeichnis Vol. 6, 172.
remains at 14.4mm in the right hand section but has reduced to 13.8mm at the beginning of the pipe leading to the bell.\textsuperscript{51}

**TABLE 3.4. Bore diameters of Strobach basset horns measured for this study.**

<table>
<thead>
<tr>
<th></th>
<th>Bore diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUCHMI: 969</td>
<td>14.0</td>
</tr>
<tr>
<td>DM: 63678</td>
<td>13.0</td>
</tr>
<tr>
<td>GNM: MIR 471</td>
<td>14.0</td>
</tr>
<tr>
<td>Prague, NM: 132E</td>
<td>13.8</td>
</tr>
<tr>
<td>Prague, NM: 465E</td>
<td>13.9</td>
</tr>
<tr>
<td>Prague, NM: 81E</td>
<td>14.1</td>
</tr>
<tr>
<td>Prague, NM: 191E</td>
<td>13.4</td>
</tr>
<tr>
<td>Berlin: 2915</td>
<td>13.9</td>
</tr>
</tbody>
</table>

The unusual basset horn by Friedrich Lempp (Linz: Mu 28) is consistent with Lotz and Griesbacher basset horns, with a bore of 15.5mm.

**Graph 3.1. Scatter graph demonstrating the relationship of bore diameters for basset horns by Lotz, Griesbacher, Doleisch and Strobach.**

Unlike the clarinet, the bore of basset horns made by Lotz do not flare at any point, remaining cylindrical for the length of the wooden body of the instrument. The bore

\textsuperscript{51} Bär, *Verzeichnis* Vol. 6, 172.
passes through the *buc*h three times, remaining constant throughout, and the bell is fitted in a tenon and socket joint at the end of the last of these passages. Without exception, all the Lotz basset horns measured for this study measured the same at this point as for the rest of the bore. This is also true of the basset horns by Griesbacher, Harrach and Ziegler.52

This is not the case, however, for basset horns by Doleisch. All the Doleisch basset horns in this study flare to varying degrees in the bore of the *buc*h. The bell, rather than fitting with a tenon and socket joint, is wedged in to the flaring shape of the bore. Most of the instruments begin their flare towards the end of the final passage of the bore in the *buc*h, but the instrument in the National Music Museum in Vermillion (NMM: 3541) already measures 19.8mm towards the top of this final passage.

Table 3.5. Measurements from the final passage of Doleisch basset horns, together with conicity.

<table>
<thead>
<tr>
<th></th>
<th>Min. to Max bore diameter (mm)</th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prague, NM: 467E</td>
<td>17.9 – 23.6</td>
<td>0.06</td>
</tr>
<tr>
<td>Prague, NM: 476E</td>
<td>14.9 – 19.9</td>
<td>0.06</td>
</tr>
<tr>
<td>(att.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMM: 3541</td>
<td>19.8 – 24.4</td>
<td>0.06</td>
</tr>
<tr>
<td>RCM: 90</td>
<td>19.1 – 22.7</td>
<td>0.06</td>
</tr>
</tbody>
</table>

At the end of the *buc*h the Vermillion example measures 24.4mm. All other examples are also in this vicinity, ranging between 23.6mm (Prague, NM: 467E) and 25.0mm (MIM: 938). However, as the bell is inserted past this point it does not represent the actual sounding bore diameter, although given the thin brass of the bell

52 The basset horn by Merklein in the Kunsthistorisches Museum (KHM: SAM 328) is too fragile to be removed from display and so was examined without taking measurements.
it cannot be much less. The bell of Prague NM: 466E measures 17.9mm at the top and the Vermillion example is close at 17.5mm, whereas Prague, NM: 467E measures 19.0mm at this point and the instrument in Brussels (938) is 19.8mm. Without a socket and tenon joint, the amount of bell which is inserted into the *buch* changes depending on the amount of cotton used on the top of the bell and the force with which the bell is inserted. It is therefore impossible to make any meaningful comparisons between the bore of the *buch* and the corresponding bore of the bell.

The Baur basset horn (GNM: MI 134) connects the bell and the *buch* with a tenon and socket joint as seen on the Lotz instruments, but the final passage of the *buch* is described in the museum’s catalogue as “approximately cylindrical”.\(^{53}\) The anonymous basset horn in the Nuremberg Collection (GNM: MIR 465), however, is clearly conical in the last channel of the *buch*.\(^{54}\) This is apparent on the X-ray which shows this channel significantly larger than the one which precedes it.\(^{55}\) Indeed, at each turn of the bore in the *buch* the bore appears to undergo a significant enlargement, after the first returning to the previous size of the bore, but after the second immediately enters a larger sized bore. These localized enlargements are the result of the way in which the turns are shaped – rather than gently rounding the dividing wall which can be seen in the Baur example, on the anonymous instrument the dividing wall has been filed away to a peak, creating an increase in bore size on either side of the peak.

The anonymous instrument (GNM: MIR 465) does not have a socket to take the bell in the final passage of the *buch*, with the tenon of the wooden bell wedged into the conical bore of the *buch*, much as in the instruments by Doleisch. Rice suggests that

\(^{53}\) No internal measurements of this instrument were permitted by the museum, but the bore shape can be discerned on X-ray images.

\(^{54}\) Bär, *Verzeichnis* Vol. 6, 77.

\(^{55}\) Bär, *Verzeichnis* Vol. 6, 82.
the wooden bell is not original.\textsuperscript{56} It may therefore indicate that instruments without a socket and tenon joint at the bell are adhering to an earlier tradition. In the case of the instruments by Doleisch, this is in keeping with other more traditional aspects of their design, such as the smaller bore and reversed A flat/E flat and F/C keys.

**Plate 3.26. X-rays of the buch of basset horns by Anon (GNM: MIR 465) Baur (GNM: MI 134), and Lotz (GNM: MI 135).**

Strobach basset horns, which are of a different body shape altogether from the instruments previously discussed, also do not flare in the lower part of the bore. These instruments, instead of having a clarinet-like or flaring bell, have a bulbous bell closed at the end and with a sounding hole on one side. This shape is strongly reminiscent of the engraving shown in the 1794 programme from Stadler’s concert in Riga which is believed to represent Stadler’s basset clarinet (See Plate 3.29 below), discussed in further detail in the section on basset clarinets. The programme for Stadler’s final concert in Riga on March 21\textsuperscript{st}, 1794, in which Stadler also performed on his basset horn, states that this instrument has the same structure as his basset clarinet.\textsuperscript{57} This suggests that, as well as a straight-bodied basset clarinet, Lotz had made a basset horn in F with an angled barrel, straight body, and right angled knee leading to a bulbous bell for Stadler. One of the primary motivations for Lotz to

\textsuperscript{56} Rice, *Large Size Clarinets*, 117.

construct a basset horn in this shape may have been the ease of adding chromatic keys on a straight body without bridging sections, as identified as a significant advantage of this shape on basset horns by Strobach above. This poses the question as to whether Strobach adopted only the shape of Stadler’s straight basset horn, or if he incorporated other aspects of the design as well.

Strobach basset horns feature a mouthpiece with an unusually highly tapered window. On the example in Edinburgh (EUCHMI 969) the narrowest part of the window measures just 2.7mm, progressing to 9.3mm at the tip. Mouthpieces from basset horns by Lotz and Griesbacher, by comparison, are less aggressively tapered, measuring about 3.2mm at the base of the window to 8.6mm at the tip (GNM MI 135).

Sebesta and Hoeprich claim that:

> Playing a basset horn by Strobach is a remarkable experience. As with most basset horns, the sound can of course be described as dark, but it is also strong and full, with uniformity, resonance and the perfect sort of resistance. The cross fingerings speak clearly and well in tune at a pitch of \( a' = c_{435} \text{ Hz} \).

The present author’s experience of playing the Edinburgh Strobach basset horn (EUCHMI: 969) is contrary to this. Although the tone and intonation did seem secure, the instrument was extremely soft, which characteristic was magnified on the basset notes, and the resistance was quite high. It must, however, be noted that the condition of the mouthpiece of the instrument is such that it limits the extent to which a true understanding of the instrument’s playing qualities can be judged. Nevertheless, although the tone is generally pleasant, the small bore and generally smaller tone holes as compared to instruments by Lotz and Griesbacher cannot allow for a more robust tone. This is exemplified when playing the most complete of the
Edinburgh Griesbacher basset horns (EUCHMI 4796). This instrument is very free blowing and produces a remarkably full, strong tone.

Comparisons – tone hole size

In the upper half of the instrument, there is little to separate tone hole sizes of the various makers. Indeed, if anything Lotz’s may be considered slightly on the conservative side. However, as was found with clarinets, the differences become more apparent in the lower half of the instrument. The tone holes on Lotz and Griesbacher instruments generally begin to become significantly larger than those on Strobach and Doleisch instruments from T4. The difference is most pronounced from the F#/C# key onwards, where Lotz instruments have a tone hole area as much as twice that of Doleisch and Strobach instruments.

Table 3.6. Comparative table of tone hole areas from basset horns by Lotz, Doleisch and Strobach.

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>A</th>
<th>Th.</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>F/C</th>
<th>A\textsuperscript{b}/E\textsuperscript{b}</th>
<th>F#/C#</th>
<th>E/B</th>
<th>D</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz Prague, NM: 1365E</td>
<td>11.0</td>
<td>21.9</td>
<td>20.8</td>
<td>19.6</td>
<td>18.8</td>
<td>21.6</td>
<td>33.6</td>
<td>26.4</td>
<td>26.9</td>
<td>57.4</td>
<td>74.6</td>
<td>63.3</td>
<td>93.6</td>
<td>112.1</td>
<td>95.5</td>
</tr>
<tr>
<td>Lotz GNM: MI 135</td>
<td>9.1</td>
<td>29.1</td>
<td>21.2</td>
<td>20.8</td>
<td>20.8</td>
<td>20.8</td>
<td>38.5</td>
<td>27.8</td>
<td>31.1</td>
<td>56.0</td>
<td>73.8</td>
<td>67.9</td>
<td>133.1</td>
<td>156.6</td>
<td>147.1</td>
</tr>
<tr>
<td>Lotz Berlin: 2911</td>
<td>15.5</td>
<td>28.2</td>
<td>23.3</td>
<td>22.9</td>
<td>21.6</td>
<td>20.0</td>
<td>43.5</td>
<td>33.2</td>
<td>37.2</td>
<td>74.5</td>
<td>103.7</td>
<td>77.7</td>
<td>190.8</td>
<td>158.2</td>
<td>83.2</td>
</tr>
<tr>
<td>Doleisch NMM: 3541</td>
<td>n/a</td>
<td>24.6</td>
<td>28.7</td>
<td>23.7</td>
<td>24.6</td>
<td>23.7</td>
<td>30.7</td>
<td>25.1</td>
<td>29.2</td>
<td>94.7</td>
<td>n/a</td>
<td>35.2</td>
<td>56.7</td>
<td>49.6</td>
<td>67.1</td>
</tr>
<tr>
<td>Doleisch MIM: 938</td>
<td>n/a</td>
<td>n/a</td>
<td>28.3</td>
<td>22.0</td>
<td>23.3</td>
<td>22.9</td>
<td>30.1</td>
<td>21.6</td>
<td>22.0</td>
<td>n/a</td>
<td>95.1</td>
<td>31.1</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Doleisch Prague, NM: 476E (att.)</td>
<td>25.9</td>
<td>9.1</td>
<td>18.8</td>
<td>22.1</td>
<td>20.9</td>
<td>22.5</td>
<td>25.0</td>
<td>21.6</td>
<td>20.4</td>
<td>64.3</td>
<td>n/a</td>
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The opposite appears to be true of the two slightly earlier or contemporary Viennese instruments in this study – Baur and Lempp. Both these instruments exhibit considerably larger tone holes in the upper part of the instrument. The tone holes on the Baur basset horn (GNM: MI 134) are all consistently and significantly larger than the corresponding holes on most of the Lotz instruments up to and including T5. From this point onwards the tone holes on the Lotz instruments become significantly larger than those on the instrument by Baur. The tone holes on the Lempp basset horn (Linz: Mu 28) remain larger for longer – up to and including T6 – when again the Lotz instruments become significantly larger. The Lempp instrument has the smallest C basset tone hole at 44.1mm$^2$ compared to 79.3mm$^2$ on the Baur instrument and a range of between 88.2mm$^2$ to 147.1mm$^2$ on the Lotz instruments.

This difference in tone hole size between other Viennese instruments as well as non-Viennese makers such as Doleisch and Strobach indicates a fundamentally different approach in the voicing and intonation of the instrument. The large tone holes in the lower part of Lotz’s instruments, particularly the basset notes C and D, give the instrument larger vent holes for the notes fingered above these, and therefore produce a louder and more robust tone. The effect of the smaller tone holes on this part of the instrument, as observed on instruments by Baur, Lempp, Doleisch and Strobach, has the opposite effect. The larger tone holes on the upper part of the instrument observed in Baur and Lempp would favour the notes in the throat register (from written d’ to b flat’) as well as some notes in the upper register (written a” to d’” or e’”). Its beneficial effects are therefore more localised than that achieved by Lotz, who clearly aimed at an instrument with more consistency in tone throughout the instruments’ register. Hoeprich observed this characteristic in the set of three basset
horns by Lotz in Krásna Hôrka Castle, when he stated, “Interestingly it was not possible to discern any predilection for a particular part or range. Indeed, each of the three plays extremely well in any part of its four octaves.”59 This may also in part be ascribed to the significant undercutting observed by Hoeprich on the tone holes for the left index finger and the basset notes.60 Although difficult to measure and quantify, significant undercutting was also observed on the other Lotz basset horns in this study, and less so on instruments by Doleisch and Strobach. This difference was particularly noticeable on the lower half of the instruments.

One further refinement which Lotz applied to the tone holes of the basset horn, and which was also taken up by those who may be considered his successors, such as Griesbacher, is the offsetting of T3 to the left (players’ perspective). By placing this tone hole to the left of centre, Lotz has brought it closer to the players hand, thus allowing a more natural and comfortable playing position. This can also be found on instruments by Griesbacher, Harrach and Merklein, whereas instruments by Doleisch and Strobach all have T3 placed centrally. Although apparently a small detail, this not only demonstrates the level of thought and attention Lotz paid to his basset horn design, but also strongly suggests his innovations in instrument making were directly inspired by his experiences as a player.

This is further exemplified by the careful and discreet markings Lotz placed on his basset horns to ensure each section was aligned correctly. This is particularly crucial in the lower part of the instrument – if the stock and chimney are even slightly out of alignment the set of the basset keys is altered, the instrument no longer seals correctly and, if it works at all, behaves unpredictably and frequently whistles and squeaks. To give players a quick reference point – effective in performance should the sections of the instrument move – Lotz burned small neat dots on each section which can be aligned with corresponding dots on the section with which it joins. The lower part of the knee is marked with three dots to distinguish it from the upper part of the knee which is marked with one dot. This makes it easy to distinguish which

60 Hoeprich, “A Trio of Basset Horns,” 229.
way up the knee – an otherwise fairly amorphous shape when removed from the instrument – should be assembled.

Plate 3.28. Basset horn in F by Lotz (Berlin: 2911), showing burned dots for accurate alignment of the sections, from left to right: Left hand connected to knee; knee connected to right hand; stock connected to chimney.

Influences of Lotz’s design

As will be discussed more fully in the section on basset clarinets, Strobach’s basset horns bear a strong visual resemblance to the engraving of Stadler’s basset clarinet from the 1794 Riga programme. The above discussion substantiates Sebesta’s theory that Strobach received his training in instrument making from Doleisch, as his instruments share several features in common with those of Doleisch, such as a narrow bore and tone hole size. Sebesta presents a convincing argument for Strobach to have been present at the performance of *La Clemenza de Tito* in Prague
in 1791, and that seeing Stadler’s instrument greatly influenced his own designs.\footnote{Sebesta, “Strobach,” 60-61.}

The question then arises as to how far the influence of Stadler’s instruments extended in Strobach’s own instrument design. This comparative discussion suggests, due to the significant difference between instruments by Lotz and Strobach in crucial areas of instrument design, such as bore and tone hole size and key configuration, that Lotz’s influence on Strobach went only as far as the shape of the instrument.

Several other later instruments also exhibit a strong similarity in shape to the instrument by Lotz represented on the Riga drawing and may indicate an even wider influence of this design. For this study, two instruments – by Johann Benjamin Eisenbrandt (1753 – 1822, Göttingen) (Berlin: 1208) and Johann Georg Braun (c. 1790 – 1833, Mannheim) (Berlin: 4707) – were examined. The instrument by Eisenbrandt, damaged in WWII, is missing the right hand section but it can be seen that, along with the instrument by Braun, it shares with the Riga drawing an angled barrel, straight middle sections, an angled knee at the bottom of the instrument leading to a bulbous bell plugged at the end with a sound hole cut in the side. Both instruments have a fully chromatic basset register, and the instrument by Braun has an additional basset key for low B natural. The bores of both these instruments are larger than Lotz basset horn bores at 16.0mm, and they may be considered a more modern evolution of Lotz’s original design. It is conceivable that both these makers had knowledge of Lotz’s design.
Plate 3.29. Basset horns in F by Eisenbrandt (Berlin: 1208) and Braun (Berlin: 4707), compared to the Riga drawing at bottom.  

The instrument by Braun is particularly significant when the question of bell position on Lotz’s design is considered. Whether or not the bell pointing towards the player, as shown in the Riga engraving, is an accurate representation of how the instrument was played or was simply shown that way in order to provide a frame for the rest of the programme is one which players and makers have sought to answer since the programme’s discovery. It is this writer’s opinion, from practical experience, that

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62 Copy from original programme housed in the Latvian Fundamental Library, Riga, as shown in Rice, *Classical Period*, 73.
the representation on the Riga programme is accurate, as playing the instrument with
the bell facing towards the player is the only way to prevent the instrument resting
too close to the body and allows the instrument’s weight to rest on the leg, thus
freeing the right thumb to operate the basset keys. The Braun instrument further
confirms this, as the basset key for low B natural is mounted on the side of the knee
leading to the bell (seen in Plate 3.29), where a sound hole is found on other
instruments of this design lacking this key. The position of the key flap and shank
means the instrument can only ever be played with the bell facing towards the player.
A further interesting later instrument is by Zielke of St. Petersburg (Berlin: 4852). It
is made in the same angled form as Lotz’s basset horns, with the exception that the
flat *buch* projects to the right of the instrument (from the players’ perspective) rather
than to the front as found on Lotz’s instruments. It has a fully chromatic basset
range, a large bore of 16.0mm and large tone holes which, for the most part, exceed
those on Lotz basset horns and an oval bell. It is set at a wider angle than Lotz
instruments at 140°. It may therefore be considered a more modern evolution of
Lotz’s angled design. Stadler performed in St. Petersburg in 1794.63

Plate 3.30. Basset horn in F by Zielke of St. Petersburg (Berlin: 4852).

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Several other innovative basset horn designs began to appear in Vienna in the first two decades of the 19th century, most notably by Hammig Junior and Koch, but are considered beyond the scope of this study, which is intended to highlight the importance and influence of Theodor Lotz, not to trace the developmental innovations in basset horn design beyond his influence.

**BASSET CLARINETES**

**Introduction**

Any discussion on Lotz’s innovations to low pitched clarinets must naturally include the basset clarinet. It was for this instrument which Mozart wrote the Concerto KV. 622 as well as the Clarinet Quintet KV. 581 and several obbligato arias. This instrument, as opposed to the basset horn pitched in F, is a regular clarinet pitched in B flat or A with an extension to written low C. Undoubtedly for a time Lotz was the only maker of such instruments and Anton Stadler must have had the monopoly on them and their compositions. Much has been written concerning Stadler’s basset horn and basset clarinet, but without surviving instruments as evidence any discussion must remain largely unsubstantiated. It is possible, however, to arrive at some well-founded conclusions through the study of related extant instruments, concert programmes and contemporary reports. This discussion will summarise the discussion on this topic in the literature to date, as well as add new interpretations of the evidence. The spread and influence of the design of Stadler’s instruments has already been touched upon in the previous section regarding instruments by Strobach, Eisenbrandt and Braun. It also considers the personal and creative
collaboration between Lotz, Stadler and Mozart which brought about this instrument and its repertoire.

Strobach and Stadler’s basset clarinet

The most significant advance in research in this area occurred with Pamela Poulin’s discovery of the now well-known concert programme from one of Stadler’s 1794 concerts in Riga, which shows an image of one of his basset clarinets (see Plate 3.29). Hitherto, speculation as to the actual form taken by Stadler’s instrument had been rife, fuelled by often misleading contemporary accounts as commentators attempted to describe an instrument unlike any other seen before.

The Riga programme shows an instrument with a straight body, unlike the angled or curved form of the contemporary basset horns, with an angled barrel at the top and a right-angled knee at the bottom, leading to a bulbous bell. Strobach was one of several makers who began to produce basset horns in this form. It will be remembered from Chapter 1 that Strobach, when applying for residency in the city of Carlsbad in 1801, described himself as a former musician at the Prague National Theatre. Sebesta, in his article revealing new information on this maker, argues convincingly that Strobach may have encountered Stadler’s instruments during this time, and that this influenced his instrument making and design.

Based on the date of the evidence of Strobach’s first documented association with Carlsbad (his marriage of 1794 and 1801 application for residency), Sebesta estimates that Strobach’s employment at the Prague National Theatre could have been around 1790, thus likely placing him in Prague, and in the same theatre, when

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64 Poulin, “Recent Discoveries,” 110 – 127.
La Clemenza di Tito was performed there in 1791. This opera showcased both Stadler’s basset clarinet and basset horn in Sextus’ aria ‘Parto, parto ma tu, ben mio’ (B flat basset clarinet) and Vitellia’s rondo ‘Non più di fiori vaghe catene’ (basset horn in F). Furthermore, Stadler performed the Mozart concerto K.622 in Prague on October 16th, 1791, demonstrating his basset clarinet in A. Sebesta argues that, even if Strobach had moved away from Prague and was already living in Carlsbad by this date, the distance of approximately seventy miles would not necessarily have prohibited Strobach from travelling to hear these performances.

Circumstances suggest that upon hearing Stadler perform in Prague, the young, impressionable Strobach felt compelled to construct similar instruments; without question, Strobach maintained a lifelong interest in basset horns with a globular bell.

Strobach’s extant basset horns show a mix of straight and angled barrels. They further differ from the Riga drawing in being angled at the top of the right hand section at an angle of 150°. Although the Riga drawing (which shows a basset clarinet in either B flat or A) does not share this feature, this was probably necessary in Strobach’s instruments to accommodate the extra length of an instrument in F. If Stadler’s basset horn was indeed the same shape as his basset clarinet, Lotz may have also used this device on his basset horn design for Stadler to accommodate the length of the instrument.

Basset keys - chromaticism

The key configuration of the instrument in the Riga programme cannot be clearly made out from the engraving. Speculation that the instrument may have had more

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than the standard five keys of the time (plus those for the basset extension) has been
taken primarily from a statement made by a writer in the Berlin *Musikalisches
Wochenblatt* of January 1792, after one of Stadler’s performances in that city.

Mr. Stadler has also added several notes to his instrument
by means of keys. However, the gain, through the added
keys, is not very great, because the instrument is almost
overladen with keys.\(^{71}\)

Shackleton has suggested that the sixth key for C#/G#, for which Lefèvre claimed
credit in his tutor, could easily have been added by other makers at the same time as,
or even before Lefèvre, evidenced by the description of a six-keyed instrument in Jan
Karel Rohn’s *Nomenclator artifex, et mechanismus* of 1768.\(^{72}\) The fact that this
work was published in Prague lends it particular relevance in this context.
Shackleton relates this directly to Lotz in saying, “Thus the developments made by
Stadler and Lotz may well have built on something somewhat more advanced than
the five-key clarinet.”\(^{73}\)

Lawson also suggests that Stadler’s instrument may have been in possession of more
keys than was usual for the time. “...it remains doubtful whether Stadler’s clarinet
was based on the widely-used five-keyed design discussed by Backofen and even by
Froehlich. In his favourite chalumeau register, clear production of b, c# and eb was
particularly difficult...”\(^{74}\) Lawson cites the extant six-key clarinets by Lotz’s pupil
Kaspar Tauber in the Shackleton Collection in Edinburgh (EUCHMI 4779 and
4798). These instruments do indeed have a sixth key providing C#/G#, mounted in a

\(^{69}\) Sebesta, “Strobach,” 61.
\(^{71}\) Quoted in Rice, *Classical Period*, 72.
\(^{73}\) Shackleton, “Clarinet,” 393.
metal saddle – a design identifiable with Lotz and those he trained. However, this same design makes it virtually impossible to ascertain if this key was an original part of the instrument or a later addition, as both instruments make use of metal saddles to mount other keys as well. In the case of both these instruments, all the springs for the other keys are attached to the body of the instrument – another characteristic shared with Lotz – whereas that for C#/G# is attached to the key itself. It is interesting to note that, where Lotz fitted keys in saddles with springs, the spring is securely attached underneath the saddle, between the seat of the saddle and the body of the instrument. This can be seen on the two keys on the cor anglais in the Kunsthistorisches Museum in Vienna (KHM: SAM 342). It is also possible that the C#/G# keys present on the Tauber clarinets were originally added by the maker, and that their curved shape made it impossible to effectively mount a spring attached to the body of the instrument. The evidence of these particular keys (also discussed in Chapter 2) should therefore not be considered conclusive.75

Lawson’s statement regarding the B natural, C# and E flat in the chalumeau register must also be taken as the viewpoint expressed by a player initially trained on modern instruments, used to the ease of keys for the reliable production of these notes. Players of Stadler’s generation had never experienced an instrument with keys for these notes and were therefore trained from the beginning of their education in their production using half-hole technique or forked fingerings. It is highly likely that these notes contained little if any difficulty for players of the time, particularly if these players were equipped with a skilfully tuned instrument, such as those

74 Lawson, “Basset Clarinet,” 498.
75 However, it should also be noted that the C#/G# keys on the respective instruments are very similar in design, suggesting they were added by the same person.
produced by Lotz. Furthermore, it is noticeable when playing on instruments which share characteristics with Lotz, such as a basset horn by Raymund Griesbacher in the Edinburgh University Collection of Historic Musical Instruments (EUCHMI: 4796), that the large tone holes of instruments such as this make the use of the half-holing technique more reliable than on modern replicas, where the tone hole size is generally considerably reduced. It is the author’s experience that Viennese instruments of this time produce the ‘problem’ notes in the chalumeau register with relative ease and accuracy.

There is no doubt that the C#/G# key was not a difficult addition to make, and that Lotz was clearly an innovator to whom such a challenge would not be great. However, none of Lotz’s surviving clarinet-type instruments (clarinet and basset horns) possess an original sixth key and although the instrument under discussion here was clearly unique, it seems difficult to imagine that, were the C#/G# key amongst the innovations on this instrument, Lotz would not apply this simple addition to his instruments which were generally available. Nor do his extant instruments of other kinds, such as bassoons and cor anglais, show any evidence that Lotz was an innovator as far as the addition of keys for notes already available on the instrument was concerned. It is therefore probable that the remark of the Berlin writer quoted above was in reference to the additional keys required for the basset notes. Rice shares this view. This seems further plausible when the wording of the Berlin writer is examined. Other notes on the clarinet, which may have been considered to benefit from the addition of keys for their production, already existed

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76 This issue was considered at length in the author’s presentation to the Annual Meeting of the American Musical Instrument Society in Washington DC, May 2010, titled “Experiencing Authenticity: an examination of accuracy in modern copies of historic wind instruments”.

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on the instrument in the form of forked or half-holed fingerings, and would therefore be considered to have been ‘improved’ rather than ‘added’.

If we assume then that Stadler’s basset clarinet was a basic five-key instrument with the addition of four keys operated by the thumb on the dorsal side of the instrument for the production of the basset notes, we can now examine how and when it came to take this form. The first reference to Stadler’s new instrument occurs in a concert programme of February 20th, 1788:

> Spielt Herr Stadler einer Variazion auf der Baß-Klarinet; einem Instrumente von einer neuen Erfindung, und Verfertigung des k.k. Hof-Instrumentenmachers, Theodor Lotz; dieses Instrument hat zwei tiefe Töne mehr, als die gewöhnliche Klarinet.  

[Mr. Stadler plays a variation on the Bass clarinet; an instrument of new invention, and made by the Imperial Court instrument maker Theodor Lotz; this instrument has two tones more than the usual clarinet.]

Interestingly, this is the only reference to Lotz having made the instrument. The fact that Stadler frequently laid sole claim to the invention will be discussed below.

As Lawson points out, the announcement refers to only two lower tones, therefore suggesting that the extension on this instrument was diatonic. He goes further to suggest that the instrument was pitched in B flat. The Variations mentioned in the programme have not survived, but Lawson speculates that it may have been a work of Stadler’s own composition or perhaps the anonymous B flat Concerto, whose solo part survives in the Vienna National Library (MS 5856) with additional cadenzas in

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77 Rice, Classical Period, 72.
78 Lawson, “Basset Clarinet,” 487.
80 Lawson, Mozart Clarinet Concerto, 25.
an unidentified hand (Lawson speculates Stadler’s) which include basset C and D.\textsuperscript{81} If a downwards extension to the regular clarinet was the starting point for the innovations of Lotz and Stadler, then the choice of the B flat instrument would be a logical one. However, it will be suggested later that the initial impetus for these innovations may have arrived from alternative inspiration.

It is generally considered that the next step in the route to chromaticism in the basset register was reached with the addition of a low E flat. This had its parallel with the basset horn, whose extension must have provided a basis for Lotz’s innovations with the basset clarinet. Certainly a low E flat was required for the second basset horn part of the Grand Partita K361 and the Rondo fragment K581a, which is scored for the same instruments as the Quintet K. 581 and is thought to have been a draft for an alternative finale.\textsuperscript{82} It is interesting to note that the Rondo is for an instrument pitched in A, further suggesting, as Lawson theorises, that Stadler’s A basset clarinet was the instrument with a fully chromatic extension. Although the basset notes are used sparingly, particularly in the former work,\textsuperscript{83} these are still employed in prominent passages and in a manner in which alteration or substitution could not easily be achieved, as was noted earlier in several examples of Mozart’s writing for the basset horn.

It is now generally agreed that Stadler’s instruments achieved full chromaticism in the basset range by 1790.\textsuperscript{84} In his book, \textit{Mozart Clarinet Concerto}, Lawson traces the addition of notes to the instrument through the repertoire for which Mozart wrote for it, pointing out that works composed before 1790, such as the aria ‘Ah lo veggio’

\textsuperscript{81} Lawson, \textit{Mozart Clarinet Concerto}, 25. This work is listed in the Supplement XV (1782-4) of Breitkopf Catalogue ascribed to Michel. (Lawson, \textit{Mozart Clarinet Concerto}, 25).

\textsuperscript{82} Lawson, \textit{Mozart Clarinet Concerto}, 29.
from *Così fan Tutte*, contain only diatonic basset notes.\(^{85}\) Interestingly, ‘Parto, parto’ from *La Clemenza di Tito* (1791), composed for a B flat clarinet with extended range, only makes use of diatonic basset notes,\(^{86}\) further supporting the hypothesis that perhaps it was only Stadler’s A clarinet that was fitted with a chromatic extension.

The first contemporary allusion to a fully chromatic extension on Stadler’s instrument occurs in the *Berlin Musikalische Korrespondenz* of 1790, which reported that Stadler had,

...improved his instrument and added notes at the bottom, so that e is no longer the lowest note, but rather the c below this. He also takes the intervening c# and d# with amazing ease.\(^{87}\)

Note there is now no reference to Lotz as maker of the instrument. As Lotz was still alive at this date it would be logical to assume that, if he were aware of such announcements, he would be displeased to not receive the credit for his instrument. It is perhaps therefore interesting to note that the only reference to him as the maker of the instrument was in a Viennese announcement, whereas those more further afield (where Lotz was less likely to hear of them) only mention Stadler as the innovator. These include concert notices in Riga and St. Petersburg.\(^{88}\) Poulin suggests this as evidence that the addition of the chromatic basset keys was Stadler’s

\(^{84}\) Rice, *Classical Period*, 72.
\(^{87}\) Lawson, *Mozart Clarinet Concerto*, 27.
\(^{88}\) Poulin, “Recent Discoveries,” 113; Poulin, *Basset Clarinet*, 53.
own, but it is suggested here that this was pure self-promotion on Stadler’s part, when he could safely claim the innovations as his own without fear of repercussion.

**Terminology**

The first use of the term basset clarinet occurred in 1796 when J.F. von Schönfeld, after noting that the Stadlers played an instrument called the basset clarinet, described it as “...difficult to handle in its production of tone, the delicacy of expression, and the facility to have it perfectly under control.” Lawson and Rice both take this description of the instrument’s difficulty to actually mean the basset horn, however period reconstructions of basset clarinets often prove no less difficult or truculent to play than basset horns. The factors which combine to make the basset horn a difficult instrument to play – a long tube length combined with a narrow bore and relatively small tone holes – are also present on the basset clarinet. However, the fact that Schönfeld describes both brothers as playing the instrument does suggest the basset horn, as there is no record of Johann having performed on the basset clarinet.

The term basset clarinet, therefore, remains an ambiguous one. The reference from Schönfeld quoted above is the only contemporary source to utilise the term, and it appears likely it was not in reference to the instrument under discussion here. The term was then adopted by Jiří Kratochvíl, a pioneer of the instrument’s revival in the 20th century, to demonstrate its relationship to the basset horn. Contemporary concert reports, newspaper announcements and dictionary entries generally refer to the instrument as ‘Inventions-Klarinette’ or simply ‘a clarinet of Stadler’s invention’.

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89 Poulin, *Basset Clarinet*, 187-188.
On the list of debtors remaining after Lotz’s death, the instruments appear as “2 neu erfundene Pasklarinet”, for which Stadler owes the not insubstantial sum of 162 gulden$^{93}$ (approximately £1,361). In the German script of the 18th century, B and P may often be found used interchangeably and Pasklarinet may therefore be a considered as Baßklarinet, which term was used on the 1788 concert announcement of the instrument’s first performance, quoted above. The term on the list of debtors most probably comes from Raymund Griesbacher, who played a significant role in the legal proceedings following Lotz’s death, or from paperwork (such as receipts) prepared by Lotz himself. As Griesbacher apparently had such a close association with Lotz (discussed more fully in Chapter 1), it may be assumed that this was the term Lotz himself used when referring to the instruments. It is of course, not a bass clarinet according to our understanding of the term – that is, an instrument a full octave lower than the regular clarinet – and the adoption of the term ‘basset clarinet’ assists in identifying the two instruments in modern parlance.

Evidence as to how Stadler himself thought of his instruments may be found in a letter from Stadler to the theatre director in Bremen, Danielle Schütte, in 1794.$^{94}$ The principal object of Stadler’s letter is to organise possible performances in Bremen as part of his tour, but with the additional aim of commissioning an instrument from the local maker Johann Burchard Tietzel. Stadler refers to this instrument as ‘eine neue

$^{93}$ Wiener Stadt- und Landesarchiv, Herrschaften Konradswörth 1-90, 2.1.1.103.A1 – Abhandlungen 1 (1744) 1789-1850.
Art Clarinette d’amour⁹⁵ [a new type of clarinette d’amour]. The use of the term clarinette d’amour is an interesting one and should be considered more thoroughly.

Poulin has suggested that the commission from Tietzel may have shown that Stadler desired to add a C clarinet to his instruments with an extended range, or additional instruments in A and B flat.⁹⁶ In either case, the use of the term clarinette d’amour suggests that Stadler perhaps thought of his instrument as clarinette d’amour with an extended range rather than a basset clarinet.

The similarities to the clarinette d’amour shown by the instrument in the Riga engraving have been remarked upon briefly elsewhere,⁹⁷ but the possible classification of this instrument as an extended clarinette d’amour will be more fully examined here.

Hoeprich suggests that, as Stadler’s instrument had an extended range, it cannot be considered as a clarinette d’amour.⁹⁸ However the instrument does share some other defining characteristics with the clarinette d’amour. The most noticeable of these is the bulbous bell. It must be pointed out, however, that despite first appearances, the bell of Stadler’s instrument differs in some respects from that of the clarinette d’amour. Firstly, its shape is much more angular, while that of the bell of the clarinette d’amour is usually smoothly rounded or pear-shaped. Secondly, the bell of the clarinette d’amour runs straight down from the body and is open at the end, whereas that of Stadler’s instrument is joined to the body by an angled knee and is plugged at the end, with a side vent hole. Nonetheless, this does not necessarily

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⁹⁷ Poulin, “Recent Discoveries,” 113.
⁹⁸ Hoeprich, The Clarinet, 374.
discount the *clarinette d’amour* as a starting point for the inventions of Stadler and Lotz.

Another characteristic of the *clarinette d’amour* is the brass crook joining the mouthpiece to the body of the instrument. This may equally take the form of a curved wooden barrel,\(^9\) closely resembling the design of the instrument seen on the Riga engraving.

Furthermore, the fact that Stadler’s chromatic instrument was pitched in A links it again to the *clarinette d’amour*, which has been recorded in a greater variety of pitches than the basset horn, including A.\(^{100}\) Finally, Stadler does not refer to the instrument as simply a *clarinette d’amour*, but that of a ‘new kind’, suggesting the instrument would have some differences to the standard instrument. It must be acknowledged, however, that this is the only use of the term with regards to Stadler’s instrument, and may indeed indicate that Stadler was pursuing a completely new experiment with Tietzel.

Another factor to consider is the bore shape of the instrument made by Lotz for Stadler. Without an extant example it is impossible to determine whether or not it flared like a clarinet or was straight like Lotz’s basset horns. It is interesting to note, however, that the bores of *clarinettes d’amour* do not tend to flare in the same manner as clarinet bores, and neither do the bores of most basset horns by Strobach made in a similar form (although localized enlargements may be found in the angled sections of the bore). It may be considered that the bulbous bell shape of these instruments provided the bore enlargement necessary which, on the regular clarinet, was provided by the conical shape in the lower third of the instrument. Presuming

Lotz’s basset clarinet followed the same principle, as modern reconstructions of the instrument do, this likens the instrument more to a clarinette d’amour with an extended range rather than a clarinet with an extended range.

There is evidence to suggest that the classification of instruments in the 18th century was not as clearly defined as today, and that terms such as clarinette d’amour and basset horn, which are quite separate to us today, may have been relatively interchangeable. A prime example of this is J.C Bach’s designation of three clarinetti d’amore in his two Mannheim operas Temistocle (1772) and Lucio Silla (1774). Maunder has convincingly argued in a Galpin Society Journal article that these instruments were actually intended as a trio of basset horns in D.\textsuperscript{101} This is primarily achieved through an examination of the transposition and voicing of the parts, but the instruments appearance as a trio – the most common manifestation of the basset horn as opposed to the clarinette d’amour which seems to have almost invariably appeared in pairs – further supports the conclusion that the instruments are basset horns, despite the designation. Similarly, the Deutsche Encyclopädie of 1781 contains a description of clarinettes d’amour which also would seem to apply more accurately to the basset horn:

Clarinette d’amour are those clarinets newly introduced by 3 clarinetists of the Nassau-Weilburg court. They are deeper than the ordinary clarinet and are in fact pitched in G. The third is like a bassoon, and creates a splendid effect. It snarls like a metal gamba stop in an old organ.\textsuperscript{102}

The use of three instruments, and the particular reference to the low pitch of the third instrument, implies a trio of basset horns rather than clarinettes d’amour (the

\textsuperscript{100} Rice, “Clarinette d’Amour,” 97.  
\textsuperscript{102} Quoted in Rice, “Clarinette d’Amour,” 99.
significance of this statement in reference to Lotz was discussed in Chapter 1). These opposing examples contribute to show that, at least in the 18th century, the terms *clarinette d’amour* and basset horn may have been used to apply to either instrument. It is therefore suggested here that the instrument Lotz made and which was played by Stadler was considered an amalgam of the clarinet, basset horn and *clarinette d’amour.*

Although Pamela Poulin states that it is unknown if the commission from Stadler to Tietzel was actually fulfilled, the wording of the letter ‘...it turned out very well’\(^1\) suggests that it was. Interestingly, although Stadler approached Tietzel, the wording of the letter – “…according to his [Tietzel’s] own specifications…” – also implies that the design was Tietzel’s own. This is perhaps an interesting parallel with Stadler’s collaboration with Lotz and may suggest that the design of the basset clarinet, although later wholly claimed by Stadler, was in fact Lotz’s own.

**Stadler and Tietzel**

Johann Burchard Tietzel was born in Ottersberg, in the vicinity of Bremen.\(^2\) Although no record has been found of his birth, this must have occurred around 1755, as the record of his death in 1821 gives an age of sixty-six years. No instrument by Tietzel is known to have survived. However, two advertisements placed by Tietzel in the *Bremen Wochentliches Nachrichten* of 1797 and 1801 give some insight into his areas of activity. Amongst the items he offers for sale are a yarn-spool of a previously unknown kind, three pipe-reeds also of a new invention, two ivory flutes (1797 advertisement), two ivory candlesticks, another ivory flute

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\(^1\) Quoted in Poulin, “Recent Discoveries,” 116.
\(^2\) Noted in the record of Tietzel’s record of residency in Bremen. My thanks to the staff of the Staatsarchiv Bremen for their assistance in finding this information.
with three middle joints and two silver keys, a ladies tortoiseshell walking stick and a
further two pipe-reeds of ivory (1801 advertisement).\textsuperscript{105} Clearly Tietzel was not
exclusively a maker of musical instruments. Indeed, in the Bremen address books he
is invariably listed as \textit{Kunstdrechsler} (ornamental turner) rather than as a dedicated
instrument maker.\textsuperscript{106} The emphasis on ivory objects is particularly interesting. A
long running legal dispute, the papers relating to which are preserved in the
Stadstarchiv Bremen, over Tietzel’s right to employ apprentices was administered by
the bone and ivory turners guild. This suggests that Tietzel would legally have had
the right to work only in ivory, as, had he been a wood turner, his legal dispute
would have been administered by the wood turner’s guild. If Stadler was interested
in collaborating with Tietzel, it may suggest that he was also interested in
experimenting with ivory as a material for his new instrument.

The \textit{Bremen Wochentliche Nachrichten}, which had provided information on Tietzel’s
other activities, was missing from the archival sources for the year of Stadler’s visit,
and therefore could not be searched for any announcements relating to the
collaboration between Tietzel and Stadler.

\textbf{Stadler and Lotz}

Stadler must have been acquainted with Lotz prior to his appointment as Court
Instrument Maker in 1785, as attested by the bills for clarinets provided by Lotz to
the \textit{Hoftheater} in 1782-1783 (see Chapter 2). Whether or not Stadler was already
aware of Lotz and the quality of his instruments, and so advised on their purchase, or
if Stadler became aware of Lotz through this purchase is impossible to determine.

\begin{footnotesize}
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\begin{footnotes}
\footnotes{105} Bremen Wochentliche Nachrichten No. 7, Monday January 30^{th}, (1797), no page number; Bremen Wochentliches Nachrichten No. 79, Monday October 12^{th}, (1801), no page number.
\end{footnotes}
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Certainly Lotz would have become more closely acquainted with Stadler and Mozart after his arrival in Vienna through his involvement with the Freemasons, as detailed in Chapter 1, and this collaboration resulted in the basset clarinet and Mozart’s works for this instrument. Whether or not the collaboration was based on mutual friendship or simply professional respect is another question. It must firstly be remembered that Lotz was a Protestant, whereas both Mozart and Stadler were Catholic. Daniel Freeman suggests Mozart’s faith was strong, as evidenced frequently in his writings, and this may have provided something of a social barrier between Mozart and Lotz. The depth of Stadler’s faith and its influence on his life is less easy to determine. Nevertheless, the fact that he apparently happily laid sole claim to the innovations clearly undertaken by Lotz suggests he cared little for the reputation or memory of his collaborator. Rather than the romantic ideal of three artists striving together for perfection, the relationship between Mozart, Stadler and Lotz in reality was perhaps more one of three professional individuals working towards a common goal and who could each contribute in a different way through their own unique talents, regardless of personal persuasions.

Conclusions

This chapter has demonstrated that, while the description of the basset horn attributed to Lotz by Cramer in 1782 is clearly erroneous, the claim he was an improver of the instrument is not. Lotz may be considered to have altered the shape from a right angle to that of 120°, added the basset note for D and made at least one instrument with a chromatic basset range, as well as numerous small adjustments, such as the

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offset T3 and marked joints which together created a sophisticated and attractive instrument. When compared with instruments by other significant contemporary makers, such as Doleisch, although undoubtedly enjoying a measure of popularity at the time, the refinements of the instruments by Lotz become even more apparent. The improvements and additions made by Lotz indicate great attention to detail and personal experience as a player, as not only the musical but the physical and practical qualities of the instrument have been considered and improved upon.

The localised impact of Lotz’s innovations is clearly seen in basset horns by later generations of Viennese makers, such as Harrach and Merklein, and may be extrapolated from documentary evidence of Scholl’s interest in working with lower pitched clarinets with an extended range. But the influence of Lotz’s design clearly spread further afield, with similar instruments appearing as far away as St. Petersburg and well into the 19th century.

Similarly, Lotz’s innovations with Stadler’s instrument, which present day writers have termed the basset clarinet, also influenced makers throughout Europe for several generations, as they adopted the shape or key configuration of this instrument. While Lotz doubtless sent many instruments around Europe to customers, the evidence suggests Stadler’s instrument was one of a kind and the most likely spread of his innovations was probably achieved by Stadler’s tour of 1792 – 1794, evidenced by the fact that some cities which he visited are represented by extant examples of instruments bearing similarities with those of Lotz by local makers. It has also been suggested that Lotz’s starting point for this instruments was more likely the clarinette d’amour or basset horn rather than the regular clarinet.

107 Freeman, *Mozart*, 141.
Chapter 4

Bassoons and Contrabassoons

Introduction

To date there has been no organological study undertaken on the extant bassoons by Lotz. As was outlined in the Introduction, most of the seminal literature on the history and the development of the bassoon has been written without any reference to Lotz or his surviving instruments. The conclusions drawn and observations made in these works, therefore, are reached almost entirely without reference to Lotz’s instruments. Several of the bassoons made by Lotz discussed in this chapter have not been studied before. The aim of this chapter is to analyse several of the surviving bassoons in comparison to other contemporary instruments in order to determine if the innovative approach to instrument making shown in his surviving clarinet and basset horns was also applied to bassoons. In order to do so, it will use many of the same parameters and techniques used in the comparative study of clarinets and basset horns, and in so doing will elucidate which of these techniques is useful and appropriate for yielding comparative information on bassoons – another area of research which is not thoroughly explored in the bassoon literature.

Despite little interest in Lotz’s bassoons by modern researchers, he had a reputation as a skilled bassoon maker during his lifetime.1 With seven extant examples, it seems surprising therefore that the output of his workshop is primarily judged today by the surviving clarinet and basset horns, and that makers have not adopted his

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1 Hoeprich, The Clarinet, 353.
bassoons as a basis for copies of historic instruments when the clarinet and basset horns are so universally embraced. The following list comprises extant bassoons by Lotz:

<table>
<thead>
<tr>
<th>Bassoon</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bassoon, Georg-August-Universität Göttingen, 551</td>
<td></td>
</tr>
<tr>
<td>Bassoon, Narodní Muzeum, Prague, E_1834</td>
<td></td>
</tr>
<tr>
<td>Bassoon, Musée Unterlinden, Colmar</td>
<td></td>
</tr>
<tr>
<td>Bassoon, Pokrajinski Muzej Ptuj, Slovenia, GL 28 S</td>
<td></td>
</tr>
<tr>
<td>Bassoon, Seidl Private Collection, Prague</td>
<td></td>
</tr>
<tr>
<td>Bassoon, Pirker Private Collection, Vienna</td>
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<tr>
<td>Bassoon, Wolf Private Collection, Kronach, Germany</td>
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</tbody>
</table>

As with all the other instruments in this dissertation, the examination of external features such as key characteristics and their comparison to other instruments also aims to highlight any national styles which may have impacted on Lotz as a maker and give an indication of where he learned his skills, as well as determine what influence his output had on makers of the following generation. August Grenser is particularly important in the comparative aspects of this chapter as the maker most frequently copied by bassoon makers today.

In order to effectively collect data for the comparisons which follow in this chapter, it first needed to be established which aspects of bassoon design and construction would yield the required information. These have not been clarified as distinctly as those for clarinet. However, the following parameters have been employed in this study: bore profile with particular attention to the bell; tone hole size (measured on both latitudinal and longitudinal planes from which the total surface area is calculated); the relative position of the surface of the tone hole to where it enters the bore (indicating how diligent the maker has been in placing tone holes in the optimal position acoustically whilst also acceding to the physical limitations of players); overall conicity (the difference between the smallest and largest bore diameters...
divided by the distance between the two); and the external profile of the bell. Further identifying characteristics, such as key configuration and placement, mounting methods and external decoration were also observed and are included in the discussion below.

**Earlier Viennese bassoons**

The seven known extant examples of Lotz bassoons provided sufficient material for the comparative study to gain a clear impression of Lotz’s output in this area. Earlier Viennese instruments are less well represented, totalling five in all from the makers directly concerned in this study. An additional instrument by M. Deper (Harmoncourt private collection) has not been included in this number as it is yet to be conclusively identified as Viennese. The Viennese instruments include one from Matthias Rockobaur (Linz: Mu 117), and two each from Jakob Baur (Anonymous collection, Poland; Poznan: 1447) and the Lempp family (Yale: 3446.68; Vienna, TM: 22363). Nagy claims that neither of these two latter instruments are by Friedrich. As neither Friedrich nor Martin usually stamped their instruments with their Christian name or initial (with the exception of the two extant contrabassoons which can be conclusively attributed to Martin), it can be difficult to confidently assign an instrument to either the father or son. This issue is discussed in relation to each instrument in the appropriate sections below.

Despite the paucity of earlier examples of Viennese bassoons, it is not considered that this represents a lack of interest or skill in making the instrument in Vienna prior to Lotz’s arrival, as was suggested for clarinets and basset horns in Chapters 2 and 3.

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2 My thanks to Matthew Dart for guidance in this matter.
As the bassoon had been a standard instrument in many ensemble situations from at least the 17th century, there is no reason to expect this was not the case in Vienna. Indeed, for the years 1712 to 1740, Köchel lists eight individuals who served as bassoonists in the Hofkapelle. Furthermore, a number of advertisements and announcements placed by makers and sellers of instruments in contemporary newspapers and journals indicate a ready market for bassoons in Vienna prior to Lotz’s arrival there in 1785. These include two bassoons by Rockobaur - one left handed the other right handed - offered for sale by a copyist in 1774, and an advertisement placed by Friedrich Lempp in 1776 in which he offers bassoons. Lempp further outlines his ability to make bassoons in his petition for protection as an instrument maker to the Lower Austrian Government in 1768. A receipt from 1771 shows that Rockobaur supplied two bassoons to the Esterházy court in this year. The lack of early extant Viennese bassoons therefore is likely to be the result of external pressures rather than any lack of use or interest for the instrument.

**Chronological addition of keys**

The addition of the fourth key – A flat (the three-key baroque bassoon already having F, D and B flat keys) – to the bassoon is considered to mark its departure from earlier traditions in that it eliminates the necessity for half-holed fingerings. Paul White, in his article on early bassoon fingering charts, also suggests this key can be used in dating an instrument, as the earliest examples of this key are short and positioned high on the bore with a small vent hole, but during the 18th century the

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4 Köchel, Hof-Musikkapelle in Wien, 79.
5 Wienerisches Diarium, March 2nd, 1774, ‘Musikalien’ (no page no.); Wienerisches Diarium, November 16th, 1776, No. 92, Anhang, “Nachricht” (no page no.)
7 Steblin, “Viennese Woodwind Makers,” 44.
8 White, “Fingering Charts,” 73 – 74.
key became longer, was placed lower on the bore and had a larger vent hole. As with other wind instruments, the origin and date of the addition of keys to the bassoon is impossible to determine with any certainty, but fingering charts and tutors are possibly the most useful source in tracing this.

J.M. Hotteterre’s fingering chart of c1765 is the first to show the fifth key – E flat. In this chart the key is shown as operated by the left thumb, but was later moved by Grenser to be operated by the left little finger. According to White, the placement of this key is an indicator of national style – in France (where it is thought this key was first added) it was positioned on the dorsal side between the D touch and the wing joint; in England the key was placed on the other side of the D touch and in Germany it was mounted on the bass joint where it was operated by the left little finger. In Vienna, the key was usually similarly placed to French instruments. All the Viennese bassoons in this study conform to this.

The sixth key, for the right thumb, is thought to have been added to the bassoon very soon after the fifth, and is shown in fingering charts by Abrahame and Laborde

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9 White, “Fingering Charts,” 74.
10 White, “Fingering Charts,” 74.
11 Waterhouse, “Bassoon,” Grove Music Online, ed. L. Macey (Accessed 23/11/07), http://www.grovemusic.com. Waterhouse does not specify which Grenser is meant here. An instrument by August in Leipzig (Leipzig: 1376) dated 1782 has the E flat key positioned for the left little finger. Although the key is mounted in a brass saddle, thus making it a possible later addition, the layout of the keys for D and B flat on the dorsal side of the instrument, where this key would usually be placed, suggests no alterations have been made. It is curious, therefore, that the two later A. Grenser instruments in this study have the E flat keys returned to the dorsal side of the instrument for operation by the left thumb. This may have been a request from the players of the instruments, used to keys configured in the usual way. An instrument by Heinrich in the Museum Viadrina (FO: V-221J) also has the E flat key positioned for the left little finger. As White ascribes the positioning of the E flat key on the front of the instrument to Heinrich Grenser (White, “Fingering Charts,” 74), this key on the instrument by August in Leipzig (Leipzig: 1376), may have been a later addition by Heinrich himself.
12 White, “Fingering Charts,” 74.
13 White, “Fingering Charts,” 74.
14 According to White, this key is usually incorrectly named the F sharp key, but no 18th century chart indicates the use of this key in producing F sharp. Instead, Ozi’s 1787 chart suggests its use for $b''$
from around 1780. The only other significant additions in this century were one or two octave keys on the wing joint which facilitated playing in the upper register. These keys were first reported in France in 1787 and in Germany at approximately the same time, and were often added to existing five- or six-key instruments. The addition of the octave keys allowed makers to more precisely tune the tone-holes for the lower octaves as they no longer also had to function as vent holes for the upper registers.

As well as modifications in number and positioning of keys, the bore and outward appearance of the bassoon altered during course of the 18th century. The decorative mouldings found on the upper sections of baroque instruments, which often also served as mountings for the keys, disappeared and keys were instead mounted on individual wooden blocks or brass saddles. The bore shape also changed, with the bell profile becoming an inverted cone. Earlier instruments measured for this study displayed an almost cylindrical bore in the bell.

**Key shapes and mounting methods**

The bassoons in this study have between five and eight keys, and are all therefore representative of the standard instruments found towards the end of the 18th century. Those with more than five or six keys are, with few exceptions, standard five- or six-

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17 Waterhouse, “Bassoon,” Grove Music Online.
19 White, “Fingering Charts,” 75.
key instruments with one or two octave keys added at a later date. In most cases it is impossible to determine whether or not the octave keys are original or were added later. Notable exceptions are the bassoon by Tauber in Nuremberg (GNM: MIR 411), where the keys appear to be original due to the way in which the decoration on the body of the instrument accommodates the key heads, and the instrument by Bühner & Keller (MCA: 15/12), where the style of the keys and their seating exactly corresponds to the other keys on the instrument.

Plate 4.1. Detail of octave keys on bassoon by Kaspar Tauber (GNM: MIR 411).

Plate 4.2. Detail of dorsal side of bassoon by Bühner & Keller, showing consistency in key style between the two octave keys and other original keys. (MCA: 15/12).
Conversely, it may be supposed that the two octave keys on the bassoon by August Grenser (Leipzig: 1377) were added later, as their mounting and style do not correspond to the other keys, which are mostly made of bone (the one brass key is probably a replacement). Furthermore, all other August Grenser bassoons studied were standard five-key instruments. The octave and right thumb keys on this instrument are also the only keys to be mounted in brass saddles, suggesting all three may have been later additions.

Plate 4.3. Bassoon by August Grenser (Leipzig: 1377) showing contrasting key styles suggesting later additions.

The octave keys on the Lotz bassoons in this study show a mixture of styles, and it is therefore likely that few (if any) of these are original. Both instruments in Prague (Prague, NM: E_1834 and Prague: Seidl Collection) and that in Ptuj (Ptuj: GL 28 S) have either one or two octave keys. The octave keys on the instrument in the Seidl collection bear no similarity to the general style of Lotz’s keys, and are therefore probably later replacements. One octave key is missing on the Ptuj example, but the mount for the missing key remains. Both octave keys are mounted in brass saddles.
which are in turn mounted on a brass plate – a method entirely absent on all of Lotz’s other instruments, again suggesting a later addition. The octave keys on the Prague example (Prague, NM: E_1834) are also mounted on a brass plate, but in a different style to the Ptuj example, and are therefore also unlikely to be original. Considering the spuriousness of the octave keys on the Lotz instruments examined for this study it is concluded that Lotz produced mainly five- or six-key bassoons.

Plate 4.4. Detail of speaker keys and their mountings on bassoons by Lotz (Ptuj: GL 28 S and Prague, NM: E_1834).

Whether or not the right thumb keys on the bassoons in Prague (Prague, NM: E_1834 and Prague: Seidl Collection) are original is difficult to determine – as Lotz mounted all the keys in brass saddles there is little to distinguish later additions from the original keys, unless the saddles themselves are distinguishable from others on the instrument, as discussed above in reference to the octave keys. The right thumb keys on these instruments differ in style, but this may be the result of replacing a broken original key rather than an entirely new addition. The right thumb key on the
instrument in the Narodní Museum, however, is very similar in style to the E flat key, which in turn is identical to the E flat key of the bassoon in Göttingen (GAU: 551), suggesting that it (and indeed both E flat keys) are original. The right thumb key on the instrument in the Seidl Collection, however, has little in common with any of the other keys on Lotz bassoons, and is therefore likely to not be original, or a later replacement of an original key. The presence of the right thumb key on the two Prague instruments (and more particularly on the instrument in the Narodní Muzeum, due to its greater appearance of authenticity) may suggest that, of the extant bassoons of Lotz, these are the latest in date.

Plate 4.5. Detail of right thumb keys from bassoons by Lotz from Prague (Prague: Seidl Collection and Prague, NM: E_1834), with a detail of the E flat key from the Lotz bassoon in Göttingen (GAU: 551) showing the similarity in style with the second Prague example.
Some variation is also found in the shape of other keys on the Lotz bassoons, most notably E flat and F. The mounting for the E flat key – a brass saddle – is the same for all the Lotz bassoons in this study, but the shape and position of the key varied. The key head on three of the four instruments (Ptuj: GL 28 S; Prague, NM: 1834E, GAU: 551) is a flat, rounded spatula shape, and on two of the instruments (GAU: 551 and Ptuj: GL 28 S) is recessed on an angle to the raised platform supporting the other keys for the left thumb. This recessed mounting is also found on the instrument in the Seidl Collection. The instrument in the Narodní Muzeum, however, has the E flat key mounted on the raised platform which also holds the D and bottom B flat keys, without a recessed seating. The shape of the E flat key on the instrument in the Seidl Collection varies from the other instruments in that it has a flat square end to the key-head. Due to the similarity of this key on the first three instruments, it is suggested that these are the original keys added by Lotz and that the E flat key on the instrument in the Seidl Collection is a later replacement. The variation in the seating of the keys most likely represents a change in Lotz’s working practices. The only instrument to differ in this regard is the instrument in the Narodní Muzeum which, it was suggested above due to its apparently original right thumb key, may be a later instrument than the others in the study. The raised platform without a recessed seating for the E flat key may therefore be another indicator of a later date on Lotz’s bassoons. Further comparisons with the other extant Lotz bassoons, which, despite efforts to gain catalogue information or photographs of the instruments, were not consulted for this study, may assist in confirming this hypothesis.
The other key which demonstrates the most variation from instrument to instrument is the F key. Two of the instruments (GAU: 551 and Ptuj: GL 28 S) have identical F keys, and it is therefore likely that both these keys are original. The shape of the F key on the instrument in Prague (Prague, NM: E_1834) is markedly different and may well not be original. Alternatively, it may be that this was a different style of key adopted by Lotz. The F key on the Seidl instrument is most likely a modern replacement. The uniformity of shape of the A flat keys suggests these are all Lotz’s original design.

Plate 4.6. Details of F and A flat keys of Lotz bassoons, from left to right:
Prague, NM: 1834E; GAU: 551; Ptuj: GL 28 S; Prague: Seidl Collection.

Other makers also adopted individualistic styles and shapes for their keywork, which is usually most notable on the F and A flat keys. The Doleisch instruments in this study all have identically curved F and A flat keys without embellishment on the touchpieces. The use of plain rather than swallowtail touchpieces indicates a move away from baroque traditions, where this key’s design originally allowed the instrument to be played with either hand uppermost. Doleisch’s keys are also often decorated with grooves and notches towards the key head.
Plate 4.7. Bassoon by Doleisch (Prague, NM: 2515E) showing the simple shape of the touchpieces for the F and A flat keys, with decorations along the key shank.

Taubers designs for these keys are also very similar for all the instruments in this study, with one exception. The highly decorated example in Nuremberg (GMN: MIR 411) has a key configuration for the F and A flat keys similar to the instruments by Lotz examined above, with a swallowtail touchpiece for the F key. Given this key design’s association with earlier styles, it may indicate that this instrument predates the other Tauber bassoons in this study. It will also be noted that the key head (and so also the tone hole) for the A flat key sits higher in relation to the F key on the instrument in Nuremberg, also an indicator of an earlier date as identified above. The museum dates the instrument to c1815, but it is suggested here that it is more likely to date from the last years of the 18th or first years of the 19th century.
Plate 4.8. Detail of F and A flat keys for Tauber bassoons (GNM: MIR 411; Florence, GdA: 146; Berlin: 1873 and MCA: 15-8) showing the earlier style of key shape on GNM: MIR 411. The latter two instruments are high octave bassoons.
A similar key shape on the touchpieces to the three later bassoons shown above can be found on the bassoon by Lempp at Yale (Yale: 3446.68). As stated earlier in this chapter, the instruments by Friedrich and Martin Lempp are usually not distinguished by a Christian name or initial on the stamp, and this is also the case for this instrument. However, due to the style of the F and A flat keys, which has been shown above to be associated with Viennese instruments of the first two decades of the 19th century, as well as details of the stamp and other aspects of the instrument which will be discussed in further detail later, it is suggested here that Martin, not Friedrich (as suggested by Nagy22), is the maker of this instrument. The Lempp bassoon in the Technisches Museum in Vienna (Vienna, TM: 22363) has no surviving keys.

Plate 4.9. F and A flat keys of the bassoon by Lempp (Yale: 3446.68), showing similarity in touchpiece shape to three of Tauber’s instruments.

August Grenser is the only maker to display significant inconsistency with key shapes from instrument to instrument. Although all the F keys on the bassoons in

this study have swallowtail touchpieces, the design of these varies. However, the bassoons in Frankfurt (FO: V-178J) and Leipzig (Leipzig: 1376) have identical swallowtail touchpieces. There is a strong similarity between all other keys on the instruments. Grenser employed broader, flatter keys than those used by Viennese makers and, while Viennese makers show a mixture of teardrop- and horseshoe-shaped key heads on each instrument, Grenser generally employed one of two shapes for every key – either square with bevelled corners or horseshoe-shaped. The two styles never appear together on the same instrument.


The earlier Viennese makers, such as Rockobaur and Friedrich Lempp employed a combination of brass saddles and wooden blocks and rings for mounting the keys on their bassoons. The keys on the front of the instrument are usually mounted in brass
saddles, while the three for the left thumb on the back of the instrument are mounted in wooden blocks. This may be a continuation of the baroque tradition, where the keys mounted on the bass joint were pivoted in the decorative mouldings turned around the circumference of the section. In the case of instruments by Rockobaur, Baur and Friedrich Lempp the mouldings have been dispensed with, leaving only the raised block for the key mount.

August Grenser mounted keys almost exclusively in wooden blocks, also without the decorative addition of turned rings. Jakob Baur is the only one of the earlier Viennese makers to also exclusively mount bassoon keys in wooden blocks. It is likely that the two octave keys and right thumb key present on this instrument are later additions, as the styles of the keys do not match the keys mounted in wooden blocks. Extant bassoons by Doleisch also make sole use of wooden blocks for key mountings.

Lotz, and indeed all the later Viennese makers in this study, including his two pupils Tauber and Scholl, mounted all the keys on their bassoons exclusively in brass saddles set into the body of the instrument. It was noted in Chapters 2 and 3 that Lotz also adopted this method for mounting the keys on clarinets and basset horns. As discussed in the context of these instruments, this reduced the labour required for each instrument by eliminating hand-shaping. As a large element of bassoon making lay in hand-shaping, most particularly for the oval butt, flat platform of the bass section and swelling of the wing section, mounting keys in brass saddles would offer a minimization of work in an already labour intensive task. The use of brass saddles may have had a further practical application in that brass was unlikely to break and would be easy to replace if it did so. Wooden blocks, however, were prone to
breakage, particularly when manipulating the pins in the key pivot points, and would be difficult, if not impossible, to repair or replace. Furthermore, brass saddles would not be susceptible to swelling or shrinkage brought about by changes in environmental conditions. As makers such as Doleisch and Grenser only mounted their keys in wooden blocks, and earlier Viennese makers mixed wooden blocks with brass saddles, it would seem that Lotz was the first to apply brass saddles to all keys of the bassoon. This was a practice which was carried through to the following generation of Viennese bassoon makers by his pupils, Kaspar Tauber and Franz Scholl.

Comparisons – bore profile

The bore profile of the bassoons in this study did not show the same consistency within each makers output as was displayed in Chapter 2 with clarinets. This is demonstrated in the following graphs. Dotted lines represent sections of the bore to which no access could be obtained for measurements, such as the descending bore of the butt section. Where the cork was missing from the end of the butt and the whole instrument could be measured, the line is unbroken.
Graph 4.1. Bore profiles for three Lotz bassoons measured for this study.

Graph 4.2. Bore profiles for bassoons by Franz Doleisch.
Although roughly following the same general shape, each instrument displays localised individual variations in the bore. There appears to be a greater attempt at consistency in the instruments by Doleisch, while the greatest consistency can be observed in the bassoons by August Grenser. The most significant variation amongst these instruments can be detected in the profile of the bell. Due to the general lack of consistency within each makers output, little can be gleaned from a comparison of the bore profiles of the instruments.
However, in order to ascertain if such a comparison could yield any results, one instrument each from the above three makers was selected – for August Grenser and Doleisch two instruments were selected which most closely approximated to Lotz’s years of activity – and were placed together on the same graph. The result showed that, if any comparisons are to be made, the instrument by Doleisch shows greater similarities with the Lotz bassoons than the instrument by Grenser.

**Graph 4.4. Comparative graph showing bore profiles for bassoons by Lotz, August Grenser and Franz Doleisch.**
If the bore profile from the bassoon by Lotz’s pupil, Kaspar Tauber, is added to the graph of Lotz bore profiles, it can be seen that the Tauber instrument more or less remains close to the values of the parameters of the Lotz instruments (apart from the bell, which will be discussed in more detail shortly), but nevertheless follows its own pattern.

Graph 4.5. Bore graphs of bassoons by Lotz and Tauber.
If the same Tauber instrument is compared with the Doleisch examples, it can be seen that it significantly exceeds the upper range of the Dolesich instruments, as well as maintaining a more steady expansion in the region of the window. There are some similarities between the bell of the Tauber example and one Doleisch instrument (Prague, NM: 2515E), which will be discussed in more detail later.

**Graph 4.6. Bore profiles for bassoons by Kaspar Tauber and Franz Doleisch.**

![Bore profiles graph](image)

Interestingly, when the bassoon by Tauber is compared to the bassoons by August Grenser the similarity is quite striking, despite the fact that the Grenser instruments are all considerably earlier than the Tauber example. Tauber is also considered a reformer of the bassoon, and the evidence in this graph would indicate that he aimed for, and achieved, similar results to August Grenser. Indeed, Tauber appears to have achieved an even smoother bore profile, with fewer localised perturbations than any of the Grenser instruments. The bell of the Tauber bassoon is the only notable departure from the pattern established in the Grenser instruments.
These graphs suggest that Tauber and August Grenser were more actively pursuing improved working methods in bassoon design than Lotz, achieving a smoother bore profile and greater consistency in bore shape around the window in the butt section. In comparison to his contemporaries – Dolesich and August Grenser – Lotz appears to have followed an approximately similar bore shape and size, although with individual perturbations along the length of the instrument. The following graphs will attempt to begin to establish whether or not Lotz’s instruments owed anything in their bore shape to earlier Viennese bassoons, particularly those by Rockobaur and Jakob Baur.
Firstly, a comparison of the bassoons by Rockobaur (Linz: Mu 117) and Baur (Poznan: 1447),\textsuperscript{23} whom it will be remembered from Chapter 1 were connected both professionally and personally, show, apart from a difference in bell shape and a slight difference in length, considerable similarities. As Baur was Rockobaur’s apprentice, this is not surprising. The difference in the bells will be discussed later.

**Graph 4.8. Comparative graph of bassoons by Rockobaur (Linz: Mu 117) and Jakob Baur (Poznan: 1447).**

By adding the bore profile of the Friedrich Lempp bassoon – another near Viennese contemporary – to the graph strong similarities between all three instruments are observable, despite the shorter length of the Lempp bassoon. Also note that the Lempp bassoon has a much narrower bore at the window (here represented by a large green dot in the dotted line – the ascending bore of the butt section was inaccessible as the bass section had fused to it) than the other two examples.

\textsuperscript{23}The measurements for this instrument were kindly provided by Matthew Dart.
Graph 4.9. Comparative graph of bore profiles of bassoons by Rockobaur, Jakob Baur, and Friedrich Lempp.

A comparison of the Rockobaur bassoon with instruments by Grenser, one of which dates to Rockobaur’s lifetime, also demonstrates some similarities, although the largest bore diameter of the Rockobaur instrument exceeds all those of the Grenser bassoons. The following graph suggests that bassoon making in Vienna at this time was little different to bassoon making in Germany.

Graph 4.10. Comparisons of bassoons by Rockobaur and August Grenser.
When compared with Lotz bassoons, it can be observed that the bassoons by Lotz consistently demonstrate a significantly narrower bore diameter in the upper parts of the instrument (that is in the ascending butt and bass sections) than the Rockobaur example. This was also observable in Graph 4.4 in the comparison between August Grenser and Lotz instruments. This indicates that Lotz was pursuing a narrower bore than his predecessors in Vienna, and also narrower than that of his contemporaries in Germany. The same tendency is also exhibited in instruments by Doleisch.

**Graph 4.11. Comparative graph of bassoons by Lotz and Rockobaur.**

![Graph 4.11](image)

Finally, to further substantiate the claim that the Lempp bassoon in the Technisches Museum in Vienna is by Friedrich and that in Yale by Martin, the following graph shows the larger bore size in the upper part of the instrument in the Vienna example, as was seen in instruments by Rockobaur and Baur, whilst the instrument in Yale has the narrower bore associated with later makers such as Tauber.
Graph 4.12. Comparative graph of bore profiles of bassoons by Friedrich and Martin Lempp.

One characteristic which may be observed in the above graphs and commented on in greater detail is each maker’s treatment of the window. It can be seen from the graphs that in almost all cases the bore diameter at the window significantly exceeds the surrounding bore diameters. This is most noticeable in the Lotz example in Göttingen (GAU: 551), where there is a difference of almost 20mm between the bore diameter at the window and the first bore measurement of the ascending bore of the butt. The Doleisch instrument in Leipzig (1370) also has a significant difference of 13.2mm between these two measurements. The instruments by August Grenser, however, tend towards a less significant variation in this area of the bore. Indeed, Leipzig 1376 and 1377 have virtually no noticeable increase in the diameter of the window in comparison to the surrounding bore. The other two instruments by A. Grenser in this study – Frankfurt (Oder) (V-178J) and Leipzig (1378) – have windows only minimally larger than the surrounding bore – 3.3mm and 5.8mm.
respectively. Surprisingly, however, the size of the window diameter appears to not be related to the date of manufacture, with both the earliest and latest instruments in this study having an outsize window in comparison to the surrounding bore. Indeed, the latest instrument, dated 1788, shows the greatest variation between window and bore diameters. Others makers whose instruments have a window diameter more relative to the surrounding bore are Friedrich Lempp and Kaspar Tauber. These results indicate that August Grenser was amongst the first of the makers in this study to pay greater attention to the diameter of the window and its relation to the rest of the bore. It is therefore suggested that Grenser was a more conscientious innovator of the bassoon in attempting to achieve a more smooth and uniform bore profile than the other makers included here.\(^{24}\)

The above graphs are intended as a visual reference to aid comparison of the bore profiles of the various bassoons in this study. The variations in the bore of each instrument created by individual perturbations makes detailed and conclusive analysis difficult. While some trends, such as a tendency towards a larger bore diameter in the upper part of the instrument in bassoons by Rockobaur and Baur can be observed in the graphs, it is now necessary to determine whether these trends can be substantiated and more precisely determined by other means, such as by measuring overall conicity. The measurement for the smallest point of the bore was taken below the socket for the crook, while the largest measurement usually occurred at the top of the bass section or the lower end of the bell.

\(^{24}\) The effect of window size has not been acoustically proven in the bassoon literature.
Comparisons - conicity

Three of the four Lotz bassoons measured for this study consistently measured a conicity of 0.012 (Prague, NM: 1834E, Prague: Seidl Collection and GAU: 551) while the instrument in Vienna (Vienna: Pirker Collection) varied only slightly at 0.013. As was indicated by the graphs, the instruments by Tauber, Doleisch, Grenser and Martin Lempp all demonstrated a similar rate of conicity, ranging between 0.011 and 0.013. The Rockobaur and Friedrich Lempp instruments had the greatest rate of conicity at 0.014. The Baur bassoon, which appeared markedly similar to the Rockobaur instrument in the graph, demonstrated a slightly gentler rate of conicity at 0.013. As was seen on the graphs, variations in conicity on the dated instruments – by Doleisch and Grenser – appeared to bear no connection with the date. The instruments by Doleisch range from 0.011 (FO: V-423J, dated 1801), through 0.012 (Leipzig: 1370, dated 1783) to 0.013 (Prague, NM: 2515E, dated 1805), so the variation appears to bear no chronological relation to the date of each instrument. Likewise the oldest instrument by A. Grenser, dated 1772 (FO: V-178J), has a greater conicity at 0.013 than the next oldest, dated 1782 (Leipzig: 1376), at 0.012, while the other two instruments both measured a conicity of 0.013. A point worth noting is that the instruments by Lotz, dating between 1785 and 1792 share with the Doleisch 1783 and A. Grenser 1782 instruments a conicity of 0.012, suggesting the relative bore sizes of these instruments were prevalent in the 1780s. A later instrument, such as that by Tauber (Florence, GdA: 146) has a conicity of 0.013, again suggesting that this slight change in conicity may have taken place after Lotz’s lifetime.
Table 4.1. Bore conicity of bassoons measured for this study.

<table>
<thead>
<tr>
<th>Lotz (Prague, NM: 1843E)</th>
<th>Overall Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz (Prague: Seidl Collection)</td>
<td>0.012</td>
</tr>
<tr>
<td>Lotz (GAU: 551)</td>
<td>0.012</td>
</tr>
<tr>
<td>Lotz (Vienna: Pirker Collection)</td>
<td>0.013</td>
</tr>
<tr>
<td>Tauber (Florence, GdA: 146)</td>
<td>0.013</td>
</tr>
<tr>
<td>Doleisch (Leipzig: 1370 (1783))</td>
<td>0.012</td>
</tr>
<tr>
<td>Doleisch (FO: V-423J (1801))</td>
<td>0.011</td>
</tr>
<tr>
<td>Doleisch (Prague, NM: 2515E (1805))</td>
<td>0.013</td>
</tr>
<tr>
<td>August Grenser (FO: V178J (1772))</td>
<td>0.013</td>
</tr>
<tr>
<td>August Grenser (Leipzig: 1376 (1782))</td>
<td>0.012</td>
</tr>
<tr>
<td>August Grenser (Leipzig: 1377 (1786))</td>
<td>0.013</td>
</tr>
<tr>
<td>August Grenser (Leipzig: 1378 (1788))</td>
<td>0.013</td>
</tr>
<tr>
<td>Rockobaur (Linz: Mu 117)</td>
<td>0.014</td>
</tr>
<tr>
<td>Baur (Poznan: 1447)</td>
<td>0.013</td>
</tr>
<tr>
<td>Friedrich Lempp (Vienna, TM: 22363)</td>
<td>0.014</td>
</tr>
<tr>
<td>Martin Lempp (Yale: 3446.68)</td>
<td>0.011</td>
</tr>
</tbody>
</table>

It should be noted that bassoons, due to the unstable nature of the maple wood used in their construction, are more likely than other wind instruments to have undergone a process of re-reaming in order to eliminate faults in the bore brought about by shrinkage or warping. This may account for the lack of consistency of bore profiles.
within each maker’s output. It is impossible to determine if the bore of an instrument has undergone re-reaming or if it has been left in its original state.

**Comparisons – internal bell profile**

It will be remembered from the bore profile graphs above that most bassoons showed a downwards profile for the bell, representing an inverted taper, while only a few instruments displayed any departure from this. As was stated earlier in this chapter, an inverted taper was common at the end of the 18th century. The profile displayed on the following graphs represents the bore measured from above the tenon joint to the end of the bell.

Of the bells of the Lotz instruments, only one departs from the inverted taper shape. This is the instrument in Göttingen (GAU: 551). The other three bells follow an approximately similar shape, although the example in Vienna begins its taper from a wider diameter and tapers more quickly and aggressively than the other two examples. As a consequence of these similarities, the bells also share similar concities. Only conicity for bells with an inverted taper are given in the following discussions.
Graph 4.13. Graph showing the bell profile of Lotz bassoons.

Table 4.2. Bell conicity of three bassoons by Lotz.

<table>
<thead>
<tr>
<th>Bassoon Description</th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz Prague, NM: E_1834</td>
<td>0.026</td>
</tr>
<tr>
<td>Lotz Prague: Seidl Collection</td>
<td>0.027</td>
</tr>
<tr>
<td>Lotz Vienna: Pirker Collection</td>
<td>0.026</td>
</tr>
</tbody>
</table>

The bell of the instrument in Göttingen, which shows an hourglass profile (that is, contracting towards the middle of the bore and expanding at either end) in Graph 4.13, is not stamped, whereas all the other bells examined were clearly marked with Lotz’s name and title. This, together with the more modern hourglass bore profile as well as the external profile (discussed in more detail later), suggest this bell is not original to the instrument and has been added at a later date to increase the working life of the instrument by updating it to a more modern shape. Similarly, the bell of
the bassoon in the Pirker collection, although indisputably original has been altered at a later date by the addition of a horn ring at the rim of the bell, and the internal profile has been roughly enlarged at the very end. It was nevertheless possible to discern closely the original measurement of the bell at this point, as the enlargement was restricted to only the very end, and by measuring just below this the original measurement was gained. The bell of the bassoon in the Seidl Collection has also had its rim altered. The alterations to the decoration on this part of the instrument will be discussed in more detail later in this chapter. Of the original bells, all share almost identical end diameters, varying at most by 1.5mm. The bell on the instrument in Göttingen, however, is 3.8mm larger than the largest of the other three bells, further evidence that it is not original to the instrument.

The earliest two Doleisch instruments in this study also exhibit an inverted taper in the bell bore profile, as was seen on the Lotz instruments. The later of the three instruments, however, dated 1805, has an hourglass shape to the bore profile of the bell, although not as pronounced as that found on the anonymous bell on the Lotz instrument in Göttingen. This indicates that, while Doleisch still employed an inverted taper in 1801, by 1805 fashion had moved away from this towards the hourglass shape. The conicity of bells by Doleisch show greater variation than those by Lotz.
Graph 4.14. Graph showing the bell profile of Doleisch bassoons.

Table 4.3. Bell bore conicity of bassoons by Doleisch.

<table>
<thead>
<tr>
<th>Bassoon Details</th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doleisch, Leipzig: 1370 (1783)</td>
<td>0.016</td>
</tr>
<tr>
<td>Doleisch, FO: V423J (1801)</td>
<td>0.023</td>
</tr>
</tbody>
</table>

It is interesting to note that the bells by Doleisch are significantly less conical than those by Lotz. Furthermore, the difference is most pronounced on the earliest instrument – Leipzig: 1370 (1783) – which was made during Lotz’s years of activity.

The instrument by Tauber measured for this study exhibits perhaps the most pronounced hourglass profile in the bore of the bell. As this instrument has several other characteristics which suggest it dates from the first few decades of the 19th
century, this adds to the evidence that hourglass profiles were a later development than the reversed taper.

**Graph 4.15. Bell profile for bassoon by Kaspar Tauber (Florence, GdA: 146).**

While the bells of August Grenser’s bassoons also take the form of a reversed taper, they are quite distinct from those examined thus far. At the end of each they cease to contract and the bore remains cylindrical until the end of the bell is reached. On the earliest instrument (FO: V-178J) this the least pronounced, with the cylindrical section only measuring 10.0mm, and on the two latest instruments (Leipzig: 1377 and Leipzig: 1378) this portion of the bore only measures 21.0mm. On the instrument dating from 1782 (Leipzig: 1376), however, this accounts for nearly half of the length of the section. Although more dated instruments would be necessary to effectively formulate a theory, this may suggest that Grenser experimented with increasing the cylindrical section of the bore around this time, but later abandoned
this in favour of a shorter cylindrical section. Grenser’s bells are significantly less conical than those of Lotz. The earliest instrument is the most conical.

**Graph 4.16. Graph showing the bell profile of A. Grenser bassoons.**

![Graph showing the bell profile of A. Grenser bassoons.](image)

**Table 4.4. Bell conicity of bassoons by August Grenser.**

<table>
<thead>
<tr>
<th></th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>August Grenser</td>
<td></td>
</tr>
<tr>
<td>FO: V-178J (1772)</td>
<td>0.02</td>
</tr>
<tr>
<td>Leipzig: 1376 (1782)</td>
<td>0.015</td>
</tr>
<tr>
<td>Leipzig: 1377 (1786)</td>
<td>0.015</td>
</tr>
<tr>
<td>Leipzig: 1378 (1788)</td>
<td>0.013</td>
</tr>
</tbody>
</table>

The bell of the bassoon by Friedrich Lempp is also a reverse taper and has the same conicity as two of the Grenser examples at 0.015. The bore profile of the bell by Martin, although also a reverse taper, is considerably more conical at 0.019. It is
perhaps somewhat surprising to find that the bell of the bassoon by Martin Lempp is a reverse taper, as other instruments of this period, such as those by Doleisch and Tauber, were already exhibiting an hourglass profile.

**Graph 4.17.** Comparative graph of bell bore profiles for bassoons by Friedrich and Martin Lempp.

![Graph 4.17](image)

Table 4.5. Conicity of bells on bassoons by Friedrich and Martin Lempp.

<table>
<thead>
<tr>
<th></th>
<th>Conicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. Lempp Vienna, TM: 22363</td>
<td>0.015</td>
</tr>
<tr>
<td>M. Lempp Yale: 3446.68</td>
<td>0.019</td>
</tr>
</tbody>
</table>

The bells of the earlier Viennese instruments, by Rockobaur (Linz: Mu 117) and Baur (Poznan: 1447) are the least conical of all the bassoons measured, at just 0.008 and 0.011 respectively. The evidence presented by the graphs and tables here
indicates an increase in the level of conicity in bassoon bells in Vienna and elsewhere towards the end of the century which, in the first ten years of the 19th century began to move towards an hourglass profile, as exemplified in instruments by Kaspar Tauber and Franz Doleisch.

Comparisons – external bell profile and decoration

The external profile of the bell is also an area in which makers exhibited some individuality. Of the Lotz bassoons included in this study, two may be considered to have entirely original bells – Ptuj (GL 28 S) and Prague (Prague, NM: 1834E). Of the others, only the instrument in Göttingen, as discussed above in reference to its bore profile, has a bell which is not original to the instrument. The remaining instruments have original bells which appear to have been altered in various ways. The two unaltered original bells are capped with a brass coronet, decorated by three sets of grooved double lines. This form of decoration was a common element amongst Viennese makers, appearing frequently on key guards for basset horns, and the trend was also used on bassoons on areas such as the coronet at the top of the bell, the brass bands strengthening the tenons, and on key guards much like on the basset horn. When all four bells of the Lotz bassoons in this study are viewed side by side, strong similarities are observed between three of the bells, making the different origin of the bell in Göttingen even more obvious.
Plate 4.11. Bells of Lotz bassoons (from left to right: Prague, NM: E_1834; Ptuj: GL 28 S; Vienna: Pirker Collection; Prague: Seidl Collection; GAU: 551) illustrating similarities and differences in external profiles.

The first four examples in Plate 4.11 share a straight profile in the lower portion of the bell, leading to an angled shoulder at slightly less than half way up, after which the bell follows a waisted profile with a baluster at about three quarters of the way along. The first two bells shown above maintain the original coronet, while it appears the following two bells have been altered – the first with a horn ring and the second also with the addition of a ferrule of some description, now missing. The possibility remains, however, that the latter two bells represent a change by Lotz himself from brass coronets to horn ferrules, although this is considered unlikely due to the rarity of such mounts on bassoons.

The elegance of the Lotz bells has little to do with the almost straight and rather rustic profile of the surviving bell by Rockobaur (Linz: Mu 117). It could, however,
perhaps be seen as a refinement of the external profile evident on the Jakob Baur bassoon in Poznan (Poznan: 1447).

**Plate 4.12. External bell profiles of bassoons by Rockobaur (Linz: Mu 117) and Jakob Baur (Poznan: 1447). Baur image provided courtesy of the Musical Instrument Museum Poznan.**

The bell on the bassoon by Friedrich Lempp (Vienna, TM: 22363) perhaps has most in common of the earlier or contemporaneous Viennese makers with Lotz’s bassoons, but differences can still be discerned. Instead of proceeding cylindically from the lower brass band, it flares slightly to the shoulder, and has a more pronounced taper and baluster than the Lotz examples. When compared with the bell from the bassoon by Martin Lempp (Yale: 3446.68), the hypothesis of the different makers of the Lempp instruments proposed here is given added weight.
Plate 4.13. External bell profiles of bassoons by Friedrich (Vienna, TM: 22363) and Martin (Yale: 3446.68) Lempp.

The bell by Friedrich shows strong similarities with bells by August Grenser, particularly the earliest instrument from 1772. It will be remembered from Chapter 1 that Friedrich was born in Germany and may have initially made instruments there. The similarity in shape of the bell profiles shown here shows the influence of his native land still apparent in Friedrich’s instrument designs after he left Germany. The similarity with the earlier Grenser instrument suggests the instrument may have been made around the same time – that is around 1772 – and adds further weight to the hypothesis that this instrument is by Friedrich rather than Martin.
Plate 4.14. External bell profiles of bassoons by August Grenser (from left to right: FO: V-178J (1772); Leipzig: 1376 (1782); Leipzig: 1377 (1786); Leipzig: 1378 (1788).

It is interesting to note that August Grenser’s bell shape appeared to undergo a transformation from 1772 to 1788, as exemplified by the bells in the above image. It should be noted, however, that only the first bell (FO: V-178J) is stamped. This is not reason in itself to believe these bells to not be original, as all three match the other sections of the instruments closely in terms of wood colour and grain and brass patination. The bells shown above may indicate that, as Grenser changed the shape of his bassoon bells, he also modified his working practices to leave these unstamped. The bell profile displayed on the last three August Grenser instruments shown in Plate 4.14 are also similar to the bell on a bassoon by Eichentopf (Linz: Mu
35), further highlighting this style as a German trend of the latter part of the 18th century.

**Plate 4.15. External bell profile of a bassoon by Eichentopf (Linz: Mu 35).**

The bells of Tauber’s bassoons show clear influence from Lotz, following a very similar external profile. Tauber has made one or two departures from Lotz’s design, such as the brass bands in place of coronets and the incised lines on GNM: MIR 411, but his inheritance from Lotz is evident. The slimmer profile observable on MCA: 15/8 is the result of this instrument’s size – as a high octave bassoon it exhibits finer lines than those of the larger variety. Similarly, the bell on the only surviving bassoon by Scholl (which cannot be shown here due to the restrictions of the Gesellschaft der Musikfreunde) shows the clear influence of Lotz. It only differs from the Lotz bells in having an undecorated brass band at the top in place of a
Although no Griesbacher bassoons were examined for this study (despite attempts to gain access to instruments and to obtain catalogue information and photographs) it can be seen from one poor quality photograph of an instrument in Retz (Stadtmuseum Retz: BSR-391\textsuperscript{25}) that he too utilized the same external bell profile as Lotz on this instrument.

Plate 4.16. External bell profiles of bassoons by Tauber (from left to right: GNM: MIR 411; Florence, GdA: 137; MCA: 15/8).

Bells by Doleisch also exhibit a strong similarity with those of Lotz. Interestingly, the similarity becomes more marked for the later of Doleisch’s instruments seen here, suggesting that Lotz’s external profile was perhaps quite forward looking for their date. The similarity between Doleisch’s bells and those by Lotz also suggests

\textsuperscript{25} My thanks to Thomas Kiefer for bringing this instrument to my attention.
that there was a more uniform approach to this part of the instrument in Vienna and its surrounds.

Plate 4.17. External bell profiles of bassoons by Doleisch (from left to right: Leipzig: 1370 (1783); FO: V-423J (1801); Prague, NM: 2515E (1805)

It will be noted in the above discussion that there was some variation in the method of decoration found at the top of the bells. An examination of this aspect can also lead to inferences regarding date and place of manufacture. As was established above, all but one of the Lotz bassoon bells in this study are original and stamped with his title as court instrument maker, and therefore must have been made between his appointment in 1785 and his death in the summer of 1792. All those with complete original bells are decorated with the same style of coronet at the top of the
bell. No other maker in this study for which multiple examples were available consistently decorated the top of their bassoon bells with a brass coronet.


The style and shape of the scalloping on these two instruments is virtually identical, as is the incised double line decoration spaced evenly across the depth of the band.

Earlier Viennese bassoons, as represented by extant instruments by Rockobaur and Jakob Baur, also have a brass coronet at the top of the bell but, as with the external shape noted above, it is somewhat simpler and less refined than the Lotz examples. The two instruments show a strong similarity between the two coronets. These instruments also have the double incised lines noted on the Lotz examples above, but this only occurs twice on each instrument, whereas it appeared three times on the Lotz examples.
Plate 4.19. Coronets on bassoon bells by Rockobaur (Linz: Mu 117) and Jakob Baur (Poznan: 1447, image provided courtesy of the Musical Instrument Museum Poznan).

Only one instrument by Doleisch has this form of decoration (Leipzig: 1370), while the two other instruments (Prague, NM: 2515E and FO: V-423J) display a less elaborate brass band. The Doleisch instrument with the coronet is the oldest of the three instruments by this maker in the study, dated 1783. The other two instruments date from the first five years of the 19th century. Doleisch uses the double incised lines on both styles of bell decoration, but as with Rockobaur and Baur, employs it only twice on each instrument.
Plate 4.20. Detail of bell decoration on Doleisch bassoons (from left to right, Leipzig: 1370 (1783); FO: V-423J (1801); Prague, NM: 2515E (1805)).

The August Grenser instruments in this study also display a mix of decorative styles on the top of the bell. Two instruments – Leipzig: 1376 and FO: V-178J – use coronets, but in a different style to those found on instruments by other makers. The remaining two August Grenser instruments in this study have no brass decoration at the top of the bell, displaying instead a simple turned wooden ring. Again, the two instruments with the brass coronet are the earliest representatives of this maker from the selection considered here, dating 1782 and 1772 respectively.
Plate 4.21. Coronets and wooden rings on August Grenser bells (from left to right: FO: V-423J (1772); Leipzig: 1376 (1782); Leipzig: 1377 (1786); Leipzig: 1378 (1788)).

The bassoon by Lempp in the Technisches Museum (Vienna, TM: 22363), which is suggested to have come from the workshop of Friedrich, is capped with a brass coronet while the instrument in Yale (Yale: 3446.68), suggested to be the work of Martin, is capped with a simple brass band. The bassoon by Friedrich exhibits strong similarities in its coronet with those of Rockobaur and Baur above, including its somewhat rough shaping and double incised lines. This further supports the argument that the bassoon in Vienna is the work of Friedrich, and that coronets can be identified with earlier classical instruments.
Plate 4.22. Details of Lempp bell decorations, (from left to right: Vienna, TM: 22363; Yale: 3446.68)).

On later Viennese instruments, such as those by Tauber and Scholl, the coronet form of decoration appears to have been entirely abandoned. On bassoons by Tauber a mixture of simple brass bands or turned wooden rings may be found, and on the only surviving bassoon by Scholl, a turned wooden ring. French makers contemporaneous with Lotz, such as Bühner & Keller and Porthaux, also used turned wooden rings.
Plate 4.23. Decoration found at the top of bassoon bells by Tauber (from left to right: GNM: MIR 411; Florence, GdA 146; MCA: 15/8).

It is therefore clear that, up until approximately the last ten years of the 18th century, coronets were commonly employed to decorate and protect the end of bassoon bells. This practice is also largely identifiable with Vienna and its surrounds, and each maker employed the practice with individuality. Such decoration is not commonly a feature of baroque instruments, being absent on instruments by the Denner family and most other makers of this era. It is, however, a feature of the instrument by Rockobaur suggesting that the practice was identifiable with Vienna relatively early in the classical history of the instrument, and that its use in the later stages of the 18th century represented a continuation of this tradition for some time after the elaborate turned mouldings on the bodies of baroque instruments was abandoned.

**Comparisons – tone hole size and placement**

An examination of the surface area of the tone holes reveals little in the way of identifiable patterns. Some makers display significant variation in tone hole size within their own output, and in some cases where the date of the instrument is
known, such as bassoons by August Grenser and Doleisch, there appears to be no correlation between date of manufacture and size of tone holes. As Paul White highlighted the size of the A flat key as an indicator of date, this tone hole will be considered first. Of the three Lotz examples for which this measurement was obtainable, there is little variation, as they range in size from 19.6\text{mm}^2 to 25.5\text{mm}^2. Most of the other instruments measured for this study also fall within this range. Surprisingly, despite being an earlier instrument, the Rockobaur bassoon measures 19.6\text{mm}^2 on this key, virtually identical to the Lotz Göttingen example. The bassoon by Friedrich Lempp (Vienna, TM: 22363) has the smallest A flat tone hole, at just 11.0\text{mm}^2, in keeping with its earlier date. In contrast, the instrument by Martin Lempp (Yale: 3446.68) is considerably larger, at 26.8\text{mm}^2, making it similar to instruments by Lotz. This is further evidence that the Lempp instrument in Vienna is by Friedrich and that in Yale by Martin.

It will be remembered from the discussion above regarding the shape of the touchpieces for the F and A flat keys that the instrument by Tauber in Nuremberg (GNM: MIR 411) was considered an earlier instrument than that in Florence (Florence, GdA: 146). This is further supported by the measurements of the A flat tone hole for these two instruments, as the instrument in Nuremberg has a significantly smaller tone hole of 18.1\text{mm}^2, compared to 37.4\text{mm}^2 on the instrument in Florence. The instrument by Doleisch in Frankfurt (Oder) (FO: V-423J) is the only instrument to significantly exceed all others, at 55.3\text{mm}^2. As the other Doleisch instruments are both earlier and later than this example, this large measurement appears to bear no relation to the instruments’ date of manufacture. Similarly, the smallest A flat tone hole of the August Grenser instruments measured for this study
is curiously the latest (Leipzig: 1378, 1788), while the instruments from 1772 and 1786 (FO: V-178J and Leipzig: 1377) fall within the range of the instruments by Lotz and the instrument from 1782 (Leipzig: 1376) is larger at 33.8mm$^2$. This suggests that the size of this tone hole is not a completely reliable indicator of date when such a small sample of instruments made relatively close to each other in date is considered.

Table 4.6. Comparative table of the tone hole sizes for A flat for bassoons in this study. All tone hole sizes are in mm$^2$.

<table>
<thead>
<tr>
<th></th>
<th>A flat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz Prague: Seidl Collection</td>
<td>25.5</td>
</tr>
<tr>
<td>Lotz GAU: 551</td>
<td>19.6</td>
</tr>
<tr>
<td>Lotz Vienna: Pirker Collection</td>
<td>20.4</td>
</tr>
<tr>
<td>Rockohaur Linz: Mu 117</td>
<td>19.5</td>
</tr>
<tr>
<td>Tauber Florence, GdA 146</td>
<td>37.4</td>
</tr>
<tr>
<td>Tauber GNM: MIR 411</td>
<td>18.1</td>
</tr>
<tr>
<td>Friedrich Lempp Vienna, TM: 22363</td>
<td>11.0</td>
</tr>
<tr>
<td>Martin Lempp Yale: 3446.68</td>
<td>26.8</td>
</tr>
<tr>
<td>Doleisch Leipzig: 1370 (1783)</td>
<td>26.4</td>
</tr>
<tr>
<td>Doleisch FO: V-423J (1801)</td>
<td>55.3</td>
</tr>
<tr>
<td>Doleisch Prague, NM: 2515E</td>
<td>19.6</td>
</tr>
<tr>
<td>August Grenser FO: V-178J (1772)</td>
<td>22.8</td>
</tr>
<tr>
<td>August Grenser Leipzig: 1376 (1782)</td>
<td>33.6</td>
</tr>
<tr>
<td>August Grenser Leipzig: 1377 (1786)</td>
<td>24.2</td>
</tr>
<tr>
<td>August Grenser Leipzig: 1378 (1788)</td>
<td>12.6</td>
</tr>
</tbody>
</table>
For the tone holes on the remainder of the instrument, of the two bassoons by Tauber for which these measurements were available the instrument in Nuremberg (GNM: MIR 411), suggested above as predating the other Tauber bassoons in this study, has for the most part smaller tone holes than the instrument in Florence (GdA: 146) – further indication of its earlier date. As can be seen in the table below, the tone holes surface areas of the Nuremberg bassoon are relatively similar to those of the three Lotz bassoons, although some tone holes, such as those for RT, F and D keys, already indicate a tendency towards larger tone holes.

Table 4.7. Tone hole areas for bassoons by Tauber and Lotz. All tone hole sizes are in mm^2.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>F</th>
<th>A♭</th>
<th>F#</th>
<th>RT</th>
<th>E♭</th>
<th>D</th>
<th>L1</th>
<th>B♭</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz Prague: Seidl Collection</td>
<td>36.0</td>
<td>33.4</td>
<td>37.2</td>
<td>57.5</td>
<td>44.5</td>
<td>33.8</td>
<td>71.9</td>
<td>25.5</td>
<td>67.0</td>
<td>74.4</td>
<td>52.1</td>
<td>101.9</td>
<td>65.7</td>
<td>84.8</td>
</tr>
<tr>
<td>Lotz GAU: 551</td>
<td>33.2</td>
<td>33.1</td>
<td>30.4</td>
<td>54.6</td>
<td>49.8</td>
<td>33.7</td>
<td>73.8</td>
<td>19.6</td>
<td>-</td>
<td>82.2</td>
<td>49.4</td>
<td>114.8</td>
<td>80.9</td>
<td>105.6</td>
</tr>
<tr>
<td>Lotz Vienna: Pirker Collection</td>
<td>43.5</td>
<td>47.4</td>
<td>35.0</td>
<td>55.4</td>
<td>51.3</td>
<td>35.0</td>
<td>70.0</td>
<td>20.4</td>
<td>-</td>
<td>84.9</td>
<td>60.0</td>
<td>117.4</td>
<td>73.7</td>
<td>121.5</td>
</tr>
<tr>
<td>Tauber GNM: MIR 411</td>
<td>36.7</td>
<td>33.4</td>
<td>48.4</td>
<td>60.4</td>
<td>53.8</td>
<td>95.0</td>
<td>18.1</td>
<td>45.1</td>
<td>95.3</td>
<td>48.3</td>
<td>124.1</td>
<td>67.9</td>
<td>107.4</td>
<td></td>
</tr>
<tr>
<td>Tauber Florence, GdA: 146</td>
<td>41.6</td>
<td>39.8</td>
<td>31.2</td>
<td>60.3</td>
<td>59.4</td>
<td>45.6</td>
<td>124.5</td>
<td>37.4</td>
<td>99.9</td>
<td>112.6</td>
<td>-</td>
<td>184.5</td>
<td>83.3</td>
<td>168.4</td>
</tr>
</tbody>
</table>

This table also indicates the relative consistency in tone hole area of Lotz’s bassoons, suggesting that Lotz was not experimenting with improvements or alterations in this area of the instrument, but instead had decided upon a design which he considered suitable and successful. Conversely, makers such as Doleisch and August Grenser show considerable variation in the tone hole area of the instruments represented in this study. Contrary to the general indication provided by the Rockobaur and Friedrich Lempp bassoons that earlier instruments display a tendency towards
smaller tone holes, the earliest of the August Grenser bassoons in this study, dated 1772 (therefore roughly contemporaneous with both the Rockobaur and Friedrich Lempp instruments) has in some cases significantly larger tone holes than later instruments by the same maker. This is particularly noticeable on RT, LT and the D and B flat bottom keys. There is as much as 105.5 mm$^2$ difference between the D key of the 1772 bassoon by August Grenser and the next earliest instrument, dated ten years later. However, this earliest Grenser bassoon also has other tone holes significantly smaller than the other Grenser instruments. This level of variation suggests that Grenser was experimenting with altering various parameters of the instrument to bring about improvements. As Grenser’s bore profiles were identified above as displaying the most consistency, it is suggested that one area of his experimentation centred around changes to the tone holes, as evidenced by the variation in tone hole area shown below.

Table 4.8. Tone hole areas for bassoons by August Grenser. All tone hole sizes are in mm$^2$.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>F</th>
<th>A&quot;</th>
<th>RT</th>
<th>E&quot;</th>
<th>D</th>
<th>LT</th>
<th>B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>August Grenser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FO: V-178J</td>
<td>36.2</td>
<td>30.1</td>
<td>35.2</td>
<td>75.3</td>
<td>50.9</td>
<td>44.9</td>
<td>77.6</td>
<td>22.8</td>
<td>102.2</td>
<td>62.4</td>
<td>153.9</td>
<td>112.1</td>
<td>121.6</td>
</tr>
<tr>
<td>Leipzig: 1376 (1782)</td>
<td>50.5</td>
<td>35.4</td>
<td>39.3</td>
<td>57.3</td>
<td>42.1</td>
<td>39.2</td>
<td>61.4</td>
<td>33.6</td>
<td>61.7</td>
<td>-</td>
<td>48.4</td>
<td>52.8</td>
<td>88.2</td>
</tr>
<tr>
<td>Leipzig: 1377 (1786)</td>
<td>38.2</td>
<td>27.9</td>
<td>35.0</td>
<td>52.8</td>
<td>42.2</td>
<td>38.0</td>
<td>76.7</td>
<td>24.2</td>
<td>79.4</td>
<td>75.3</td>
<td>79.3</td>
<td>78.5</td>
<td>143.1</td>
</tr>
<tr>
<td>Leipzig: 1378 (1788)</td>
<td>25.3</td>
<td>30.2</td>
<td>26.4</td>
<td>52.8</td>
<td>48.7</td>
<td>46.2</td>
<td>71.6</td>
<td>12.6</td>
<td>60.5</td>
<td>70.4</td>
<td>76.1</td>
<td>64.3</td>
<td>105.6</td>
</tr>
</tbody>
</table>
Due to the bassoon’s size the tone holes are drilled obliquely into the body so that they enter the bore at the acoustically appropriate position whilst remaining within reach of the players’ fingers. The position of the tone holes where they enter the bore relative to their position on the outside of the instrument – that is, the angle at which they are bored – may give an indication as to the level of attention paid by the maker to the placement of the tone holes in their acoustically optimal position. This will be expressed here by the difference in millimetres between the external and internal positions of the tone holes.

All of the Lotz bassoons in this study have the internal and external positions of the tone holes placed in the same way. T1, T4 and the right thumb all have the tone holes drilled obliquely upwards so that the internal tone hole is placed higher on the bore than its external counterpart. T2, T3, T5 and T6 are all drilled obliquely downwards so that the external part of the tone hole is higher than the internal. This is the first noticeable point of divergence amongst the group of bassoons measured for this study. While Lotz remains consistent from instrument to instrument as to which tone holes are drilled upwards or downwards, several makers show variation
within their own output. Tauber and Doleisch show variation on only one tone hole on their instruments – on the Tauber instrument in Florence (GdA 146) T1 is drilled upwards whereas on the instrument in Nuremberg (GNM: MIR 411) it is drilled downwards, and two of Doleisch’s instruments (Leipzig: 1370 and Prague, NM: 2515E) T5 is drilled upwards but is drilled downwards on the instrument in Frankfurt (Oder) (FO: V-423J). August Grenser’s instruments, however, show a variation in drilling direction on T2, T5 and the right thumb hole. The difference occurs on the earliest instrument – FO: V-178J – where these tone holes are drilled upwards as opposed to downwards on the later instruments. This suggests that Grenser, in the intervening ten years between FO: V-178J and the next oldest instrument – Leipzig: 1376 – had changed the position of this tone hole to be drilled downwards to optimise it acoustically whilst still keeping it within reach of the players’ fingers.

The two instruments by the Lempp family also show some variation. T2 and T5 on the instrument by Friedrich are drilled downwards as opposed to upwards on the instrument by Martin. T4 shows no variation on Friedrich’s instrument, that is, the tone hole is drilled straight rather than obliquely, whereas there is a difference of 6.0mm between the external and internal positions of this tone hole on the instrument by Martin. The instrument by Rockobaur (Linz: Mu 117) is the only instrument to have all tone holes drilled in the same direction, where the internal position of the tone hole is higher than the external.

For the most part, the degree of difference between the external and internal positions of the tone holes is not great and remains relatively consistent within each maker’s output and from maker to maker. There is a noticeable difference however, on T1-T3 on instruments by both August Grenser and Doleisch, where the tone hole
is drilled obliquely upwards and the distance between the internal and external positions of the holes increases with the date of the instrument. The difference is greatest on the Doleisch instruments, where the largest difference – on T3 – is 12.5mm from the earliest to the latest instrument, whereas the largest difference on the Grenser bassoons is 5.3mm. It is interesting to note that each maker arrived at a similar degree of difference for the positions of the external and internal tone holes, but that August Grenser had arrived at this at least seventeen years before Doleisch.

**Table 4.10. Difference between the internal and external positions for obliquely drilled tone holes on the wing section (T1 – T3) of bassoons by August Grenser and Doleisch.**

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>August Grenser</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FO: V-178J (1772)</td>
<td>7.5</td>
<td>0.5</td>
<td>11.0</td>
</tr>
<tr>
<td>August Grenser</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leipzig: 1376 (1782)</td>
<td>4.9</td>
<td>6.6</td>
<td>10.1</td>
</tr>
<tr>
<td>August Grenser</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leipzig: 1377 (1786)</td>
<td>11.1</td>
<td>6.9</td>
<td>13.9</td>
</tr>
<tr>
<td>August Grenser</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leipzig: 1378 (1788)</td>
<td>12.8</td>
<td>5.2</td>
<td>13.7</td>
</tr>
<tr>
<td>Doleisch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leipzig: 1370 (1783)</td>
<td>2.2</td>
<td>1.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Doleisch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FO: V-423J (1801)</td>
<td>7.8</td>
<td>4.2</td>
<td>10.2</td>
</tr>
<tr>
<td>Doleisch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prague, NM: 2515E (1805)</td>
<td>12.2</td>
<td>6.3</td>
<td>15.8</td>
</tr>
</tbody>
</table>

The fact these significant differences occur on the wing section of the instrument, and that the tone holes for the rest of the instrument remain relatively consistent throughout the date range of both makers indicates that their efforts at improving this particular aspect of bassoon design centred around the three tone holes on the wing section.
Another significant divergence is evident when the relative positions of the internal and external positions of the same tone holes (T1-T3) of the Lotz bassoons are examined. Here the greatest divergence occurs on the instrument in the Pirker Collection.

Table 4.11. Relative positions of the internal and external points of tone holes on the wing sections of bassoons by Lotz.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotz Prague: Seidl Collection</td>
<td>3.2</td>
<td>4.3</td>
<td>4.8</td>
</tr>
<tr>
<td>Lotz GAU: 551</td>
<td>5.0</td>
<td>5.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Lotz Vienna: Pirker Collection</td>
<td>20.1</td>
<td>19.9</td>
<td>18.4</td>
</tr>
</tbody>
</table>

Given the evidence presented above regarding these same tone holes on bassoons by Doleisch and August Grenser, it may seem at first that this indicates that the Lotz example in the Pirker Collection is of a later date than the other two instruments. It must be considered, however, that this section is not stamped and its origin must be questioned. In comparing its external shape with the wing sections of the other Lotz instruments, which are stamped, it can be seen in the following images that the stamped sections have a more angular and square profile to the raised section of the wing on which the tone holes may be found compared to the Pirker example, where the raised section is more smoothly approached. It must therefore be concluded that the wing section on the instrument in the Seidl Collection is not original to the instrument and the data derived from it is not representative of Lotz’s work.
Plate 4.24. Wing sections from bassoons by Lotz, from left to right: Vienna: Pirker Collection; GAU: 551; Prague, NM: E_1843; Prague: Seidl Collection.

Griesbacher and Scholl

Before moving on to a discussion of contrabassoons, it is necessary to briefly consider Lotz’s pupils or collaborators whose instruments have received little to no discussion thus far in the chapter. The single surviving bassoon by Scholl has been mentioned in passing several times throughout this chapter, but as no measurements were permitted or provided by the Gesellschaft der Musikfreunde its usefulness as a comparative instrument is considerably lessened. Nevertheless, documentary
evidence suggests that Scholl applied himself to developments of the bassoon as well as lower pitched clarinets as briefly explored in Chapter 3. The following advertisement appeared in the *Wiener Zeitung* on April 2\textsuperscript{nd}, 1803:

Seine Fagotts haben viele von ihm erfundene Verbesserungen im Bau des Körpers, Stellung der Klappen usw. Besonders bemerkenswerth ist es, daß man diese Fagott ohne ein längere oder kürzeres S, oder ohnen einen andern Flügel, nach Erforderniß stimmen kann. – Auch die Octav=Fagott macht er auf eine eigene ganz neue Art, und diese geben das mittere G mit der angenehmsten Leichtigkeit.

[His bassoons have many new improvements added by him in the building of the body, application of the keys and so on. Particularly noteworthy is that with this bassoon one does not require a shorter or longer crook, or a different wing section, to facilitate tuning. He also makes the contrabassoon in a completely new way, and these give the middle G with the greatest ease.]

The reference to crooks and wing sections of differing lengths suggests that Scholl’s bassoons were fitted with a tuning slide on the wing section, as seen on the Tauber bassoon in Florence (GdA: 146, see Appendix D for full details of this instrument) in order to increase or decrease the length of the section as desired. The instrument preserved in the Gesellschaft der Musikfreunde (Vienna, GdM: 162), however, shows no evidence of a tuning slide and so is likely to date before 1803 – the date of the advertisement above. The instrument has eight keys, two of which are octave keys. It has a swallowtail touchpiece for the F key, which, as has been shown, is in keeping with a date sometime in the late 18\textsuperscript{th} or early 19\textsuperscript{th} centuries. As was noted in Chapter 1, biographical information on Scholl is minimal, and until such time as further investigations of his three surviving instruments are possible, our

\footnotesize{Wiener Zeitung, 2\textsuperscript{nd} April, (1803), 1174.}
understanding of this maker and his place in the history of Viennese woodwind instrument making must remain insubstantial.

There are three known extant bassoons surviving by Griesbacher – in the Musei Musikalnich Instrumentov Teatra Muziki I Kinematografii St. Petersburg (St. Petersburg, MMI: 532), a private collection in Denmark, and in the Stadtmuseum Retz (Retz: BSR-391).\(^27\) Despite a number of attempts to gain information on these instruments, only minimal information has been forthcoming on the instrument in Denmark, from notes made by William Waterhouse and kindly provided from his archive by James Kopp, and by information provided by the current owner. According to Waterhouse’s notes, the instrument originally had four keys, with additional keys being added early in its life. He likens the instrument to a bassoon by Grenser featured in a Galpin Society Journal of 1967, but this reference could not be traced. According to Waterhouse’s notes, the instrument is stamped twice with GRIE/S/BACHER/WIEN, although the current owner states that no makers mark is visible on the instrument. As the stamp is missing the title of K.K. Hofinstrumentenmacher as seen on Griesbacher’s other instruments in this study, it is likely this instrument predates his court appointment of 1800. An early date is also indicated by the low number of keys recorded by Waterhouse.

**Conclusions**

In this examination of bassoons of the late 18\(^{th}\) and early 19\(^{th}\) century in Vienna and its surrounds, it has been found that Lotz was not as avid a reformer of the bassoon as he was of the clarinet and basset horn. His pupil Kaspar Tauber, however, shows

\(^{27}\) The Griesbacher bassoon in Denmark was once part of the Lange Collection. Matthew Dart, Personal Communication, September 2011; Thomas Kiefer, Personal Communication, September 2009.
marked development in various aspects of design in his extant instruments, such as key shape, tone hole size, and the bore profile of the bell. Other makers who appeared to be experimenting with various parameters of the bassoon to a greater extent than Lotz were August Grenser, whose instruments are widely copied today and form a standard classical instrument for many performers, and Franz Doleisch. The addition of extra keys to Lotz’s instruments and their modernisation by the alteration or substitution of the bell and wing section suggests they were nevertheless highly prized instruments at the time, the working lives of which players apparently sought to extend.

**CONTRABASSOONS**

**Documentary evidence of Lotz’s contrabassoon**

In September of 1785, Lotz placed an advertisement in the *Wiener Zeitung* announcing his appointment as *K.K. Hofinstrumentenmacher* and outlining the instruments he offered for sale.\(^{28}\) Amongst these he counts a “grossen Octavfagot”, which he describes as being a whole octave deeper than the usual bassoon. He continues, “... dennoch mit eben so leichtem Odem, und mit der nemlichen Art Röhren und Fingerapplikatur gespielt wird.” [...] which nevertheless can be played with the same lightness of breath, and with the same reeds and fingerings [as the usual bassoon]. The section pertaining to the contrabassoon is reproduced in full below. No contrabassoon by Lotz is known to survive, therefore the nature of this instrument can only be extrapolated from this advertisement, as well as an analysis of the repertoire Lotz is known to have played on it together with an examination of

\(^{28}\) *Wiener Zeitung, 7th* September, (1785), 2109.
surviving contrabassoons by makers connected with Lotz. Firstly it must be noted that it is unlikely Lotz used the same size reeds as the regular bassoon on his contrabassoon and by the statement quoted above should probably be taken to mean the same type of reeds – that is, double – rather than a reed of the same size.


[He has also prepared a large Octave bassoon, which although itself is a whole octave lower than the ordinary bassoon, it can nevertheless be played with the same lightness of breath, and the same type of reeds and fingering, as the regular bassoon. Herr Lotz has, both for his merciful Majesty the Kaiser, and also in a large musical academy in the Imperial National Theatre with the Imperial Wind Harmony, performed in public with unanimous approbation, and experts and enthusiasts admired its good effect which this instrument lends to wind music, which sounds like a large Orchestra.]

The fact that Lotz describes his instrument as playing a whole octave lower than the usual bassoon immediately identifies it as a true contrabassoon, as opposed to ‘semi-contrabassoons’, (or quart and quintfagots), whose compass extended a fourth or fifth respectively below that of the regular bassoon.³⁰ This is borne out by the repertoire for which Lotz used his new instrument. It was undoubtedly on this instrument that he performed the contrabassoon part to Mozart’s Maurerische

²⁹ Wiener Zeitung, 7th September, (1785), 2109.
Trauermusik (KV 477) only shortly after the advertisement above, in November of 1785.\footnote{H.C. Robbins Landon, \textit{Mozart and the Masons} (London: Thames and Hudson, 1991), 61.} This is the only occasion that Mozart wrote for the contrabassoon, and as the work was composed the same year as Lotz’s advertisement there can be little doubt that the part was conceived with Lotz’s instrument in mind. Contra C ($C'$) occurs three times in Mozart’s work.\footnote{Langwill, “The Double Bassoon,” 10.} Whether or not this was the extent of Lotz’s instrument is difficult to determine without an extant example. If the instrument was, as Lotz described it, a complete octave below the regular bassoon, then this would suggest its lowest note to be B flat ($B_b'$'), as with extant bassoons by Lotz. The absence of this note in Mozart’s work does not preclude its presence on the instrument, and there is no instance in the part where a low B flat has been avoided by transposition.

Lotz performed on his contrabassoon on several more occasions in 1785. One of these was in a Masonic setting, in a benefit concert organised for the basset horn duo and fellow masons Anton David and Vincent Springer in October, in which Lotz played the contrabassoon part in a \textit{Partita} by Anton Stadler.\footnote{Lawson, “Basset Clarinet,” 489.} This work has since been lost, therefore it is impossible to glean any information regarding Lotz’s instrument from it.

The other concert to which Lotz refers in the advertisement from the \textit{Wiener Zeitung} took place in the National Theater with the \textit{K. K. Blasenden Kammerharmoniemusik} in the presence of the Kaiser. Unfortunately Lotz does not mention the repertoire performed on this occasion, although it is possible it was again the \textit{Partita} by
Stadler, also a member of the same ensemble. This performance took place on March 12th, 1785.34

In an abstract from his autobiography published in the *Allgemeine Musikalische Zeitung* of 1813, Johann Friedrich Reichardt (1752 – 1814) describes a visit to Vienna in the summer of 1785, during which he hears the *Harmoniemusik* of both the Emperor Joseph and his brother, Archduke Maximilian, both of whom retained *Harmoniemusik* ensembles.35 Amongst the members of one of the ensembles, Reichardt particularly notes a contrabassoonist, although does not name the player.36 It is not difficult to imagine that the player was Lotz, considering the other instances in this year when Lotz performed on his contrabassoon. Lotz’s performance with the *K.K. Blasenden Kammerharmoniemusik* mentioned in his advertisement links him with the imperial ensembles and strengthens the supposition that the player mentioned by Reichardt was Lotz. The performance appears to have been a private one which took place in the *Kleine Redoutensaal*.37 The Archduke Maximillian was apparently much taken with the instrument and called the player to him many times, requesting he accompany the Archduke back to his own castle. The player offered his excuses, as he was already working as an organist for a Princess in Vienna.38 If this player was Lotz, this indicates that he was also an organist. As Reichardt’s visit took place in the summer of 1785, Lotz would not yet have taken up his appointment as court instrument maker, which took effect in September of that year.

34 Morrow, *Concert Life*, 172.
38 Reichardt, “Autobiographie,” 668.
Haydn employs the contrabassoon for the first time in *Die Sieben letzten Worte unseres Erlösers am Kreutzer* (1785/86), where Contra C is again the lowest note.\(^{39}\) Again, note the correspondence between the date of composition and creation of Lotz’s instrument. It may even be possible that Lotz played this part on his instrument at the work’s Viennese premier in 1787. Haydn employs the contrabassoon in an *Intermezzo* for twelve winds (two horns in C, one flute, two oboes, two clarinets in C, two trombones, two bassoons and contrabassoon), strongly reminiscent of the contrabassoon’s early role as a member of *Harmoniemusik* in Vienna. Haydn did not employ the contrabassoon again until *The Creation* (1795-98), then again in *The Seasons* (1799-1800),\(^ {40}\) both of which were composed and performed after Lotz’s death. Interestingly, the contrabassoon part in the earlier work twice descends to sub-contra B flat,\(^ {41}\) a semitone below the range of earlier works by both Mozart and Haydn. Again, without a surviving contrabassoon from Lotz it is difficult to surmise if this increase in the range was a result of a development in the instrument or increased interest and confidence in the contrabassoon on the part of composers. If the result of an innovation in the instrument it is unlikely this was carried out by Lotz, who had been dead for some years. In this case the innovator would most likely be Lotz’s pupil, Kaspar Tauber, of whom ten surviving contra bassoons are known, with from five to eight keys, testifying to his interest in innovations to this instrument. The contrabassoon part for *The Seasons* reinstates Contra C as the lower limit for the instrument,\(^ {42}\) suggesting

\(^{40}\) Langwill, “The Double Bassoon,” 10.  
\(^{41}\) Langwill, “The Double Bassoon,” 10.  
\(^{42}\) Langwill, “The Double Bassoon,” 10.
that the lower ranges of contrabassoon parts were dictated by compositional imperatives rather than limitations or innovations of the instrument itself.

1785 appears to encompass Lotz’s recorded involvement with the contrabassoon. However, amongst the instruments and tools listed in Lotz’s possession after his death are “3 alte grosse Fagott”.

Perhaps this refers to contrabassoons, but it is not stated if Lotz is the maker, or if these are instruments he collected as curiosities, experiments or examples. They are amongst the items of lowest value in the list of tools and instruments, at 2fl, with an auction price of 3fl 18xr for all three. As Lotz was involved with innovations to the basset horn in 1782/83, he must have been involved with his development of the contrabassoon at around the same time. It may be the case that these simultaneous innovations were instrumental in Lotz obtaining the position of court instrument maker.

**Examples of contrabassoons from Vienna and its surrounds**

Lotz was certainly active in the areas recognised as the seat of development of the contrabassoon. The development of the classical contrabassoon seems to have centred around the Bohemian nations, with innovations begun by makers, according to Jansen, such as Simon Truska (1734 – 1809), Wenzel Horàk (1788/1791 – 1854) and F. Pitschmann (dates unknown, active c1800) in and around Prague. Lotz’s advertisement, however, clearly predates any developments made by the latter two makers. Indeed, Langwill makes the point that, of the forty-five contrabassoon makers he lists, twenty-seven are Austrian, German or Bohemian. In order to gain some idea of the possible features of Lotz’s contrabassoon, the national

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43 Wiener Stadt- und Landesarchiv, V2505/1792
characteristics of these instruments will be examined, with the discussion focussing on instruments by Tauber and Martin Lempp.

As has been discussed elsewhere, Tauber had been a pupil of Lotz, and the marked similarity of his clarinets to that of his master has already been noted. There is no record of Lempp having personal or professional associations with Lotz, and it will be remembered from Chapter 1 that he belonged to a group of makers separate from the circle surrounding Lotz. Lotz’s other pupil, Franz Scholl, also advertises contrabassoons in his 1803 Wiener Zeitung announcement, which he claims to make in an entirely new way, descending to middle G (‘mitte G’) with the greatest of ease. However no contrabassoons by Scholl are known to survive, this advertisement providing the only evidence of their existence. Certainly the contrabassoon continued to flourish in Vienna, as in 1807 a contrabassoon player was on the payroll of the Court Orchestra.

Both Tauber and Martin Lempp’s extant instruments adhere to the design described by Langwill as the tall bassoon-shape, although each maker has adapted the form slightly. This design has a wooden bell like the regular bassoon and an inverted butt attached to the top of the wing joint and lying next to the bell. From the underside of this emerges the crook. The advantage of this construction lay in allowing the instrument to be constructed in the usual pitch of C with normal fingering, but greatly reduced in height, only slightly exceeding five feet. This becomes particularly significant when considering the wording of Lotz’s 1785

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46 Wiener Zeitung, 2nd April, (1803), 1174.
47 Langwill, Bassoon and Double Bassoon, 32.
51 Langwill, “The Double Bassoon,” 27.
advertisement, claiming that his contrabassoon could be played with “the same ...
fingerling”. This would certainly simplify transitions between instruments for the
doubling bassoonist, and considering the simplicity and ingeniousness inherent in
Lotz’s designs elsewhere, it seems likely that this type of instrument, or something
very similar, was the one on which Lotz performed in 1785.

As Lotz described his instrument in detail in his advertisement, and specifically
draws attention to its use and design, it can be assumed that the instrument was
relatively new, probably made in or just before 1785. However, Lotz does not
actually employ the word “new” in his description. The bassoon family had always
included larger instruments. Some early surviving examples were made by
Eichentopf in Leipzig (1714), another attributed to this maker is dated before 1711,
Auciuti in Milan (1732), and Stanesby Junior in London (1739). Stanesby Senior
is also recorded as having made a contrabassoon in 1727. Heyde, in his article on
the contrabassoon, also describes an instrument by Richard Haka of Amsterdam from
the late 17th century in the Sonderhausen Schloß- und Heimatmuseum (Mu 5). It
can be seen that all of these instruments predate Lotz by a number of years. Heyde’s
article also highlights a number of instruments, works, and courts at which the
contrabassoon was used during the 17th and early 18th centuries, indicating that
during the Baroque era the instrument was not uncommon. While Lotz clearly could
not claim to have invented the instrument, a strong argument can be made that he
was responsible for its revival and development in the classical era.

<http://www.grovemusic.com>
55 Herbert Heyde, “Contrabassoons in the 17th and early 18th Century,” The Galpin Society Journal 40,
Of the makers listed earlier as carrying out the early developments of the contrabassoon (Truska, Horák and Pitschmann), Truska is probably of most interest, being the only one of these three makers listed by Jansen of an earlier generation than Lotz. Truska was active in Prague from 1758 until his death in 1809. Only one instrument by Truska is known to survive – a contrabassoon in the Narodní Muzeum Prague (Prague, NM: 183E). Jansen attributes a further bassoon in the Gemeentemuseum Den Haag (GM: 1933-0416) to this maker, a claim which will be examined in greater detail later in this chapter.

Born in Raudnitz in 1734, Truska trained first with his father as a cabinet-maker before being sent to continue his training with the court maker Kaiser in Prague. However, his studies here were interrupted when he fled to Vienna on the Prussian occupation of Prague in 1757, but returned to that city on the cessation of the occupation. Shortly afterwards he was accepted as a lay-brother in the Strahov monastery, where he remained, serving primarily as door-keeper, until his death in 1809. However, during his time at Strahov, Truska maintained his practical activities (this indeed being the chief function of a lay-brother), which were many and varied. Not only did he make a number of different types of musical instruments, including basset horns (discussed in Chapter 3), organs, pianos, violins, violas, viole d’amoure and viole da gamba (and of course the contrabassoon under discussion here), but also composed trios, quartets, quintets, duets and sonatas for the viola da gamba. His dance music, composed between 1774 and 1776, was reported

56 Waterhouse, New Langwill, 404.
to have met with great success in Prague. Curiously, there is no biographical reference to his activities as a bassoon maker.

The bassoon by Truska in the Narodní Muzeum Prague (Prague, NM: 183E) has five brass keys, all of which are mounted in brass saddles. It is of the tall bassoon form, with a brass crook, straight crook extension, inverted butt, wing section, lower wing extension, butt section, bass and bell, giving eight sections in all. The sections are, for the most part, very large and would have required wood and tools of a significant size. The contrabassoon attributed to Truska by Jansen in The Hague (GM: 1933-0416) also has its sections ordered in this way.

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Martin Lempp avoided the necessity for large pieces of wood by making his contrabassoons in smaller, more numerous sections, comprising a crook, inverted butt, upper wing extension, wing section, lower wing extension, lower wing (on which the finger holes T4-6, normally found on the butt, are situated), butt section, lower bass, bass and bell. Although the instrument in Brussels (MIM: 1002) is incomplete, it appears both extant bassoons by Martin Lempp adopt this form.

Tauber, however, on the instrument in Nuremberg (GNM: MIJ 36) maintains the large butt section found on the instrument by Truska, but removes the necessity for an inverted butt and upper wing extension by looping the crook and its extension high over the top of the wing section. The number and type of keys on the Tauber instrument indicate it is a much later example than the other instruments under discussion here.

⁶⁴ Image taken from Young, Landesmuseum, 215.
Plate 4.27. Crook extension and wing section of bassoon by Kaspar Tauber (GNM: MIJ 36)

The instrument by Truska has the smallest tone holes of the instruments examined here by a significant margin. On most of the finger holes, instruments by the other makers exceed the Truska measurements by as much as two or three times. This includes the instrument in The Hague ascribed to Truska by Jansen, which, although much closer to the Prague example for T1-T3 than any of the other instruments, demonstrates a significant margin when T4-T6 are considered. Tone holes under the keys have not been included as many were inaccessible due to key mountings, making comparisons impossible.

Table 4.12. Table of tone hole areas for T1-T6 of contrabassoons measured for this study.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truska Prague, NM: 183E</td>
<td>37.7</td>
<td>41.8</td>
<td>42.4</td>
<td>45.9</td>
<td>46.5</td>
<td>43.0</td>
</tr>
<tr>
<td>Anon The Hague, GM: 1933-0416</td>
<td>57.7</td>
<td>57.6</td>
<td>46.7</td>
<td>128.9</td>
<td>149.4</td>
<td>74.4</td>
</tr>
<tr>
<td>Tauber GNM: MIJ 36</td>
<td>113.7</td>
<td>n/a</td>
<td>79.3</td>
<td>130.9</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Martin Lempp Linz: Mu 37</td>
<td>98.8</td>
<td>89.6</td>
<td>68.2</td>
<td>137.2</td>
<td>108.3</td>
<td>240.0</td>
</tr>
<tr>
<td>Martin Lempp MIM: 1002</td>
<td>86.0</td>
<td>74.6</td>
<td>51.3</td>
<td>102.0</td>
<td>102.9</td>
<td>51.4</td>
</tr>
</tbody>
</table>
Due to their size, it was not possible to obtain measurements along the full length of the bore for the contrabassoons investigated in this study, as the measuring tools used had insufficient length to reach the full length of the butt. Although measurements were taken where the bore was accessible, many of the bores were found to be oval in shape, particularly on the bass and bell sections, which is likely a result of the large size of the sections with relatively thin walls. Furthermore, internal measurements of the instrument by Tauber were not permitted by the museum. Conicity of the whole instrument and the bell is therefore not considered here.

The Truska bassoon, based on the active dates of the maker and the number of keys, is likely to be the earliest contrabassoon examined here. It will be noted in Plate 4.25 that the external profile of the bell of the Truska contrabassoon (Prague, NM: 183E) is similar to those of Doleisch bassoons noted earlier in the chapter. Furthermore, the decoration on the rim of the bell is a brass band rather than a coronet, a feature which was identified earlier in the chapter with bassoons made in the first two decades of the 19th century. In addition, the springs are attached to the keys and the key heads are round, further indicators of a date sometime around the beginning of the 19th century. The instrument also has an apparently original right thumb key. These factors combined may therefore suggest that the instrument was made sometime after Lotz’s death. Considering Lotz’s announcements and performances on his contrabassoon were in 1785, and his work on the instrument must have begun some time before that, it is possible that Lotz was the first to begin to make and use this instrument in the classical era. Certainly there is no evidence to suggest earlier Viennese makers, such as Rockobaur, Baur or Friedrich Lempp ever made contrabassoons.
Jansen gives little reason for his attribution of the contrabassoon in the Gemeentemuseum in The Hague (GM: 1933-0416) to Truska, stating only that the quality of the workmanship suggests Truska’s skill.65 This in itself is not considered by this author as sufficient grounds for the attribution, and indeed there are several characteristics of the instrument which make it quite different from the Truska example. Firstly, it should be noted that the Truska contrabassoon is highly decorated with inlaid mother-of-pearl and bone geometric shapes and patterns, with engravings on the brass bands. It is perhaps worth observing here that one of the projects undertaken by Truska at Strahov was the building of a small organ into a table, which he then presented to his Abbot.66 Perhaps this contrabassoon is another example, like the table organ, of Truska’s ability to combine decorative elements with musical instruments. The contrabassoon in The Hague is, by contrast, completely undecorated, with even the brass bands reinforcing the socket and tenon joints left unadorned. Only the key cover for the left thumb key has a simple cut away pattern to allow the note to sound more freely. The octagonal key heads on the anonymous example are also completely unlike the round key heads found on the contrabassoon by Truska. It can be seen in Table 4.12 that the two bassoons also have very different tone hole areas, particularly from T4 to T6. Furthermore, the two bassoons exhibit entirely different bell profiles.

Plate 4.28. Bells of contrabassoons by Truska (Prague, NM: 183E) and Anonymous (GMDH: 1933-0416).

Conclusions

Although there are no surviving contrabassoons by Lotz, documentary evidence suggests that he was the first of the Viennese makers to begin producing the instrument in the classical era. The early date of this – at least 1785 – also indicates that he began making this instrument before he took up residence in Vienna, and it may well have been an innovation he began whilst living in Pressburg. While the section on bassoons has demonstrated that, although a skilled maker of the instrument, Lotz was not as active in pursuing innovations on that instrument as other makers such as August Grenser, his apparent development of the classical contrabassoon mirrors his interest in developing lower pitched members of the
woodwind family as evidenced in his work on basset horns. Lotz’s early work on the
contrabassoon lead to its inclusion in major works of the 18th century, and the further
development of the instrument by some of the most well-known Viennese makers of
the 19th century, such as Kaspar Tauber and Martin Lempp.
Chapter 5

Flutes

Introduction

A key problem faced in any comparative study of flutes must be the current lack of understanding of generalized lines of development and trends in flute making. As Jane Bowers explains:

Until detailed studies have been made of the work of individual makers, clear profiles provided of their instrument designs and how they evolved over time, and systematic comparisons then made of the work of different makers, it will be virtually impossible to describe with any degree of precision the flute in the Classical era.¹

According to Bowers, Herbert Heyde has contributed some way to a greater understanding of flute characteristics and development with the detailed descriptions in his catalogue of flutes for the Karl-Marx Universität Leipzig.² Heyde makes comparisons between flutes from different makers and schools, such as Grenser, Koch, the Kirst school and the South German tradition, finding differences and similarities in bore diameter (of both the head and middle sections), the size and placement of the tone holes, as well as the volume and type of sound of the instruments. Heyde’s investigation

is, of course, limited to instruments in the collection and is largely confined to German flutes of the 18th century.

This chapter will attempt a similar comparison – using the same controls as those employed by Heyde in the catalogue described above – of flutes by makers already outlined in previous chapters as relevant to this study, using Lotz as a central focal point. It is intended that this will add to the understanding of flute characteristics and development in the Classical era.

Despite Bowers’ assertion that modern makers of flutes based on 18th century examples have reported to her that it is at present “...not possible to describe any definitive pattern in the overall development of the flute at that time” she goes on to elucidate some general characteristics of flute construction in the 18th century.³ According to Bowers, the size of finger holes remained largely the same throughout the 18th century, whereas embouchure holes became quite diverse in size and shape as the century progressed.⁴ Both Rod Cameron and Friedrich von Huene agree that embouchure holes generally became larger and more oval in shape, and that this was the common shape of embouchure holes during Mozart’s time.⁵

Bores, according to Ardal Powell, were generally smaller in the last quarter of the 18th century but this does not indicate a unanimous progression from larger to smaller bores, as larger bored instruments also existed at this time.⁶ Cameron suggests that, around the

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⁵ Bowers, “Mozart and the flute,” 36.
end of the 18th century the bore of the headjoint generally measured around 18.6mm, where it had measured 19mm or more earlier in the century.⁷ Larger headjoints of around 19mm remained a characteristic of English flutes throughout the century.⁸

**A flute by LOtZ**

Only one flute potentially by Lotz is known to exist, and its attribution is somewhat open to conjecture. This instrument is in the private collection of Rick Wilson in America. The flute recorded by Young in the Narodní Muzeum Prague is an error – the instrument with the corresponding number is a flute by the French maker Lott, and the museum has no record of a flute by Lotz in its collection. The flute in the Wilson Collection is the only extant instrument of Lotz which does not bear his title as *K.K. Hofinstrumentenmacher* or the location of Vienna. The stamp is a simple one, comprising [eight-petalled flower]/LOtZ/[eight-petalled flower], and without a Christian name or initial, city, or title, it is difficult on the strength of this alone to attribute it to Theodor Lotz. No other Viennese instrument in this study employs a flower device like that seen on this flute, but it is seen on a number of instruments by Doleisch and Strobach, suggesting an association with Prague and its surrounds. The possibility remains that this instrument was made by an earlier family member, possibly Anton Lotz whose identity was discussed in Chapters 1 and 4.

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Plate 5.2. Detail of stamp on ‘Lotz’ flute, Rick Wilson Collection.

According to Rod Cameron, the instrument has a bore similar to those found on flutes of the 1740s, and the instrument has a pitch of around $a' = 405$. This seems an unusually low pitch for an instrument made in Vienna in the late 18th century, as other instruments by Lotz play at around $a' = 437$, and instruments by other makers indicate that this was the common pitch for instruments in Vienna towards the end of the 18th century.

The instrument has had two cracks repaired at some point in its history, these being bound with wire in grooves incised in the wood and the embouchure hole also shows signs of wear. This attests to the instrument’s qualities and shows that it was valued by its players. Its present owner claims the instrument has a beautiful sound and an

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9 Rick Wilson, Personal Communication, July 2009.
10 Rick Wilson, Personal Communication, July 2009.
excellent third octave F, but finds some of the forked fingerings rather sharp, making intonation difficult in some keys.\textsuperscript{11}

\textbf{Evidence of flutes in Vienna}

Earlier Viennese flutes are rare, with only one example by Rockobaur extant, in the Landesmuseum Linz (Linz: Mu 139). The flute by Baur listed by Young in the Musikmuseet Stockholm is in fact a fife in G (MS: N77213),\textsuperscript{12} identical to the instrument in the Bayerisches Nationalmuseum (BNM: Mu 171). There is one other extant fife by Baur (Landesmuseum Graz: LZ M8), but there are no known flutes surviving by this maker. It will be remembered from Chapter 1 that Martin Lempp finished 250 fifes from Baur’s workshop after that maker’s death.\textsuperscript{13} This indicates a considerable focus on this type of instrument by Baur and was linked in Chapter 1 to his work for the regiments. Indeed, the majority of Viennese makers included in this study are not well represented by extant flutes. There are no surviving examples from Griesbacher, Scholl, or either of the Lempps, while two flutes survive by Hammig and one by Merklein. Only Kaspar Tauber, Franz Harrach and Stephan Koch are well represented with significant numbers of extant flutes.

This raises the question about the popularity and market for flutes in Vienna at the end of the 18\textsuperscript{th} and beginning of the 19\textsuperscript{th} centuries. Mozart certainly wrote for the instrument – it is included regularly in his symphonies and has several notable solo and chamber

\textsuperscript{11} Rick Wilson, Personal Communication, July 2009.
\textsuperscript{12} Young, \textit{4900}, 17; My thanks to Nicholas Eastop, curator of wind instruments at the Musikmuseet Stockholm, for providing me with information and a photograph of this instrument.
\textsuperscript{13} Steblin, “Viennese Woodwind Makers,” 39.
works written for it – and Haydn also used the instrument regularly. It had been a standard member of the orchestral wind section for some time. The Viennese Hofkapelle, however, did not include the flute as a regular member until 1857.\textsuperscript{14} Certainly there are no flute purchases listed among the Hoftheater bills reproduced by Hellyer.\textsuperscript{15} Presumably players were hired on a casual basis when necessary prior to this. Lotz, therefore, would not have been required to supply the court with flutes and as Harmonie ensembles – extremely popular in Vienna – did not usually make use of flutes, the demand for the instrument from makers would have been small. In employing musicians, courts and wealthy individuals would doubtless have been most interested in hiring players of instruments which could function in a number of settings, including both orchestral and Harmonie ensembles, therefore making the flute a less attractive option. The comparatively larger number of extant flutes by German makers such as August Grenser indicate that Germany was a prominent centre for flute manufacture at the time. Germany had been a centre for flute playing and making since the Baroque, with the great activity in flute playing and developments taking place at the court of Frederick the Great in the 1720s. In 1785 – the year of Lotz’s court appointment and a continuation of experimentation with basset horns and contrabassoons – Tromlitz in Leipzig was advertising a flute of seven keys.\textsuperscript{16} Despite these advances, the flute of Mozart’s Vienna remained one-keyed.\textsuperscript{17} August Grenser’s flutes are described as being slimmer and lighter than Baroque instruments, with narrow

\textsuperscript{14} Köchel, Hof-Musikkapelle in Wien, 26.
\textsuperscript{15} Hellyer, “Some Documents,” 51 – 56.
\textsuperscript{17} Bowers, “Mozart and the flute,” 34.
tapered bores tuned to favour sharp keys and voiced for a more penetrating tone.\textsuperscript{18} This greater interest in flute making and developments in the German lands may have meant Viennese players sought their instruments from German makers rather than locally.

Despite the lack of surviving examples and the apparent greater interest in the instrument in Germany, Viennese makers certainly made flutes. Friedrich Lempp mentions his ability to make them in his 1768 petition for protection and advertises them again in the \textit{Wiener Zeitung} in 1789. In their advice on Lempp’s application for protection to the Lower Austrian Government, the turner’s guild advised that Mathias Urban Thurner already made all the instruments which Lempp stated he could make,\textsuperscript{19} and this must therefore have included flutes. Scholl also advertised flutes in the \textit{Wiener Zeitung} in 1799. Rockobaur’s surviving instrument is physical evidence that he made flutes (and its appearance suggests he was skilled as a flute maker) and Baur’s recorded production, both physical and documentary, of fifes indicates involvement with members of the flute family (although no flutes were amongst the inventory of instrument offered for sale in the \textit{Wiener Zeitung} after his death in 1797). It may be, however, that these makers simply did not receive a great demand for flutes due to the evident popularity of the models offered in Germany.

\textbf{Lotz and Potter}

Although the ‘Lotz’ flute under discussion here may not have been made by Lotz himself, his 1785 \textit{Wiener Zeitung} advertisement lists them amongst the instruments he

\textsuperscript{19} Steblin, “Viennese Woodwind Makers,” 60.
offered, indicating that he did indeed make flutes. Furthermore, the instruments listed in Lotz’s workshop after his death includes “1 englische Flaute von Ebenholz.”²⁰ [1 English flute in ebony]. The presence of an English flute is interesting and will be examined further. In 1791, Friedrich Hammig placed an advertisement in the Wiener Zeitung in which he advertised flutes “…nach englischer und deutscher Art.”²¹ […]of English and German types]. In 1799 he again advertised flutes in the same publication, stating:

…Liebhabern der Flöte hiermit bekannt zu machen, daß ich jetzt dieses Instrument nach der Erfindung des Engländer Potter bearbeite, durch welche desselbe in mehr als einer Hinsicht viel gewonnen hat, da man nicht allein durch das Herausziehen des Kopfstückes alle mögliche Stimmungen machen kann, so, daß nur ein Mittelstück nöthig ist, sondern weil auch die Klappen von Metall den belederten weit vorzuziehen sind.²²

…the Connoisseurs of the flute are hereby advised that I now make this instrument following the inventions of the Englishman Potter, through which much has been gained, that one not only through pulling out the headjoint can achieve all tunings, so that now only one middle section is needed, also because the metal keys are very forward looking.

The Potter workshop was established around 1745 in London by Richard Potter (1726 – 1806).²³ In 1785 he produced a flute of four keys and patented pewter plugs as a method of sealing key holes rather than leather pads.²⁴ The pewter plugs were loosely riveted to the key-head so that they could automatically move to create the best seal when the key

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²⁰ Totenbeschauprotokoll, Wiener Stadt- und Landesarchiv.
²¹ Wiener Zeitung, 12th November, (1791), 2012.
²³ Waterhouse, New Langwill, 308.
²⁴ Waterhouse, New Langwill, 308.
was closed. The flute also had further improvements, including a metal tuning slide, foot-register, and an adjustable screw cork with gauge. Potter’s 1785 Patent (no. 1499) describes the use of the adjustable cork screw:

There is an ivory button at the top of the piece, with a screw, which moved the cork up and down. By turning the button round a small bit of ivory comes through the top of the button, and is divided into several spaces, and figured as on the sliding joints.

In a newspaper advertisement placed in The Times two years later, Potter describes the virtues of the metal tuning slide:

…the head is lined with a metal pipe, and thus prevents that expansion from the heat of the breath, which the Cognoscenti have so long lamented as an incurable evil. It is also made with a sliding joint, which draws out, to tune to other instruments rendering the flue [sic] at once portable and convenient without extra middle pieces….These new Patent Flutes have been sufficiently tried and are by no means liable to get out of order, which has heretofore been an universal and unsurmountable [sic] objection to all Flutes with additional keys: as a further satisfaction if any of the above improvements should fail at anytime, they will be rectified free of expense. These instruments are the best calculated for exportation, particularly for warm climates, as the keys stop without leather.

The English flutes, distinguished form the German types, described in the Viennese advertisements clearly refers to the refinements made by Potter, including additional keys, a metal lined headjoint, an ivory screw for adjusting the position of the cork in the

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28 Quoted in Ford, “Richard Potter’s Flutes,” 308.
headjoint, and pewter plug keys. As the instruments in Lotz’s workshop inventory in 1792 included an English flute, it may be that this instrument had similar features. As the maker of the instrument is not recorded it is not possible to determine if the flute was made by Lotz himself or obtained by him as a model. Certainly the flute attributed to him in the Wilson Collection shows none of the features of an English flute, but as the stamp must predate the mark used by Lotz after his 1785 appointment (and consequently after Potter’s patent) this is not indicative of Lotz’s involvement or otherwise with Potter style flutes. The advertisements from Hammig mentioned above date from either shortly before or after Lotz’s death, suggesting that Lotz may have been the first of the Viennese makers to investigate and experiment with the innovations made by Potter around 1785. In light of this it is important to note that, only a year after Hammig’s second advertisement, in 1800, Lotz’s former pupil Scholl also advertised “…Flöten nach neuer englischer Art”29 [flutes in the new English style]. Franz Harrach also placed an advertisement in 1802 in the Wiener Zeitung, claiming he had been the first Viennese maker to produce flutes in this style and had been working on the design since 1788.30 Whilst Harrach’s advertisement may be a genuine defence of his claim to introducing the design, his announcement almost ten years after Hammig’s first advertisement has more the appearance of ‘band-waggonism’ than any genuine claim on the design. As no further advertisements by Lotz after his 1785 announcement are known, there is no further evidence to indicate whether or not he made flutes in the English style. Considering Hammig’s involvement with the English style of flute it may be necessary

29 Wiener Zeitung, 31st May, (1800), 1799.
to now reconsider this maker in terms of a possible professional or personal connection with Lotz.

**Potter’s influence in Vienna**

As Von Huene notes that pewter plugs in the style of Potter are found on several Viennese instruments, the instruments in this study will be examined for these characteristics in order to gain an understanding of the prevalence of the adoption of English style instruments in Vienna. As has already been stated, the possible Lotz flute has none of the characteristics of a Potter flute. Neither does the flute by Rockobaur, which also clearly predates Potter’s innovations. Of the eight other Viennese flutes examined, all but three show the influence of Potter’s design. Interestingly, two of the flutes which do not are by Hammig (Giovanni Varelli private collection; flute d’amour, Linz: Mu 174). However, despite showing influences from Potter, not all the flutes employ all of Potter’s devices. The flute by Tauber in Leipzig (Leipzig: 1254) for example, has a metal lined headjoint forming a tuning slide and a screw in the ivory cap, but, while the flute has four keys, these are flat and square rather than pewter plugs. This instrument is further unusual in Tauber’s output in being made entirely from ivory. Another flute by Tauber, however, in the Händel-Haus collection (HH: MS-339), does make use of the Potter design on its four keys.³²

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³² Heyde, Händel-Hauses, 350-351.
Plate 5.3. Flute by Kaspar Tauber (Leipzig: 1254), showing metal tuning slide and detail of ivory screw.

Perhaps an earlier instrument than the Tauber flute shown above, the flute by Harrach in Brussels (MIM: 3568) has only one key but which is representative of the pewter plug design. The headjoint also has a metal tuning slide but the cap at the top of the headjoint is now missing.
Plate 5.4. Flute by Franz Harrach (MIM: 3568), showing metal tuning slide and detail of Potter style key.

Other Harrach flutes (not measured for this study but consulted by catalogue entries and photographs) also use pewter plugs to seal the keys. These include two instruments in the Landesmuseum Linz (Linz: Mu 75 and Mu 101). Of these, the boxwood instrument (Mu 101) appears to be the earlier with fewer keys. In addition, the metal tuning slide in the headjoint appears to be a later addition.\(^{33}\) Although fitted with a tuning slide, this flute also has four alternative right hand sections of differing lengths.

\(^{33}\) Young, *Landesmuseum*, 92.
Of the three flutes examined by Stephan Koch examined, all had pewter plugs fitted to the key-heads. All three instruments are also fitted with a tuning slide. The instrument in Göttingen exhibits the additional refinement of raised pewter bushings in the tone holes, providing a sharper edge on which the key-head can seal.

Comparisons – body and key shape

The flute by ‘Lotz’ is made entirely of boxwood and is unadorned by ivory ferrules as found on his extant clarinets and basset horns. On the wooden ring mounting the single key, the flute has a single incised turned line as decoration – a device which has been identified with Vienna and its surrounding areas in previous chapters. The key is of brass and the spring is attached to the key itself and may be a later repair. While measurements for this instrument have not been forthcoming, it can be seen that the embouchure hole is relatively round, as opposed to the large oval bores identified above as being synonymous with the late 18th century. This may indicate, as suggested by Cameron, that this is a much earlier instrument.

Plate 5.5. Detail of key and mounting of ‘Lotz’ flute (Wilson Collection).
The flute by Rockobaur in Linz (Linz: Mu 139) also has a rounded rather than oval embouchure hole. This instrument, equipped with four alternative left hand sections of different lengths, is perhaps the most finely finished and sophisticated of Rockobaur’s instruments in this study. It is also made of boxwood but has a very dark stain. Unlike the ‘Lotz’ example, it has ivory ferrules at the joints as well as an ivory cap on the headjoint and end to the foot. The turned decoration at the joints is similar to that found on the ‘Lotz’ instrument, but the shape of the swellings around the joints is more angular. The single key is of silver and the spring attached to the key is likely to be a later repair. The shape of the key and the notches found on its upper curve are similar to those found on the ‘Lotz’ instrument, but this latter flute lacks the second pair of notches found on the Rockobaur instrument. The wooden ring mounting the key on the Rockobaur flute is completely different in profile to the Lotz example and lacks the turned incised line.

Plate 5.6. Flute by Rockobaur (Linz: Mu 139).
Comparisons – tone hole and embouchure size

When examining the tone hole areas of the flutes in this study, there is little evidence of trends towards smaller or larger tone holes according to the date of the instruments, with measurements approximately the same from early instruments such as Rockobaur to the later instruments by Koch. This confirms the observation made by Bowers earlier in the chapter.\(^\text{34}\) Instruments by Koch and Harrach have a tendency towards slightly larger tone holes, but this is usually no more than 5 or 10mm\(^2\) and shows nothing like the variation in size found between makers, regions and time periods exhibited by clarinets and basset horns. Although measurements are lacking for the ‘Lotz’ flute, this similarity between such diverse instruments suggests that such measurements would do little to assist in identifying this instrument as the work of Lotz or another.

\(^{34}\) Bowers, “Mozart and the flute,” 36.
Table 5.1. Tone hole areas for flutes measured in this study. All tone hole sizes are in mm².

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rockobaur Linz: Mu 139</td>
<td>34.2</td>
<td>32.6</td>
<td>28.6</td>
<td>34.2</td>
<td>32.6</td>
<td>19.6</td>
</tr>
<tr>
<td>Tauber Leipzig: 1254</td>
<td>35.7</td>
<td>36.3</td>
<td>27.8</td>
<td>34.7</td>
<td>34.7</td>
<td>23.7</td>
</tr>
<tr>
<td>Harrach Linz: Mu 75</td>
<td>42.4</td>
<td>41.8</td>
<td>31.4</td>
<td>41.2</td>
<td>41.8</td>
<td>24.4</td>
</tr>
<tr>
<td>Harrach Linz: Mu 101</td>
<td>36.6</td>
<td>39.6</td>
<td>29.0</td>
<td>37.6</td>
<td>37.9</td>
<td>30.4</td>
</tr>
<tr>
<td>Harrach MIM: 3568</td>
<td>37.9</td>
<td>37.4</td>
<td>27.3</td>
<td>39.0</td>
<td>40.1</td>
<td>24.8</td>
</tr>
<tr>
<td>Koch Prague, NM: 338E</td>
<td>35.2</td>
<td>37.4</td>
<td>30.7</td>
<td>37.4</td>
<td>37.4</td>
<td>23.3</td>
</tr>
<tr>
<td>Koch GAU: 335</td>
<td>34.2</td>
<td>35.2</td>
<td>29.7</td>
<td>37.4</td>
<td>33.2</td>
<td>21.6</td>
</tr>
<tr>
<td>Koch Berlin: 4982</td>
<td>34.7</td>
<td>37.4</td>
<td>28.3</td>
<td>40.7</td>
<td>36.3</td>
<td>23.7</td>
</tr>
</tbody>
</table>

There is a noticeable increase in size from the earliest to latest instruments, however, when the area of the embouchure hole is examined. Although the instruments examined exhibited no noticeable tendency towards ellipticism, as was suggested as a trend of the late 18th century by Cameron and Von Huene, this hole on the instruments by Koch is as much as 26mm² larger than the embouchure hole on the Rockobaur flute. The increase in size begins with instruments by Tauber, which already measure more than 10mm² than the Rockobaur instrument.

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Table 5.2. Embouchure areas of Viennese flutes measured for this study.

<table>
<thead>
<tr>
<th>Embouchure hole (mm²)</th>
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<tbody>
<tr>
<td>Rockobaur Linz: Mu 139</td>
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<tr>
<td>Tauber Leipzig: 1254</td>
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<tr>
<td>Harrach Linz: Mu 75</td>
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<tr>
<td>Harrach Linz: Mu 101</td>
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<tr>
<td>Harrach MIM: 3568</td>
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<tr>
<td>Koch Prague, NM: 338E</td>
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<td>Koch GAU: 335</td>
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<td>Koch Berlin: 4982</td>
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</tbody>
</table>

Comparisons – bore diameter and profile

Comparisons of bore shape reveal two distinct groups. Earlier instruments, represented by Rockobaur (Linz: Mu 139), Hammig (Linz: Mu 174 – this instrument is a *flute d’amour* in A) and Tauber (Leipzig: 1254) reduce in bore diameter to the top of the foot, then expand again slightly to the end of the foot. Later instruments, represented by Koch (Prague, NM: 338E and Berlin: 4982), after remaining cylindrical in the headjoint (as do all other instruments), exhibit a steady taper the entire length of the bore to the end of the foot.
It can also be observed in this graph that the Rockobaur instrument exhibits a consistently larger bore diameter than the Tauber flute, which may indicate a tendency towards smaller bores in Vienna in the early 19th century. The larger bore of the Hammig flute (Linz: Mu 174) may be a result of its nominal pitch of A. Without a larger sample of instruments this is difficult to conclusively prove, however.
Comparisons of conicity do not demonstrate these differences to the extent seen on the graphs. Conicity is measured from the end of the headjoint (which is cylindrical for its entire length) to the smallest bore measurement which, in the case of the earlier instruments, occurs at the top of the foot and for the later instruments at the end of the foot. The bores of the Koch examples are slightly less conical than the Tauber and Hammig examples, as the conical sections of their bores are longer. Nevertheless, the Rockobaur flute, which is conical only to the top of the foot, has a similar conicity to the two Koch examples.
Table 5.3. Bore conicity of Viennese flutes measured for this study.

<table>
<thead>
<tr>
<th></th>
<th>Conicity</th>
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</thead>
<tbody>
<tr>
<td><strong>Rockobaur</strong></td>
<td>0.018</td>
</tr>
<tr>
<td><strong>Linz: Mu 139</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Taubner</strong></td>
<td>0.022</td>
</tr>
<tr>
<td><strong>Leipzig: 1254</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hammig</strong></td>
<td>0.02</td>
</tr>
<tr>
<td><strong>Linz: Mu 174</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Koch</strong></td>
<td>0.018</td>
</tr>
<tr>
<td><strong>Prague, NM: 338E</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Koch</strong></td>
<td>0.017</td>
</tr>
<tr>
<td><strong>Berlin: 4982</strong></td>
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</tbody>
</table>

**Conclusions**

The two surviving flutes by Hammig (Flute in D, Giovanni Varelli Private Collection and the *flute d’amour* by Hammig in Linz: Mu 174) show some marked similarities with the ‘Lotz’ instrument, principally in their boxwood construction without additional materials for the ferrules, the shape of the wooden swellings around the socket and tenon joints and their simple yet elegant form. This may further suggest that a closer investigation of Hammig’s life could reveal a currently unknown connection between the two makers. The instruments do differ, however, in the mounting of the single key.
Plate 5.8. Flutes by Hammig; Top: Flute in D (Giovanni Varelli Private Collection).\textsuperscript{36} Bottom: Flute d’amour in A (Linz: Mu 174).

Without more surviving early Viennese flutes, it is difficult to determine with any certainty if the flute in Wilson’s collection is by Theodor Lotz or is the work of an earlier family member. The lack of instruments by Lotz from before his appointment as court instrument maker also makes the provenance of the instrument difficult to determine on the grounds of its stamp. The investigations into extant Viennese flutes demonstrated above suggest that parameters such as tone hole size would not assist in determining this flute as either a mid- or late-18\textsuperscript{th} century example. The single surviving flute by Rockobaur, when compared with later instruments, indicates that a smaller embouchure hole and larger bore diameter may be characteristic of earlier instruments and, were these available for the ‘Lotz’ flute may go some way to identifying its maker. However, as Jane Bowers states that the design of the flute changed little from the mid-1730s to the end of the 18\textsuperscript{th} century,\textsuperscript{37} such investigations may prove inconclusive without substantiating information such as other instruments with similar stamps.

\textsuperscript{36} Paolo Besutti, Renato Meucci et al., \textit{Gli strumenti a fiato nell’epoca di Mozart}, (Mantua: Publi Paolini, 2006), 35.
\textsuperscript{37} Bowers, “Mozart and the flute,” 36.
Nevertheless, while this flute cannot be conclusively attributed to Theodor Lotz, there is equally little evidence to suggest it is not. That Lotz made flutes is apparent from his newspaper announcement and workshop contents. The involvement of his pupil Kaspar Tauber with the flute indicates an interest in this instrument within the workshop. It can also be argued that Lotz’s interest in the instrument included investigations into developments in other countries, such as those made by Potter in England, and that he may have been the first Viennese maker to contemplate the production of such instruments and introduce them to the Viennese market.
Chapter 6

Oboes and Cor anglais

Introduction

As with flutes, oboes are amongst the most under-represented group of instrument by Lotz, with only two fragments remaining. These are:

- Oboe (fr.) Museo Civico, Modena: 101
- Oboe (fr.) Ferdinandeum, Tiroler Landesmuseen, Innsbruck: M/I 217.

Of these, the instrument in Innsbruck has only recently come to light.\(^1\) It is difficult to conclusively explain this paucity of surviving instruments, and indeed others not yet discovered may exist, but an attempt will be made in this chapter to explain this apparent lack of interest in oboe making from Lotz. That the instrument was unpopular in Vienna at the time, as was suggested with flutes in Chapter 5, is not supported by the evidence. Although solo works for the instrument do not abound from Viennese composers, it appears regularly in chamber and orchestral works from the period. Furthermore, there exists a significant number of oboes from Viennese makers contemporaneous with or slightly earlier than Lotz – four from Rockobaur, six from Jakob Baur and eight from Friedrich and Martin Lempp together. The attribution of the instruments by these two makers will be discussed below. In addition, there is an oboe and an *oboé da caccia* extant by M. Deper, the maker whose suggested Viennese origins have not yet been conclusively confirmed by archival or organological investigations. As measurements

\(^1\) I am grateful to Thomas Kiefer for informing me of this instrument, after he observed it in the museum in Innsbruck.
for the two upper sections by Lotz have not been forthcoming, parameters such as tone hole size and bore shape, which have been employed in the comparative discussions in previous chapters, will not be relied upon here. Instead, external features such as the profile of the baluster, the turned decoration and the material and shape of the ferrules will be used as the comparative parameters.

The oboe in Vienna in the 18\textsuperscript{th} century

There are no known oboes surviving from Griesbacher or Scholl, and three from Kaspar Tauber. This reinforces the hypothesis presented in earlier chapters that two schools of instrument making existed in Vienna during the last two decades of the 18\textsuperscript{th} century, possibly not in competition, but having a different focus in their outputs. For Lotz and associated makers this was clarinets, basset horns and bassoons, while the group of makers around Rockobaur and Jakob Baur generally produced more oboes and flutes, as well as fifes and other instruments more closely associated with the military regiments.

Lotz’s focus on clarinets and basset horns rather than oboes must be explained to a great extent by his involvement with Mozart and Stadler. Furthermore, as a performing clarinettist himself, he would naturally show a greater predisposition towards the construction and development of this instrument than any other. Mozart clearly appreciated Stadler as a performer and became avidly interested in his instrument. Although Mozart was acquainted with a number of oboists throughout his life, and indeed wrote compositions for some, it seems none made quite the impact of Stadler, nor were the unique circumstances in operation of a performer keen to experiment with his instrument, a composer willing to write a composition for it, and an instrument maker
willing to create the final product to make this possible, as was the case with the basset clarinet and basset horn. Nevertheless, it is valuable to here examine the oboists known to Mozart and his relationship with them, and particularly the compositions which resulted in order to determine if Lotz had any influence on these works or the instruments played.

Mozart wrote six works in which the oboe takes a leading role, as well as four chamber works with prominent oboe parts and obbligatos with voice. His association with writing for the oboe began early and lasted intermittently through his life, with his first composition for the oboe at age 12 in 1768, and the last in 1791. Throughout his life Mozart worked with a number of oboists, including Johann Christian Fischer (1733 – 1800), Gioseffo Secchi (fl. 1755 – 1784), Giuseppe Ferlendis (1755 – 1810) (for whom Mozart composed the concerto in C, K271K) and Joseph Fiala (1749/50 – 1816). But the only oboist for whom Mozart wrote consistently was Friedrich Ramm (c. 1744 – 1813) whom Mozart met in Mannheim in 1777 where he was oboist in the orchestra. It was for Ramm that Mozart wrote the oboe quartet KV 370/368b.

We do not know who made Ramm’s oboe, and amongst the wide variety in the German lands at the time it would be impossible to speculate with any degree of accuracy. It is perhaps interesting to consider, however, that the obbligato oboe part in the opera scena ‘Popoli di Tesaglia’ K316, written in 1779 for Ramm ascends no higher than $d''$. 

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2 Haynes, “Mozart and the oboe,” 45.
3 Haynes, “Mozart and the oboe,” 45.
4 Haynes, “Mozart and the oboe,” 45.
5 Haynes, “Mozart and the oboe,” 45.
6 Haynes, “Mozart and the oboe,” 45.
whereas the oboe quartet of 1781 extends a minor third higher to $f''$.\textsuperscript{7} Clearly in the intervening years either Mozart, Ramm, or an unknown oboe maker had become interested in facilitating the higher notes of the oboe. Mozart never wrote higher than $d'''$ (and then only rarely) in subsequent works, and advised Thomas Attwood in 1785-86 to not exceed $e'''$ when writing for the oboe, thus indicating that extensions of this were closely associated with Ramm and his instrument.\textsuperscript{8} However, it is believed that all Ramm’s pieces from Mozart were conceived for an oboe with two keys,\textsuperscript{9} and the development of the high notes must have been achieved through some other technique, either relating to reeds, the bore or tone holes of the instrument or Ramm’s unique skills as a player.

As a child on tour in The Hague, Mozart had met and heard possibly the most famous oboe virtuoso of the time, Johann Christian Fischer (1733 – 1800),\textsuperscript{10} and this experience may have gone some way to influencing Mozart’s ideas on the capabilities of the instrument. Mozart heard Fischer again in Vienna in 1787 but, despite the wide praise of his playing, Mozart was critical,\textsuperscript{11} suggesting this player had little impact on Mozart’s interest in the instrument at the time he was known to be associated with Lotz. None of the oboists with whom Mozart is associated lived or worked in Vienna and any collaboration or association with Lotz is unlikely and impossible to prove.

\textsuperscript{7} Haynes, “Mozart and the oboe,” 47.
\textsuperscript{8} Haynes, “Mozart and the oboe,” 47.
\textsuperscript{9} Haynes, “Mozart and the oboe,” 47.
\textsuperscript{10} Haynes, “Mozart and the oboe,” 47.
The oboe common in Vienna in the last two decades of the 18th century, and indeed elsewhere in Europe, had two keys - for C and E flat - and there are many indications that the oboe largely remained a two key instrument well into the 19th century. Indeed, Vogt’s *Méthode pour hautbois* of about 1813 is the first of its kind to show an instrument with anything more than two keys. Sellner’s *Oboe Schule* of 1825 is for an instrument of ten keys. Sellner’s innovations to the oboe with the maker Stephan Koch took place outside of the period with which this study is concerned and will not be dealt with in detail here.

**Physical characteristics of 18th century oboes**

The bore and tone holes of the classical oboe are generally somewhat smaller than those found on instruments of the preceding generations. The size of the tone holes is in proportion to the resistance against which the player plays – the smaller the tone holes the greater the resistance. The resistance of the reed is then adjusted accordingly to compensate for the lack or presence of resistance in the instrument. A baroque oboe therefore requires a hard reed to counteract the lack of resistance from its large tone holes, while the classical oboe requires a soft and narrow reed.

The classical oboe responds better in the upper register than the baroque oboe, with the notes easier to sustain even in soft dynamics, and this is a direct result of the size of the

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15 Haynes, “Mozart and the oboe,” 43.
16 Haynes, “Mozart and the oboe,” 56.
17 Haynes, “Mozart and the oboe,” 56.
tone holes, bore and reed used on the classical oboe. It is probable then, that the modifications to Ramm’s oboe (if this occurred) enabling the exploitation of the upper register in the oboe quartet KV370/368b were centred around these areas on the instrument.

Like many early clarinets, the earliest oboes had the possibility to be played right or left hand uppermost with an alternate key for E flat, operated by the little finger, mounted on either side of the central C key. The C key is distinguished by a swallowtail touchpiece, enabling access in either hand position, as was identified on central keys of early basset horns and bassoon in Chapters 3 and 4. It will be remembered from Chapter 3 that the presence of this key on early basset horns (and its position reverse to that found on the clarinet of the time) facilitated oboists using this as a doubling instrument. After about 1750, however, few oboes were made this way, retaining the E flat key for R4 and the central key for C, which was still generally made with a swallowtail touch despite the fact that the need for this no longer existed. The earliest oboes in this study have two keys, and are therefore likely to date sometime after 1750. It is perhaps significant to consider that the oboes and cor anglais by Rockobaur, one of the earliest makers in this study, have only two keys and can only be played with the left hand uppermost, whereas his clarinet discussed in Chapter 2 was made with the provision of an alternate hole for the little finger of either hand.

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The two fragments by Lotz

Both extant upper sections from Lotz have been joined to lower sections and bells from other makers. Whether or not the instruments were used like this is unknown, but both instruments entered their respective collections in this way.\textsuperscript{20} The instrument in Modena (Modena: 101) is connected to a bell and lower joint stamped B.KOHLERT/WIEN.\textsuperscript{21} Little is known of this maker, although he is thought to have been active in Vienna in the early 18\textsuperscript{th} century.\textsuperscript{22} The bell profile, however, has little in common with the early bells of Viennese oboes such as those found on instruments by Rockobaur and Friedrich Lempp. Its pronounced lip and angular profile is more similar to those found on instruments of the first two decades of the 19\textsuperscript{th} century, such as by Martin Lempp and Friedrich Hammig, suggesting the lower half of the instrument is considerably later than the upper. The single touchpiece on the central C key, rather than a swallowtail, also indicates a later date. Even greater similarities can be detected between the bell of this instrument and that on an oboe by Doleisch (Prague, NM: 324E, dated 1781) and on a probably later instrument by I. Bauer (Prague, NM: 136E), another Czech maker. This suggests a link between Kohlert and Prague and, as the Doleisch bell is dated within Lotz’s lifetime, may mean the three sections of the instrument are approximately contemporaneous and that the instrument was used in this way at the time. The two cross keys on the lower section are likely to be a later addition.

\textsuperscript{20} I am grateful to the two museums for sharing their catalogue information on these instruments.
\textsuperscript{21} I am grateful to Albert Rice for providing me with information and photos of this instrument, after viewing it at my request.
\textsuperscript{22} Waterhouse, \textit{New Langwill}, 213.
Plate 6.1. Oboe by Lotz and B. Kohlert (Modena: 101, image courtesy of Albert Rice) with bells by Doleisch (Prague, NM: 324E, dated 1781), I. Bauer (Prague, NM: 136E), Hammig (KHM: SAM 321) and Martin Lempp (MIM: 963).

The upper section by Lotz on the Modena instrument is stamped THEODOR/LOTZ/2.\textsuperscript{23} The absence of Lotz’s title as court instrument maker and the Hapsburg eagle on this stamp does not in itself indicate that the instrument predates Lotz’s appointment. Several other of his surviving instruments have the same stamp, usually on middle sections between finger holes (as this stamp is placed) and the full stamp is found elsewhere on the instrument, usually the bell in the case of clarinets, the \textit{buch} on basset horns and the butt or bell on bassoons. This stamp is in no way similar to the stamp

\textsuperscript{23} My thanks to Albert Rice for providing the details of this stamp.
found on the ‘Lotz’ flute discussed in Chapter 5, and is missing the flower motif also found on that instrument.

The instrument in Innsbruck (Innsbruck: M/I 217) is also stamped THEODOR/LOTZ/2, and thus matches the stamp on the instrument in Modena exactly. There can be little doubt, therefore, that both sections were made by Lotz. The lower section of the instrument is stamped by an unknown maker and appears to read CINONFI (?). The numbers on both the Lotz upper sections indicates the original presence of additional upper sections of differing lengths to accommodate changes in pitch. The oboe by Friedrich Hammig in the Kunsthistorisches Museum Wien (KHM: SAM 321) has three upper sections of different lengths extant, each numbered 1, 2 and 3 respectively.

Comparisons – baluster shape

Although both upper sections have an identical stamp and must have been a product of Lotz’s workshop, the two sections have a number of differences when viewed side by side.

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24 Catalogue record provided courtesy of the museum.
25 Provided by the museum from their records.
Plate 6.2. Upper sections of oboes by Lotz (Modena: 101(image courtesy of Albert Rice) and Innsbruck: M/I 217 (Image courtesy of museum)).

While both oboes have three tone holes, with the third a double hole, the oboe in Modena (top) is fitted with an ivory ferrule at the reed-well, whereas the Innsbruck instrument (bottom) has a horn ferrule which extends to the decorative turning at the top of the baluster. The turning on this instrument is considerably more elaborate and profuse than on the Modena example, where only two single rings serve as the decorative turning. The baluster on the Modena instrument is more angular than the Innsbruck oboe, which is more onion-shaped. Yet both sections were undoubtedly made by Lotz. The differences may be explained by the date the instruments were made, and a comparison with other Viennese oboes may assist in determining this. The instrument in Innsbruck, with its more rounded baluster, has its counterparts in earlier and contemporaneous Viennese instruments.
Plate 6.3. Detail of balusters from Viennese oboes. (From left to right: Lotz, Innsbruck: M/I 217; Rockobaur, Linz: Mu 45; Friedrich Lempp, Yale: 3413.80; Friedrich Lempp, Linz: Mu 120).

While the Innsbruck instrument shares a baluster shape with these instruments, particularly the Friedrich Lempp oboe in Linz, it can be seen from the above images that Lotz’s approach to the turned decoration is quite different from the other makers. Although similar in placement and concept, Lotz’s turned rings are finer and have deeper recesses on either side. It shares this with later Viennese instruments.
Plate 6.4. Baluster detail from Viennese oboes (from left to right: Lotz, Innsbruck: M/I 217; Martin Lempp, MIM: 963; Tauber, SMM: 64-22).

These later instruments, however, appear to have greatly enhanced Lotz’s design, with even larger turned rings and deeper recesses. The instruments with which the Innsbruck example has the greatest affinity is an instrument by Doleisch (Prague, NM: 144E) dated 1787, and an instrument by Hammig (Linz: Mu 121). The instrument by Doleisch dates from Lotz’s active years and indicates this instrument dates from around this time, and the similarity with the Hammig instrument may be further evidence that an investigation of these two makers could lead to a greater understanding of their relationship to each other, as was suggested in connection to the flute d’amour by Hammig in Chapter 5. It may be theorized that, as discussed in previous chapters, Lotz trained each of his pupils with a specialty which can be discerned from their surviving output – for Griesbacher clarinets and basset horns, Scholl basset clarinets and bassoons, Tauber bassoons and flutes, and possibly Hammig flutes and oboes. Lotz’s design nevertheless remains
individual, and none of the instruments share the large horn section around the reed-well.

**Plate 6.5.** Balusters of oboes by Lotz (Innsbruck: M/I 217), Doleisch (Prague, NM: 144E, 1787) and Friedrich Hammig (Linz: Mu 121).

Interestingly, the only other oboe examined for this study which has the area from the reed-well to the upper turned rings made from a different material is an ebony instrument by Prudent (Leipzig: 1326). Only the upper section of this instrument remains, and the section from the reed-well to the upper turned rings is made from ivory, much as the Lotz Innsbruck example is made from horn. Most cor anglais in this study, which will be discussed in greater detail later in this chapter, also employ this device.

The other upper section by Lotz (Modena: 101) is equally difficult to place within the surviving Viennese examples of the instrument, sharing as the Innsbruck example did characteristics of both earlier and later instruments. Its more angular baluster is seen on later instruments by Hammig, whereas its simple turned decoration is more reminiscent of the earlier instruments by Rockobaur and Friedrich Lempp. Once again, its use of an additional material – in this case ivory – makes it distinct from most other Viennese examples.
Plate 6.7. Balusters of oboes by Lotz (Modena: 101) and Friedrich Hammig (KHM: SAM 321).

The only other Viennese instrument in this study which has a similar ivory ring at the reed-well is an oboe in Stift Seitenstetten which this author has attributed to Martin Lempp.\textsuperscript{26} Amongst the reasons for this instruments’ attribution is the comparatively large number of keys (at least six visible in the photograph, which must be original as they are mounted in wooden blocks), angular baluster, and angular bell with a large lip, as identified on later instruments such as those by Kohlert and Bauer above (see Plate 6.1). Although few instruments in this study have an angular baluster, pronounced angular turning of the ferrules is a feature of later instruments, which will be discussed more fully later. This may therefore indicate that the Lotz oboe in Modena is of a later date than the instrument in Innsbruck. The Martin Lempp oboe in Stift Seitenstetten

\textsuperscript{26} My thanks to Ernst Schlader for bringing this instrument to my attention and providing a photograph.
also has ivory ferrules at the top of the lower section and bell. Bate suggests that ferrules of ivory and bone are much less predominant on oboes than on other contemporary wind instruments, the joints instead being reinforced by extra thicknesses of wood.\textsuperscript{27} Given the presence of these ferrules on the Martin Lempp instrument and the similarity with the ivory ferrule at the reed-well to the Lotz Modena example, it may be posited that the Lotz instrument also had similar ferrules at the top of its lower section and bell when it was complete. The use of this luxury material would be in keeping with its use on Lotz’s clarinet and basset horns and reinforces the arguments for the status of Lotz’s instruments made in Chapter 2.

Plate 6.8. Instruments in Stift Seitensetten. The oboe by Martin Lempp is the second oboe at the rear. Photograph provided by Ernst Schlader.

Attributions of Lempp oboes

It is perhaps necessary to examine the attribution of the three Lempp oboes in this study in order to add veracity to the theories put forward above. There are eight known extant examples of the instrument from this family, three of which have been examined for this

\textsuperscript{27} Bate, \textit{The Oboe}, 132.
study and two more examined by photographs. The instrument listed by Young in the Stadtmuseum Munich\textsuperscript{28} was not found during a visit there in April 2010 and the museum has no record of it. While the stamps on the instruments are not identical, there is little to separate them and indicate either Friedrich or Martin as the maker. The oboe in Linz (Linz, Mu: 120) is the only Lempp instrument in this study (of any kind) on which the Hapsburg eagle does not form part of its stamp. The listing in Philip Young’s 4900 Historical Woodwind Instruments which records the eagle in the stamp is in error and Young does not include the eagle in his subsequent catalogue of the collection in the Landesmuseum Linz, nor was any evidence of it found during this author’s examination of the instrument. The absence of the eagle could suggest it either represented the work of Friedrich before his 1768 protection license, or the work of Martin either before his Citizen’s Oath of 1798 or his court appointment of 1800. It does, however, share the city name in a scroll which is also found on the bassoon in the Technisches Museum which was identified as the work of Friedrich in Chapter 4. This is one indicator that the oboe in Linz (Mu 120) is probably by Friedrich. The instrument in Brussels (MIM: 963) is also marked with a Hapsburg eagle, but of a different kind to that seen on other Lempp instruments. The eagle itself is smaller, less elaborate, lacking a crown, and the body is covered by a shield. Similar eagles can be seen on other Viennese instruments of the first two decades of the 19\textsuperscript{th} century, particularly by Tauber.

\textsuperscript{28} Young 4900, 144.
Plate 6.9. Details of stamps from Lempp oboes (from left to right: Friedrich Lempp (Yale: 3413.80); Friedrich Lempp (Linz: Mu 120); Martin Lempp (MIM: 963)).

The balusters on the three Lempp oboes examined offer further information as to their makers which can be added to that gathered from the stamps. The baluster on the oboe in Brussels (MIM: 963), attributed here to Martin, is smoother in shape than the other two instruments and has slightly more elaborate turned decoration with deeper recesses. The larger turned rings are more prominent and narrower than on the other examples. The other two instruments (Linz: Mu 120 and Yale: 3413.80), while differing slightly – the instrument in Yale is perhaps slightly less angular than the Linz example – share enough in common to suggest a common maker. This therefore indicates that the instrument in Yale is by Friedrich. In general both these instruments show a simpler approach to turned decoration than is demonstrated on the instrument attributed to Martin.
There is greater variation, and therefore less definition, in the ferrules of the right hand sections of the three instruments. As can be seen, each is quite different. The instrument by Martin is more prominent and angular than that seen on either of the other two instruments. Similarly prominent and angular ferrules can be found on instruments by Hammig and Tauber, of a similar generation to Martin, further substantiating the hypothesis that the instrument in Brussels was made at a later date, and therefore by Martin, than the instruments in Linz and Yale. The smoother and less prominent ferrule on the instrument in Linz, however, as well as the turned decoration on the upper part of the right hand section, has much more in common with an earlier Viennese instrument by Rockobaur, placing it in the active years of Friedrich. The instrument in Yale shows the greatest similarity in shape with the Rockobaur instrument. This may suggest it is
the earliest of the three oboes examined and is by Friedrich. The instrument in Linz, therefore, may be seen as a transitional instrument between father and son.

Plate 6.11. Ferrules from the lower sections of Lempp oboes, with comparisons to oboes by Tauber, Hammig and Rockobaur. (Top row from left to right: Friedrich Lempp, Yale: 3416.80; Friedrich Lempp, Linz: Mu 120; Martin Lempp, MIM: 963: Bottom row left to right: Rockobaur, Linz: Mu 45; Tauber, SMM: 64-22; Hammig, KHM: SAM 321).
A further indicator that the Lempp oboe in Yale may be the earliest of the three oboes studied from this family is the external profile of the bell. It can be seen that it again shares with the Rockobaur a smoother ferrule with the swelling positioned high and close to the top of the socket, and a less pronounced outer lip to the bell. The swelling on the instrument by Martin is positioned lower down with a more pronounced and angular lip to the bottom of the bell, similar to instruments by Hammig and Tauber. This was also identified as a characteristic of the bell by Kohlert joined to the Lotz instrument (Modena: 101) which in turn was compared to a late oboe by I. Baur (Prague, NM: 136E). The instrument in Linz is again between the two, but in general shows greater similarity with the lines of the Yale instrument. Young suggests that the horn rings on this bell are later repairs. The horn ring at the bottom of the bell is indeed very unusual in oboes, although a horn ring at the top ferrule is less so. If later repairs, both have been skillfully and neatly added.
Plate 6.12. Bells of oboes by the Lempp family, with comparisons to Rockobaur, Tauber and Hammig. (Top row from left to right: Friedrich Lempp, Yale: 3413.80; Friedrich Lempp, Linz: Mu 120; Martin Lempp, MIM: 963: Bottom row from left to right: Rockobaur, Linz: Mu 117; Tauber, SMM: 64-22; Hammig, KHM: SAM 321).
Of the two instruments in Stift Seitenstetten shown in Plate 6.8, one has already been attributed to Martin above, and the other is here attributed to Friedrich. One instrument has two keys, smooth ferrules, less angular turned decoration, and a smooth lip to the bell, whereas the other instrument has at least six keys, one of which is an octave key and all of which are mounted in integral wooden blocks (and must therefore be original), pronounced angular turned decoration, ferrules and bell lip. The ivory ferrules on the instrument by Martin have already been discussed above in relation to the oboe fragment by Lotz in Modena.

The tenor oboe in the Gesellschaft der Musikfreunde in Vienna, which that institution has ascribed to Martin is, in light of the above discussion, more likely to have proceeded from the workshop of Friedrich. It has in common with the instruments by Friedrich identified above a rounded baluster and ferrules with simple turned decoration and the city displayed within a scroll on the stamp. The stamp is identical to that found on the bassoon in the Technisches Museum, which was attributed to Friedrich in Chapter 4. Furthermore, the shape of its central C key is identical to that on the oboe ascribed to Friedrich Lempp in Linz (Mu: 120) and the E flat touchpiece is similar in shape to that on cor anglais by Jakob Baur, discussed below, dating it more closely to the last two decades of the 18th century.

Comparisons – tone holes and bore

Examinations of the tone hole areas of the instruments in this study revealed no discernable differences or patterns. Each instrument measured within a few mm² of the others for all the tone holes. It can therefore be concluded that there was no noticeable change in tone hole size in Vienna from instruments of Rockobaur’s time to later
instruments, such as those by Martin Lempp or Friedrich Hammig. Comparisons of conicity revealed similarly little change, with all instruments (for which this was calculable) registering no difference from the others. Bore graphs were only possible for three of the instruments studied – Rockobaur (Linz: Mu 45), and two instruments by Friedrich Lempp (Yale: 3413.80 and Linz: Mu 120). This reveals striking similarities between all three instruments, but most particularly between the Rockobaur instrument and the Friedrich Lempp Linz example. Without further examples it is impossible to state if this similarity is unique to these two makers or if such similarities would be found across all Viennese instruments.

**Graph 6.1. Comparative graph of oboe bore profiles by Rockobaur and Friedrich Lempp.**

![Graph 6.1. Comparative graph of oboe bore profiles by Rockobaur and Friedrich Lempp.](image)

**Conclusions**

Although only represented by two upper sections, it is clear from the evidence presented in this chapter that Lotz made oboes, but also that he adapted his design in the course of
his career. This is evidenced by the distinct shapes and decorations found on the two examples examined here. Although the stamps on both instruments do not include Lotz’s position as court instrument maker, their strong similarity to the truncated stamps found on other complete instruments which show the full stamp on other sections suggests that both instruments also date between 1785 and 1792. Their lack of any other kind of symbol does not identify them with the stamp on the flute discussed in Chapter 5. It is curious that only the upper section of the two instruments have survived, and that these have each been joined with the lower sections of other instruments before entering museum collections, suggesting they were perhaps used in this way. The relatively large number of surviving Viennese oboes from before, during and after Lotz’s lifetime indicates there was no shortage of interest from players for Viennese instruments, and the lack of surviving examples from Lotz may simply be explained by a lack of particular interest in the instrument on Lotz’s part. Certainly his pupils are not well represented by extant examples either, although the possibility of a connection between Hammig and Lotz has again been raised in this chapter.

COR ANGLAIS

Introduction

Lotz is somewhat better represented by cor anglais, with three known extant examples:

Cor anglais Kunsthistorisches Museum Wien, KHM: SAM 324
Cor anglais Musikinstrumentenmuseum der Universität Leipzig, 1345
Cor anglais (fr.) Museo Civico, Modena, 102-1981
Most of those makers associated with Lotz produced cor anglais – Griesbacher (one), Ehrlich (one – it will be remembered from Chapter 1 that this maker is connected to Lotz through his supposed association with Scholl) and Tauber (three), while Rockobaur and Jakob Baur also produced a significant number of these instruments – with four apiece (the Rockobaur instrument listed in Young in the Mozarteum Salzburg\textsuperscript{29} could not be found at this institution and it has no record of the instrument) – indicating a consistent and more generalised interest in this instrument in Vienna than was indicated for flutes. Perhaps significantly, no cor anglais are known from Doleisch in Prague or Strobach in Carlsbad. Neither Scholl nor Hammig are represented by extant cor anglais, but as Scholl is thought to have been connected to Ehrlich, from whom one example is known, it seems likely that he made them. Similarly, as Hammig made oboes, and advertised in 1817 that he made all kinds of wind instruments,\textsuperscript{30} it seems unlikely that cor anglais would be excluded from this list. Although his instruments have not been closely considered in this study as they are generally later than the period under consideration, the cor anglais by Stephan Koch will be briefly discussed. One of the areas this chapter aims to investigate is why Lotz, a pioneer of the angled basset horn, continued to make cor anglais in the curved form. It seems Koch was the first to begin making instruments this way in Vienna, well into the 19\textsuperscript{th} century.

\textsuperscript{29} Young 4900, 18.
\textsuperscript{30} Young, Landesmuseum, 121.
Body form

The curved form of *cor anglais* remained dominant for many years.\(^\text{31}\) The challenges of making a curved *cor anglais* were the same as those for making a curved basset horn, outlined in Chapter 3. According to Bate, there is little evidence to suggest that *cor anglais* and other large members of the oboe family were made in a similar manner to crumhorns – that is, in two longitudinal halves glued together – and cites only one known example.\(^\text{32}\) The number of basset horns constructed in this way is also quite small – Shackleton cites only three examples.\(^\text{33}\) Bate suggests this method was unfavourable for two reasons. Firstly, it would place the upper seam directly in line with the tone holes and would therefore present difficulties with undercutting.\(^\text{34}\) Secondly, the seam on the inner curve would coincide exactly with where moisture would collect during playing and thus cause problems with the glue and seal.\(^\text{35}\)

Instead instruments were frequently made, as was the case with the basset horns discussed in Chapter 3, by cutting slots in the bore, bending the now flexible wood, holding the curve in place by mounting a wooden or metal brace along the inner curve, and covering the whole with leather.\(^\text{36}\) However, Bate found that in X-raying a number of *cor anglais* in the bent form, at least four methods of achieving this shape were found.\(^\text{37}\) Amongst these, that of cutting slots in the bore was found to be the oldest.\(^\text{38}\)

\(^{31}\) Bate, *The Oboe*, 139.
\(^{32}\) Bate, *The Oboe*, 140. While Bate uses the term crumhorns, it is more likely that cornets were meant, as this method of construction is more usually associated with this instrument.
\(^{33}\) Shackleton, “Earliest Basset Horns,” 8. All of these instruments are by French makers.
\(^{34}\) Bate, *The Oboe*, 140.
\(^{35}\) Bate, *The Oboe*, 140.
\(^{36}\) Bate, *The Oboe*, 141.
\(^{37}\) Bate, *The Oboe*, 142.
German instruments of the 19th century showed this same method of construction but with the modification of a metal, rather than wooden brace on the inner curve which is screwed to each section between the notches.\textsuperscript{39}

Another variety, evidenced by a Triebert instrument from about 1850, shows the instrument constructed in several detached sections, joined together by three or four wooden ‘keys’ which bridged the joint, and which sat in a deep groove in the wall and pinned in place with wooden pins.\textsuperscript{40} Triebert, however, was not consistent with the methods he employed to make curved \textit{cor anglais}. Another instrument shows tenon and socket joints employed in order to facilitate the curve, but instead of being integral with the body of the instrument, take the form of individual tubes held in place with wooden pins.\textsuperscript{41} Five such joints were observed in one gently curving section.\textsuperscript{42} An instrument by Bimboni of Florence, from the 18th century, utilizes the same principal as the brace, but instead of one long brace the length of the instrument, it employs a number of small inserts shaped like keystones joined at their narrowest end in a similar way to dovetailing.\textsuperscript{43}

Bate sums up the findings of the X-rays:

\begin{quote}
The X-ray has confirmed that in general the bore of the bent tenor oboe passed through a series of very obtuse angles and was not a true curve, although in the latter examples a very fair approximation was achieved. In all cases, however, the smoothness and finish were those of the original boring and
\end{quote}

\textsuperscript{38} Bate, \textit{The Oboe}, 142.
\textsuperscript{39} Bate, \textit{The Oboe}, 142-143.
\textsuperscript{40} Bate, \textit{The Oboe}, 143.
\textsuperscript{41} Bate, \textit{The Oboe}, 143.
\textsuperscript{42} Bate, \textit{The Oboe}, 143.
\textsuperscript{43} Bate, \textit{The Oboe}, 143.
could be as good as in any straight instrument of the same period.\textsuperscript{44}

As with the curved bassett horn, the methods employed to achieve the curved shape were labour intensive, frequently requiring the production of small parts which served only to hold the curve in place.

**Comparisons – body and key shape**

Of the instruments with which this chapter is principally concerned – those by Rockobaur, Jakob Baur, and Lotz – all are made in the curved form. There is therefore little to separate them in terms of shape. It can be observed however, that the Lotz instruments (of which only the lower half is remaining of the Modena example) have a considerably gentler curve than the instruments by Rockobaur or Baur.

\textsuperscript{44} Bate, *The Oboe*, 143.
It can be seen in the preceding images that the instruments by Rockobaur and Jakob Baur are almost identical. They each have horn mounts at the reed-well and tenons, have a similar shape to the baluster, an identical bell profile, both keys mounted in wooden blocks, and a very similar degree of curvature. They only differ slightly in key shape – while both have swallowtail touches for the central C key, the E flat key on the Baur example curves towards the players’ hand, while this key on the Rockobaur instrument is symmetrical. Note that neither instrument has an alternative E flat key. Rockobaur, however, has continued the wooden ring around most of the body of the instrument, whereas Baur has removed it on the side which would have once held the alternative E flat key.

The *cor anglais* by Baur (GNM: MI 110) is a composite instrument, being stamped on the upper section with the number 1 and the lower two sections with the number 2, but the sections are not likely to come from the same set as the stamp symbols are different (see Appendix D, no. 67). Most of the *cor anglais* in this study are stamped with either the number 1 or 2, indicating their construction and use in pairs.

Reference was made in Chapter 3 to the *cor anglais* by Baur pictured above, as offering a clue as to how curved instruments such as *cor anglais* and the curved basset horns were held. Associated with this instrument is the silver and gilt tassled cord pictured below, which, although not removed from its container for conservation reasons, appeared to be long and strong enough to reach from the baluster to the horn mount at the top of the bell, and so form a sling allowing the instrument to be carried over the shoulder or supported by the back when playing.

**Plate 6.15. Silver and gilt tassled cord associated with the *cor anglais* by Jakob Baur (GNM: MI 110).**
The three *cor anglais* by Lotz also demonstrate consistency with external shape. The instruments in Vienna (KHM: SAM 324) and Leipzig (Leipzig: 1345) have identically shaped reed-wells and balusters (the instrument in Modena is missing this section) and all three have identically shaped ferrules on the left hand section and bells. All three were originally two-keyed instruments, but all have had keys added or altered at a later date, again testifying to the popularity of Lotz’s instruments long after they were made. The swallowtail touchpieces of the C key on the instruments in Vienna and Modena are identical, although it appears the key-heads on the Modena example have been rounded at a later date, as they do not match the octagonal shapes found on in the instrument in Vienna, which are more usual for instruments of this time. The identical shapes of the E flat key touchpieces also suggests they are both original. It can be seen in the following images how neatly the two saddles for the keys are joined together without any space between, indicating a high level of care and craftsmanship in every aspect of the instrument.
While the shape of the E flat key on the instrument in Leipzig is identical to those above and is likely to be original, the central touchpiece for the C key has been removed and replaced with a long touchpiece for operation by the left little finger. This process has partially obscured the stamp on this section, and the old holes for mounting the central C touchpiece can be seen in the leather of the body. This appears to have been done without making new saddles, as, instead of symmetrical saddles as is usually found, the saddles each have on one side a rectangular wing with room for the juxtaposition of

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another saddle, as seen on the Vienna and Modena examples in Plate 6.16. However, the saddles appear to have been inverted at the same time, as the rectangular wing is found on the opposite side to that necessary for fitting the two saddles together.

Plate 6.17. Details showing alterations for the position of the C key touchpiece on a cor anglais by Lotz (Leipzig: 1345).

Despite this alteration, the instrument in Leipzig is the best preserved of the three cor anglais by Lotz, indeed possibly of any of the Lotz instruments examined in this study. The gilding on all the stamps is almost completely intact, as is the gilding on the decoration around the tenons. The leather has not dried or cracked and the ivory around the ferrules and reed-well is not broken or chipped. This instrument is unusual amongst the three Lotz cor anglais in having ivory ferrules, as the others make use of horn. It also
has more gilded decoration than the other two instruments, which extends to the top and bottom of the bell. It is curious to note that, while Lotz appeared to prefer ivory for basset horns and clarinets, horn seems to have been the predominant material employed for the ferrules of *cor anglais*.

**Comparisons – baluster and bell shape**

The baluster shape of the *cor anglais* by Lotz is slightly more angular than those found on instruments by Rockobaur and Baur. The shape of the reed-well is also markedly different. The same is also true of the ferrule at the top of the lower section, which is simpler and more angular on the Lotz examples.

These images also highlight the decorative elements of the Lotz instrument. The embossed gilt dots seen below the ivory ferrule at the reed-well and the raised turned ring below the baluster also occur above and below every tenon and socket joint as well as around the lip of the bell. Although more worn, the same form of decoration can also be seen on the instruments in Vienna and Modena, although both these lack the ring of dots around the upper and lower parts of the bell. These two instruments also lack the
ivory ring at the lip of the bell seen on the Leipzig example, having instead a similar lip of wood. The gilt dots on these instruments can also be found on the surviving *cor anglais* by Griesbacher in a private collection in Italy. This instrument exhibits so many other similarities to the Lotz instruments as to be virtually identical, as was the case with Griesbacher’s basset horns discussed in Chapter 3. Particularly noticeable is the method of interlocking the brass saddles for the two keys, also found on *cor anglais* by Lotz (see Plate 6.16).

**Plate 6.19. Cor Anglais by Raymund Greisbacher, demonstrating shared characteristics with instruments by Lotz.**

The bell shapes of Lotz’s three instruments differ markedly from the instruments by Baur and Rockobaur. The bells of the Lotz *cor anglais* are a smooth curved pear shape,

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46 Besutti et al., *Gli strumenti a fiato*, 54-55.
whereas the instruments by Baur and Rockobaur are more in the form of a rounded pot and chimney. Later *cor anglais*, such as those by Koch, show a marked affinity with the shape of the Lotz instruments. This indicates that the instruments made by Lotz were of a much more modern design than others offered in Vienna at the same time.

X-ray evidence

Evidence that Lotz’s *cor anglais* were made in the curved form by cutting wedges out of the bore is seen not only in the X-ray of KHM: SAM 324, but also by the cuts in the bore of the instrument in Leipzig, visible by looking along the path of the bore. The raised heads of the screws holding the brace in place along the inner curve of the instrument are also visible under the leather covering.

**Plate 6.21.** X-ray image of lower section of KHM: SAM 324 by Lotz. X-ray image kindly provided by the Kunsthistorisches Museum Vienna.
Plate 6.22. View inside the bore of *cor anglais* by Lotz (Leipzig: 1345) and pin heads visible under the leather covering on the inside of the curve.

It can be seen from the images above that Lotz made regular cuts along the length of the bore, situated quite close together. On the instruments in Leipzig and Vienna (Leipzig: 1345 and KHM: SAM 324), two cuts are made between each finger hole. On the instrument in Vienna, there are ten cuts on the upper section and nine on the lower. The
spacing and arrangement of the cuts on the instruments by Rockobaur (GNM: MIR 394) and Baur (GNM: MI 110) are identical to each other, with eleven cuts in total along the length of both instruments, five in the upper section and six in the lower section, with one cut between each finger hole. They therefore have significantly fewer cuts than the Lotz instrument in Vienna. As no metal is visible along the inner curve on the X-ray image of the Lotz instrument in Vienna it is likely a wooden brace was used to secure the curved shape. This is also the case for the instruments by Rockobaur and Baur. There are no pins visible on the Rockobaur instrument. The Baur instrument however, has four pins at every cut – two before the cut on the outer curve and two after the cut on the inner curve. In addition, the X-ray of this instrument shows a large nail in the bell in the vicinity of the horn ring and socket. There is no evidence of this on the outside of the instrument and its purpose is unclear. The bell of this instrument cannot currently be removed and it may be that the bell is held to the lower section by the nail, but how this was achieved is not clear.
Plate 6.23. X-ray of upper sections of *cor anglais* by Rockobaur (GNM: MIR 394 – top) and Baur (GNM: MI 110 – bottom).

Plate 6.25. X-ray of *cor anglais* bell by Baur (GNM: MI 110), showing nail through tenon and socket joint and final cut and pins in the bore.

The Lotz instrument, rather than using pins or nails to secure the curve, makes use instead of screws which have been shortened so as not to intrude on the bore, as can be seen in Plate 6.21. The X-ray of the Lotz instrument in Vienna also demonstrates that, contrary to the instruments by Rockobaur or Baur, Lotz angled the tone holes of the *cor anglais* so as to place the tone holes on the bore in their optimal position for intonation whilst still leaving them easily in reach of the players’ fingers. X-rays also demonstrate that the internal shape of the bell on Lotz’s instrument is different to those of Rockobaur and Baur. As the external shape on the Lotz instruments was smoother, the X-rays of the instrument in Vienna show that the internal shape is also smoother and the bulbous external shape of the bell provides a larger and more rounded internal cavity than that seen on instruments by Rockobaur or Baur. It also shows that the final part of the bore before the bulbous bell is more obviously flaring on the Lotz example than on the Baur instrument.
Plate 6.26. X-rays of cor anglais bells by Lotz (KHM: SAM 324) and Baur (GNM: MI 110).

Developments in form

The discussion above has shown Lotz was making cor anglais of a more sophisticated and modern design than instruments by Rockobaur or his near contemporary Jakob Baur. They were still, however, curved instruments. It seems curious that Lotz persisted in this design for cor anglais when he had clearly been instrumental in the developments of the angled form of basset horn. In the discussion on the construction
methods of the curved form of cor anglais above, instruments from the 19th century were identified as being made in the curved form. The impetus for the development of the angled form of basset horn over the curved from were discussed in Chapter 3 but will be briefly re-examined here in order to relate them to the cor anglais to determine why this design persisted for so long. The advantages of the wider angled form of basset horn over the more acutely angled or curved form were identified as ease of manufacture with regard to the body of the instrument, in that fewer and simpler processes were required to create the shape. It was also found that the widening of the angle, the addition of the basset keys and the move of the E/B and F#/C# keys to the left side of the instrument from the dorsal side were complimentary innovations made by Lotz and each facilitated the other. It is in these innovations that the possible reason for the continued curved form of the cor anglais may be found. The instruments under discussion in this chapter had only two keys which were easily and comfortably mounted on the curved shape. Without long basset or side keys, the need for an angled shape was considerably lessened. Indeed, none of the curved instruments of this date examined for this study have original long keys on the dorsal side of the instrument. The cor anglais by Jakob Baur in the Gesellschaft der Musikfreunde (Vienna: GdM 154) has two keys on the dorsal side of the instrument which are likely to be later additions as they are mounted in brass saddles (as are two others, also likely to be later additions) whereas the C and E flat keys are mounted in wooden blocks, as on all other Jakob Baur cor anglais.

The angled instruments of Stephan Koch, however, all have at least one or two keys fitted on the dorsal side of the instrument, where they can be made straight along the
length of the shank without compromising their action, further linking this shape with
the addition of these keys. Furthermore, instruments of this time also usually have
octave keys added, also on the dorsal side of the instrument, whose addition and use
would be simplified by the angled form. The instruments each have either a thumb rest
or a brass loop, or sometimes both, from which a strap could be secured. The
advantages of supporting and holding the angled form in this way were discussed in
reference to basset horns. Only one of the Koch instruments examined for this study
was curved, and is of such unusual appearance that it may be a prototype instrument. It
is unusually small, being over 200mm shorter than other Koch examples, and having an
angled knee at the lower end from which a silver plated bell projects outwards. The
instrument has one thumb key on the lower half and a speaker key on the dorsal side of
the upper half. The curved shape and unusual style of this instrument may indicate it
was an early experimentation by Koch in the addition of keys to the cor anglais, which
he then later overcame with the angled form. The bell may not be original.

Plate 6.27. Cor anglais (?) by Stephan Koch (Prague, NM: 463E).
Conclusions

The discussions on the cor anglais in this chapter have primarily focused on the instruments of makers from the mid- to late-18\textsuperscript{th} century in Vienna, most particularly Mathias Rockobaur, his son-in-law Jakob Baur, and Theodor Lotz. It has shown that most of the makers in Vienna at the time were producing cor anglais, but only these makers are well represented by extant examples. These surviving instruments demonstrate that, while Lotz may not have been as avid a reformer of the cor anglais as he was of the basset horn, continuing to make instruments in the curved form whilst having pioneered the angled form of basset horn, the differences discernable between his instruments and those of his predecessors and contemporaries in Vienna demonstrate that he was nevertheless producing more modern and refined instruments. The change to the angled form of cor anglais did not come about until much later, and seems to have been led in Vienna by Stephan Koch. As with the basset horn, the impetus for change is likely to have come from the necessity of adding keys to increase or improve the instruments’ range.
Conclusions

In undertaking a study of representative instruments by Lotz from all the extant woodwind families, this study has explored areas hitherto untouched by previous scholars. While the single surviving clarinet has come in for particular attention in other studies, as well as a number of the surviving basset horns, Lotz’s output of flutes, oboes, cor anglais and bassoons – and consequently influence – has never before been considered. By studying only the clarinet and basset horns only a partial picture of Lotz as a maker is gained, but this study has rectified this in order to give a more complete understanding of Lotz’s output and place him in greater context amongst the makers, music and developments of the time. Furthermore, this study has brought to light a number of instruments not previously generally known (from both Lotz and other makers) and corrected errors in existing checklists. In doing so it has enabled a more comprehensive understanding of Lotz’s focus and specialties as a maker, as well as those of his contemporaries.

The question of Lotz’s place and year of birth was answered in Chapter 1. The position and place of residence of his father as recorded in Lotz’s first marriage certificate of 1777 led to enquiries in Kirchheim, Hesse, yielding this as his place of birth through the evidence of his baptismal record. Research into the musical life of Kirchheim has revealed a strong court tradition, but there is no evidence of instrument makers in or around this area. In this context, the question of the identity of the maker Anton Lotz of Pressburg, recorded in a bill of sale for a bassoon in Český Krumlov in 1780, was also considered. As the research into Lotz’s place of birth revealed he had no brothers, that Anton was not one of his Christian names, and that his father was not a musical instrument maker, previous theories that this
maker was either a brother, or Lotz himself under a different name, have been disproved. The hypothesis has been put forward in this dissertation that Anton Lotz was an older relative, perhaps an uncle. As Lotz’s father was not an instrument maker he could not have received his training from him. It has therefore been suggested here that Lotz went to Pressburg in order to learn the trade with his uncle, Anton Lotz. This theory accounts for Lotz’s training, the identity of the maker Anton Lotz, and Lotz’s presence in the region of Pressburg and Vienna in the early 1770s. Lotz’s path from Kirchheim to Vienna would have been likely to lead him through some of the major centres for clarinet and basset horn making of the time, exposing him to the most current developments and possibly fostering an interest in the development of the instrument.

As a professional performer on clarinet, Lotz would have been well placed to initiate developments in the instrument. Although Lotz did not receive his court appointment until 1785, newspaper announcements of his performances and his connection with courts in the area show he was present in Vienna and its surrounds from the early 1770s. The number of Viennese clarinets surviving from this time is small, and although a number of makers were known to have made them, it was argued in Chapter 2 that these instruments were relatively old fashioned and would not have encouraged widespread interest or enthusiasm for the instrument in Vienna. The flourishing of clarinet playing, repertoire and instruments which occurred in Vienna towards the end of the 18th century, largely within the circle around Lotz and including Anton Stadler and Mozart, must have been given an impetus in what appears to have previously been an area of no particular interest for the clarinet. It was argued in Chapter 2 that Lotz’s instruments were this impetus. Although only
one complete instrument from Lotz survives, documentary evidence was presented to show that this, as was argued for some other instruments, did not indicate a similarly small number of instruments actually made. This theory was substantiated by comparing Lotz’s clarinets to those available in Vienna before his arrival and during his residence there, as well as those by other influential makers from elsewhere, such as August Grenser and Franz Doleisch. This demonstrated that Lotz was producing clarinets with larger tone holes and a wider and longer flare in the stock and bell sections than any of his contemporaries. These innovations would have impacted on both the intonation and sound quality of the instruments. Furthermore, he introduced additional refinements in the methods of mounting the keys.

While Lotz has been credited with improvements to the basset horn in contemporary sources, this has only loosely been speculated upon and not clearly elucidated in the existing modern literature. In Chapter 3 this was examined, again through a comparative study of early and contemporary instruments. This comparison concluded that Lotz was the first maker to create basset horns at a wider angle of 120° and that the impetus for the increased angle was manifold. These included ease of manufacture compared with the curved form, simplifying the addition of keys (particularly where basset keys are concerned) and comfort and practicality for the performer. Lotz was clearly the first maker to add chromatic notes to the basset register, moved the point of support higher up the instrument in order to balance it more effectively, made bells oval in shape that they might rest more easily on the players’ leg, offset T3 to make the position of the players left hand more natural, and placed the A flat/ E flat key centrally so as to make the basset horn identical to the clarinet in its fingering, allowing a smoother change between instruments. All of
these innovations indicate personal experience as a player. The comparisons with the
work of other makers demonstrate that contemporary makers such as Doleisch, only
70 kilometres away in Prague, were producing vastly different instruments which
had many features in common with earlier instruments, such as small bores and tone
holes, rounded bells, unevenly balanced support points which could lead to problems
with the basset keys in performance, and a reversed position for the A flat/E flat and
F/C keys. Contemporary Viennese instruments, such as the surviving example by
Jakob Baur, appear to have been even more out of date in still being of the curved
variety. This would doubtless have contributed to the extreme popularity of Lotz’s
instruments, evidenced by contemporary reports and the large number of surviving
examples.

The contemporary reports of Lotz’s improvements to the basset horn date them to
several years before his court appointment. It has been argued here that this is
evidence that the impetus for the innovations came from Lotz himself, and not from
Anton Stadler as has sometimes been posited in both contemporary and modern
literature. This has been shown to be in keeping with a general interest in
instruments of a lower pitch, evidenced by his developments with the contrabassoon
and his finely crafted surviving cor anglais. The presence of a performer of Stadler’s
quality was an additional advantage in promoting the instrument, rather than the
impetus to develop the instrument itself. Lotz’s designs were pursued by his
students, most particularly Griesbacher, and were spread throughout Europe by
Stadler’s tour of 1791-1796, although this tour also effectively effaced Lotz from the
equation.
The relationship between Lotz, Stadler and Mozart has also been examined and it was suggested that, largely due to Lotz’s Protestant background, the collaborations which led to the creation of the basset clarinet and works such as Mozart’s Clarinet Concert K. 622 may have been built more on professional respect than personal friendship. This shows Lotz to have been a shrewd businessman, who promoted his instruments by collaborating with musicians of the quality of Stadler and Mozart. This is also exemplified by Lotz’s membership of the Freemasons – an organisation renowned for its wealthy and musical members. Through capitalizing on such relationships and opportunities Lotz became one of the most successful and dominant makers in a primarily Catholic city which, regardless of the introduction of more tolerant edicts by its rulers, would still have been largely hostile and closed to Protestants.

There was no player of Stadler’s calibre to promote Lotz’s other instruments. For his new contrabassoon, introduced to Vienna in 1785, Lotz played the instrument himself. This early reference to the contrabassoon as well as the lack of extant instruments from this time suggests that Lotz was responsible for re-introducing this instrument after initial popularity in the early part of the century had waned. Mozart showed interest in this instrument – as he had done in the clarinet and basset horn. The brother of the Emperor, Archduke Maximilian, was also so impressed with it that he wished to take the contrabassoonist he heard in the Emperor’s Harmonie ensemble back to his own castle. It has been suggested in this dissertation, due to the coincidence of date, place and repertoire, that the contrabassoonist mentioned in the anecdote in Reichhardt’s biography of 1813 was Lotz himself. Lotz’s involvement with the instrument was taken up by his student Kaspar Tauber, who became one of
the contrabassoons foremost makers, thus ensuring a continued pre-eminence for the instrument in and around Vienna.

This study has brought to light several more previously unknown surviving bassoons by Lotz. As with clarinets and basset horns, comparisons with contemporary bassoons, such as those by Friedrich Lempp and Jakob Baur, have shown Lotz to have had a forward looking design, more like classical instruments than the baroque influence shown by the previous two Viennese makers. While not as radical a reformer of the bassoon as makers such as August Grenser or his own pupil Tauber, Lotz nevertheless led the way in some elements of bassoon design in Vienna, particularly in reshaping the bore of the bell to become more conical. The numerous additions and alterations made to the surviving bassoons testifies to their popularity with players.

The investigation into Lotz’s flutes was less conclusive. After correcting an erroneous listing of a flute by Lotz in the Narodní Muzeum Prague, only one possible example remained, and that of ambiguous origin. While the stamp could not conclusively determine the instrument as either Lotz’s work prior to his court appointment or that of a family member (perhaps Anton Lotz), comparisons of Viennese flutes from makers of mid-century such as Rockobaur to those in the first decades of the 19th century, such as Stephan Koch, also revealed that these parameters would do little to accurately identify the maker. Virtually no differences in bore shape or tone hole size were detected in instruments spanning nearly one hundred years, and only relatively marginal differences in embouchure size. While the investigation therefore could not identify the flute as the work of Lotz, it could equally not be discounted as such. The relatively small number of extant Viennese

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flutes found across all the makers in this study, until later makers such as Kaspar Tauber and Stephan Koch, has been explained by the presence of a much more competitive market in Germany led by makers such as August Grenser, arising from the great tradition of flute making and playing in the German lands exemplified by Quantz at the court of Frederick the Great.

Nevertheless, the presence of an English flute in Lotz’s workshop possessions after his death led to the theory that he was instrumental in introducing flutes of Potter’s design – including a tuning screw in the cap, a metal lined tuning slide in the head joint and pewter plug keys – to Vienna. Friedrich Hammig, whose only surviving flute and flute d’amour shows a marked similarities to the attributed Lotz flute, was the first Viennese maker to advertise such Potter type instruments and this, together with the similarity in flutes, has been suggested as reason to more closely investigate the career of Hammig in order to determine if he had any association with Lotz. Also tellingly, Hammig’s advertisements were followed shortly after by a similar announcement from Lotz’s former pupil Scholl, again connecting Lotz with the introduction of English flutes to Vienna. Aspects of Potter’s design were identified in extant flutes by Franz Harrach, Kaspar Tauber and Friedrich Hammig. It is interesting to compare the apparent paucity of flutes made in Vienna before Lotz’s arrival with the relative explosion not long after his death, exemplified by makers such as Harrach, Koch and, most importantly, Kaspar Tauber. This again associates Lotz with a previously under exploited instrument which then became popular in Vienna.

No similar lack of interest in oboes or cor anglais in Vienna could be identified, with both instruments well represented by extant examples from before, during and after
Lotz’s lifetime. The chapter on oboes examined the two surviving upper sections by Lotz, neither of which have been studied before and one of which has not been included in any previous lists of Lotz’s instruments. This examination concentrated on external features, as measurements have not been possible to obtain. Both sections differed markedly from each other with regard to their external shape and decoration and this was highlighted to indicate Lotz’s ability and willingness to adapt and change his instrument design. This is in comparison to Jakob Baur who, it has been suggested through the evidence of his surviving bassett horn and cor anglais, persisted in making instruments in more outmoded designs. The comparatively larger number of surviving cor anglais by Lotz was used to again suggest Lotz’s affinity and interest with lower pitched members of the woodwind family. Despite still making cor anglais in the curved form long after adapting the angled form for basset horns, Lotz’s cor anglais were still identified as more modern and refined instruments than those by Rockoba or Jakob Baur, who were equally well represented by extant instruments. Baur’s and Rockobaur’s instruments were found to be virtually identical, and it was argued that Baur’s adherence to this older style of instrument would also have carried through to his bassett horn production. This chapter posed the question as to why the angled form of cor anglais did not arise at the same time as the angled form of bassett horn. It has been argued here that the impetus to change to the angled form of bassett horn, while also being beneficial in reducing the amount of work required on the body of the instrument, primarily benefitted the maker and player in facilitating the addition and use of long keys, especially those on the dorsal side of the instrument. The change to the angled form of cor anglais, apparently begun by Stephan Koch in Vienna, was linked, therefore,
to the addition of long keys on the dorsal side of the instrument. The change to the angled design would doubtless have been greatly facilitated for makers by the existence of a model in the angled basset horn.

One of the aims of this dissertation has been not only to contribute significantly to the general understanding of Lotz as a maker, but also to examine ways in which wind instruments may effectively be compared. For clarinets it was found that parameters such as tone hole size and features such as bore shape readily yielded results, with each maker demonstrating relative consistency within their own output, thus allowing identification of individual characteristics and comparison with other makers. Bore profile, however, was found to be less successful with other instruments. Individual variation from instrument to instrument, even within one makers’ output, made identification of individual characteristics and comparisons difficult, particularly in relation to the bassoon. Comparisons of the bore of the bell of the bassoon, however, was found to be effective, as was tone hole size and the angle at which the tone holes entered the bore. This latter characteristic led to the identification of a wing section on a Lotz bassoon as not original. Bore profile comparisons of the small number of flutes available also yielded results, in demonstrating a tendency in earlier instruments to a slight flare in the foot section, whereas later instruments remained conical to the end of the instrument. In general, however, flutes, bassoons and oboes were more readily separated and identified by external features, such as turned decoration, swellings, and key shape and mounting style, rather than by internal characteristics such as bore shape and tone hole size.

This dissertation has considered not only the work of Lotz and those who preceded him, but also those makers connected with Lotz who followed him. Of these
Griesbacher was perhaps shown to share the greatest affinity with Lotz’s instruments, particularly in his basset horn, clarinet and cor anglais designs. Tauber was identified as being strongly influenced by Lotz in bassoon design whereas Scholl, although poorly represented by extant instruments, shared Lotz’s interest in experimenting with extended range clarinets. In light of the discussions on Friedrich Hammig and his possible connection to Lotz, he was identified as possibly following Lotz’s flute and oboe designs. The representations by these makers of their extant instruments or documentary evidence was used to support the hypothesis that Lotz chose to pass on a specialty to each of his pupils. This is further evidence of his business mind, in attempting to ensure none of his pupils could out-compete him in all his areas of expertise.

This dissertation has not been able to discover by organological or archival means where or from whom Lotz received his training. Rather than clarifying this issue, it has perhaps made it even more difficult to discern by demonstrating that by the time he arrived in Vienna in 1785 he was producing highly individual instruments. The individuality and skill in these instruments appears to have been that which enabled them to so dominate the Viennese wind instrument market that they influenced other makers and became the standard instrument associated with wind music of the Viennese classical era. In examining representative instruments from all the extant families made by Lotz this study has shown him to be a universally skilled woodwind maker, displaying a high level of attention to detail, presentation and craftsmanship. These qualities made his instruments extremely successful in his own lifetime and have continued to make them popular models for modern makers copying instruments of the 18th century.
Appendix A

Archives and Collections Visited/Consulted

Archives

Austria
Wiener Stadt- und Landesarchiv
Haus-, Hof- und Staatsarchiv Wien

Germany
Stadtsarchiv Bremen
Archiv der Gemeinde Kirchheimbolanden

France
De Rohan Archive, Paris

Museums/Collections

Germany
Stadtmuseum Munich
Deutsches Museum Munich
Germanisches Nationalmuseum Nuremberg
Museum Viadrina, Frankfurt (Oder)
Musikinstrumenten-Museum, Berlin
Musikwissenschaftliches Seminar der Georg-August
Universität, Göttingen
Musikinstrumentenmuseum der Universität Leipzig

Austria
Kunsthistorisches Museum Wien
Technisches Museum Wien
Gesellschaft der Musikfreunde, Vienna
Museo Carolino Augusteum, Salzburg
Landesmuseum Linz
Pirker Private Collection, Vienna
Schlader Private Collection, Allhaming

Czech Republic
Narodní Muzeum Prague
Seidl Private Collection, Prague

UK
Edinburgh University Collection of Historic Musical
Instruments
Royal College of Music Historical Instrument Museum,
London

Belgium/Holland
Musical Instrument Museum, Brussels

Italy
Academia Nazionale di Santa Cecilia, MUSA, Rome
Galleria dell’Accademia, Florence

US
Yale University Collection of Historic Instruments
National Music Museum, Vermillion, South Dakota
# Appendix B

## Checklist of known extant instruments from the principal makers in this study

This checklist has been assembled from information in Phillip T. Young’s *4900 Historical Woodwind Instruments*, William Waterhouse’s *The New Langwill Index*, museum catalogues and communications, information from other researchers and personal findings. Instruments which are included in Young’s list but were not found at the collections visited are not recorded here.

<table>
<thead>
<tr>
<th>Maker</th>
<th>Instrument</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baur, Jakob</strong></td>
<td>Bassett horn</td>
<td>Germanisches Nationalmuseum, Nuremberg, MI 134</td>
</tr>
<tr>
<td></td>
<td>Bassoon</td>
<td>Anonymous collection, Kozlowka, Poland</td>
</tr>
<tr>
<td></td>
<td>Bassoon</td>
<td>Musical Instrument Museum, Poznan, 1447¹</td>
</tr>
<tr>
<td></td>
<td>Oboe</td>
<td>Landesmuseum, Graz, KGW 1.397</td>
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<tr>
<td></td>
<td>Oboe</td>
<td>Narodní Muzeum, Prague, 21E</td>
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<tr>
<td></td>
<td>Oboe</td>
<td>Nikolas Harnoncourt private collection, Vienna</td>
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<tr>
<td></td>
<td>Oboe (fr.)</td>
<td>Gerhard Stradner private collection, Vienna</td>
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<tr>
<td></td>
<td>Oboe</td>
<td>Stift Melk</td>
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<td></td>
<td>Oboe</td>
<td>Stift Melk</td>
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<tr>
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³ Matthew Dart, Personal communication, September 2011. This instrument was formerly in the Lange Collection in Aldeburgh. It’s attribution to Griesbacher is yet to be firmly established, as the present owner informs the author that no makers mark is visible on the instrument.
⁴ Besutti et al., *Gli strumenti a fiato*, 54.
⁵ Rice, *Large Size Clarinets*, 133.
⁷ Besutti et al., *Gli strumenti a fiato*, 34.
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⁹ Attributions of these instruments have been discussed in the preceding chapters, as well as in the paper given by the author at the 40th Annual meeting of the American Musical Instrument Association in Phoenix, May 2011, entitled, “Which Lempp? A Study in Attribution.”
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12 Thomas Kiefer, Personal communication, August 2008.  
13 Thomas Kiefer, Personal communication, June 2008.  
14 Thomas Kiefer, Personal communication, April 2010.  
15 Thomas Kiefer, Personal communication, February 2011.  
16 Thomas Kiefer, Personal communication, April 2011.  
17 Albert Rice, Personal communication, January 2007.
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<sup>18</sup> Besutti et al., *Gli Strumenti a fiato*, 66.
<sup>19</sup> Ernst Schlader and Robert Sebesta, Personal communication, July 2009.
<sup>20</sup> Ernst Schlader and Robert Sebesta, Personal communication, July 2009.
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\textsuperscript{21} Besutti et al., \textit{Gli strumenti a fiato}, 82.
\textsuperscript{22} Alfredo Bernadini, Personal Communication, June 2008.
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Appendix C

Instruments studied

Instruments in this list include those consulted personally, by catalogue entries, or by photographs or catalogue information sent by owners, scholars and museums.

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Clarinet in A  EUCHMI, 5291
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Cor Anglais  Narodní Muzeum, Prague, 463E
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**Lempp, F.**
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Bassoon Technisches Museum Wien, TMW 22363
Oboe Landesmuseum Linz, Mu 120
Oboe Yale University Collection of Historical Instruments, 3413.80
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Tenor oboe Gesellschaft der Musikfreunde, Vienna, GdM 153

**Lempp, M.**
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Contrabassoon Landesmuseum Linz, Mu 37
Contrabassoon MIM, Brussels, 1002
Oboe MIM, Brussels, 963
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**Lotz, Theodor**
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Clarinet in C (fr) Muzeo Nationale, Rome

Basset horn in F Narodní Muzeum Prague, 1365E
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Basset horn in F Musikinstrumenten-Museum, Berlin, 2911
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23 Attributions of these instruments have been discussed in the preceding chapters, as well as in the paper given by the author at the 40th Annual meeting of the American Musical Instrument Association in Phoenix, May 2011, entitled, “Which Lempp? A Study in Attribution.”
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Appendix D

Brief descriptions of key instruments in this study

Clarinets/basset horns

Baur
1. Basset horn in F, Germanisches Nationalmuseum: MI 134
   Curved form, maple (?) body covered in leather, including the *buch* and chimney. Ivory ferrules. Mouthpiece is of cocus wood, does not appear to be original. Barrel is also of cocus wood with ivory ferrules. Seven keys, for Speaker, A, F/C, A flat/E flat, F#/C#, E/B and basset C. E/B and basset C mounted on dorsal side, with the C key mounted above the E/B key. A flat/E flat and F/C keys in reverse position to that found on the clarinet. F/C key has swallowtail touchpiece. All key springs attached to body, except for A flat/E flat and F/C keys which are attached to the keys. All keys in brass saddles. Traces of gilding on stamps. Large round brass bell. Average bore diameter = 14.0mm.
   Stamp:
   Mouthpiece: none
   Barrel: none
   LH: J. BAUR/WIEN
   RH: none
   Buch: J. BAUR/WIEN
   Bell: none

Doleisch
2. Clarinet in B flat, Edinburgh University Collection of Historic Musical Instruments, 4843
   Boxwood body, with horn ferrules and five brass keys. All keys in wooden blocks and rings and all key springs attached to keys. Integral stock and bell. Wooden rings for A and Speaker keys have raised decorative edges. Decoration along shanks of E/B and F#/C# keys. Barrel entirely of boxwood – no horn ferrules. Mouthpiece missing. Total sounding length = 597.8mm. Average bore diameter = 13.6mm.
   Stamp:
   Barrel: [Lion rampant]/DOLEISCH/PRAG/[sun]
   LH: [Lion rampant]/DOLEISCH/PRAG/[sun]
   RH: [Lion rampant]/DOLEISCH/PRAG/[sun]
   Stock/Bell: [Lion rampant]/DOLEISCH/PRAG/1793/[sun]

3. Basset horn in F, Narodní Muzeum Prague, 467E
   Boxwood body, horn ferrules and eight brass keys. Basset keys and E/B keys are mounted in brass saddles, all others in wooden blocks. All key springs attached to keys. Two basset keys. Barrel angled in lower half, knee integral to right hand section. *Buch* square in cross section and capped with wood. A flat/E flat and F/C
keys reversed from normal position. Integral stock, chimney and *buch*. Average bore diameter = 14.1mm.

**Stamp:**
- **Mouthpiece:** none
- **Barrel:** [Lion rampant]/DOLEISCH/PRAG/[sun]
- **LH:** [Lion rampant]/DOLEISCH/PRAG/[sun]
- **RH:** [Lion rampant]/DOLEISCH/PRAG/[sun]
- **Buch:** [Lion rampant]/DOLEISCH/PRAG/1791/[sun]

4. **Basset horn in F, National Music Museum, Vermillion, 3541**
   Boxwood body, horn ferrules and eight brass keys. Basset keys and E/B key mounted in brass saddles, all others in wooden blocks. Two basset keys. All key springs attached to key except for A flat/E flat and F/C, which are attached to the body. A flat/E flat and F/C keys reversed from normal position. Barrel angled in lower half, knee integral to right hand section. Raised edges to wooden rings for A and Speaker keys and first wooden ring on stock. *Buch* square in cross-section and capped with wood. Basset keys and long keys are without key guards. Mouthpiece and bell probably not original. Angle of knee = 110°. Average bore diameter = 13.5mm.

**Stamp:**
- **Mouthpiece:** none
- **Barrel:** [Lion rampant]/DOLEISCH/PRAG/[sun]/[sun]
- **LH:** [Lion rampant]/DOLEISCH/PRAG/[sun]/[sun]
- **RH:** [Lion rampant]/DOLEISCH/PRAG/[sun]/[sun]
- **Buch:** [Lion rampant]/DOLEISCH/PRAG/1793/[sun]/[sun]

5. **Basset horn in F, Narodní Muzeum Prague, 466E**
   Boxwood body, horn ferrules and twelve brass keys. Basset keys, C#/G# and E flat/B flat keys mounted in brass saddles, all others in wooden blocks. C#/G# and E flat/B flat may be later additions. All key springs attached to keys, apart from A flat/E flat and F/C, which are attached to the body. A flat/E flat and F/C reversed from normal position. Barrel angled in lower half, knee integral to right hand section. Raised edges to wooden rings for A and Speaker keys. *Buch* square in cross-section and capped with wood. Large round brass bell. Mouthpiece missing. Three basset keys – E flat, D and C – with one key guard for all three. Average bore diameter = 14.2mm.

**Stamp:**
- **Barrel:** [Lion rampant]/DOLEISCH/PRAG/[sun]/[sun]/2
- **LH:** [Lion rampant]/DOLEISCH/PRAG/[sun]/[sun]/2
- **RH:** [Lion rampant]/DOLEISCH/PRAG/[sun]/[sun]/2
- **Stock:** [Lion rampant]/DOLEISCH/PRAG/[sun]/[sun]/2
- **Buch:** [Lion rampant]/DOLEISCH/PRAG/1795/[sun]/[sun]/2

6. **Basset horn in F, MIM, Brussels, 938**
   Boxwood body, horn ferrules and nine brass keys. Basset keys and E/B key in brass saddles, all others in wooden blocks. Three basset keys – E flat, D and C. Key springs for A, Speaker, E/B, F#/C# and D and E flat basset keys attached to keys, all others attached to body. Barrel angled in lower half, knee integral to right hand
section. A flat/E flat and F/C keys reversed from normal position. Raised edges to wooden rings for A and Speaker keys and first wooden ring on stock. One key guard for all three basset keys, with elaborate cut away decoration of hearts, stars and geometric shapes. Buch square in cross-section and capped with wood. Mouthpiece missing. Large round brass bell with rolled rim. Average bore diameter = 13.5mm.

Stamp:
Barrel: [Lion rampant]/DOLEISCH/PRAG/[sun sun]/[sun]/3
LH: [Lion rampant]/DOLEISCH/PRAG/[sun sun]/[sun]/3
RH: [Lion rampant]/DOLEISCH/PRAG/[sun sun]/[sun]/3
Stock: [Lion rampant]/DOLEISCH/PRAG/[sun sun]/[sun]/3
Buch: [Lion rampant]/DOLEISCH/PRAG/1797/[sun sun]/[sun]/3

7. Basset horn in F, Royal College of Music, London, RCM 90
Boxwood body, horn ferrules and nine brass keys. Basset keys mounted in brass saddles, all others in wooden blocks. Three basset keys – E flat, D and C. All key springs attached to keys, except for A flat/E flat and F/C which are attached to body. A flat/E flat and F/C reversed from normal position. Raised edges to wooden rings for A and Speaker keys. One key guard for all three basset keys with a very open cut-away circular design. Buch square in cross-section and capped with wood. Mouthpiece and bell are missing and barrel is not original. E/B and F#/C# keys are too short to be reached by L4 and are either later incorrect replacements or were operated by the right thumb. Average bore diameter = 13.8mm.

Stamp:
Barrel: none
LH: [Hapsburg eagle]/DOLESICH/PRAG/[eight-petalled flower]/3/F
RH: [Hapsburg eagle]/DOLEISCH/PRAG/[eight-petalled flower x 2]/[eight-petalled flower]/F
Buch: [Hapsburg eagle]/DOLEISCH/PRAG/1803/[eight-petalled flower x 2]/[eight-petalled flower]

8. Basset horn in F, Narodní Muzeum Prague, 476E
Not stamped, attributed to Doleisch. Boxwood body, horn ferrules and eight brass keys, three missing (F#/C#, E/B and D basset). Two basset keys. All remaining springs attached to keys. Barrel angled in lower half, knee integral to right hand section. Raised edges to wooden rings for A and Speaker keys. Buch square in cross-section and capped with brass. A flat/E flat and F/C keys reversed from normal position. Bell missing. No markings. Average bore diameter = 13.8mm.

9. Clarinet in A/B flat, Prague: 1673E
Clarinet in B flat with corps-de-rechange in A. Boxwood, with ivory ferrules and nine hallmarked silver keys. All keys mounted in wooden blocks. Springs for keys attached to keys. Long keys for E/B and F#/C# are fitted with sliding extensions on the touchpieces. Keys for Speaker, A, E flat/B flat, C#/G#, side trill key, B natural/F#, A flat/ E flat, F#/C# and E/B. Lower ferrule on the bell is missing. Mouthpiece is unstamped but probably original due to similar profile and horn mount to Lotz (IM 136). Single incised central line on wooden rings mounting speaker and A keys. Touchpiece for A flat/E flat differs from other Griesbacher instruments and

Griesbacher:
this may be a later example. Total sounding length B flat = 654.1mm. Total sounding length A = 686.8mm (both with mouthpiece). Average bore diameter = 14.5mm.
Stamp:
Mouthpiece: none
Barrel: [Hapsburg eagle]/GRIES/BACHER/B
LH: [Hapsburg eagle]/GRIES/BACHER/K-K-HOF/INSTR-MACHER/IN WIEN/B or A
RH: [Hapsburg eagle]/GRIES/BACHER//B or A
Stock: [Hapsburg eagle]GRIES/BACHER/B
Bell: B/[Hapsburg eagle]/GRIES/BACHER/K-K-HOF/INSTR-MACHER/IN WIEN

10. Clarinet in B flat, Museum Viadrina, Frankfurt (Oder), V-185J
Clarinet in B flat, boxwood, with ivory ferrules and twelve brass keys. Not all keys appear to be original, those for throat G#, B natural/F# and one side trill key may be later additions. The long keys for F#/C# and E/B are fitted with sliding extensions on the touchpieces, which, together with the pitch designation on the instrument indicate the original presence of corps-de-rechange in A. Only the touchpiece for E/B has the same sliding extension as found on V-186J and on the Lotz clarinet (IM 136). The touchpiece extension for F#/C# has an internal sliding mechanism and is therefore of a different type and is likely to be a later repair. The shank of the E/B key has also undergone repair at the point is rests in the swelling of the instrument. Touchpiece for A flat/E flat key very similar in shape to Lotz (IM 136). The instrument has been cut or shortened above T3. The mouthpiece is probably not original, and has a silver lay and tip. Single incised lines on rings for A and Speaker keys. Ivory thumb rest. This instrument is probably part of a set with the clarinet in C, FO: V-186J. Total sounding length = 578mm (without mouthpiece). Average bore diameter = 14.5mm.
Stamp:
Mouthpiece: none
Barrel: [Hapsburg eagle]/GRIES/BACHER/B
LH: [Hapsburg eagle]/GRIES/BACHER/K-K-HOF/INSTR-MACHER/IN WIEN/B
RH: [Hapsburg eagle]/GRIES/BACHER/B
Stock: [Hapsburg eagle]GRIES/BACHER/B
Bell: [Hapsburg eagle]/GRIES/BACHER/K-K-HOF/INSTR-MACHER/IN WIEN/B

Clarinet in C, boxwood, with ivory ferrules and eleven brass keys. As with FO: V-185J, not all keys appear to be original, those for throat G# and B natural/F# appear to be later additions. The key for C#/G# also appears to be either a later addition or repair. All other keys are mounted in wooden blocks, with a brass saddle guide for F#/C#. All key springs attached to keys. The instrument appears to have been cut or shortened above T3. The instrument is missing its mouthpiece and bell. Ivory thumb rest. Shape of A flat/E flat key touchpiece very similar to Lotz (IM 136). Total length of remaining sections = 425.6mm. Average bore diameter = 13.0mm.
Stamp:
Barrel: [Hapsburg eagle]/GRIES/BACHER/C/1
Clarinet in A, boxwood, with horn ferrules and five brass keys. Springs for keys attached to keys. Sliding extensions to long key touchpieces suggests original presence of corps-de-rechange. E/B key is mounted in a wooden block while the F#/C# key guide is a brass saddle. Mouthpiece is unstamped but is probably original or contemporary. Wooden rings mounting A and speaker keys have a single central incised line. The lower ferrule on the bell is wood. The instrument is in many respects very similar to the clarinet by Lotz (IM 136), particularly in the method of mounting the sliding touchpieces on the long keys, the shape of the touchpiece for A flat/E flat and the external profile of the instrument. Total sounding length = 681.9mm (including mouthpiece). Average bore diameter = 14.8mm
Stamp:
Mouthpiece: none
Barrel: none
LH: [Hapsburg eagle]/GRIES/BACHER/IN WIEN/A
RH: [Hapsburg eagle]/GRIES/BACHER
Stock: [Hapsburg eagle]/GRIES/BACHER/IN WIEN
Bell: [Hapsburg eagle]/GRIES/BACHER/IN WIEN

Figured boxwood and maple body, ivory ferrules and knee and fifteen brass keys. Originally eight keys, those for throat G#, two side trill keys for R1, C#/G#, E flat/ B flat, B natural/F# and B flat/F natural are later additions. All key springs are attached to keys. All keys in brass saddles. Bell and mouthpiece not original, although mouthpiece is a modern copy of a contemporary mouthpiece. Angle of knee = 120°. Average bore diameter = 15.6mm.
Stamp:
Mouthpiece: none
Barrel: [Hapsburg eagle]/GRIES/BACHER/IN WIEN/2
LH: [Hapsburg eagle]/GRIES/BACHER/K∙K∙HOF/INSTR∙MACHER/IN WIEN/2
RH: [Hapsburg eagle]/GRIES/BACHER/2
Stock: [Hapsburg eagle]/GRIES/BACHER/2
Buch: [Hapsburg eagle]/GRIES/BACHER/K∙K∙HOF/INSTR∙MACHER/IN WIEN/2

14. Basset horn in F. Edinburgh University Collection of Historic Musical Instruments 4797
Basset horn in F, boxwood and maple body, ivory and horn ferrules, thirteen brass keys. Originally eight keys, those for G#, E-F trill, E flat/B flat, C#/G# and side trill keys are probably later additions. The additions are neat and skilled and could possibly have been done by Griesbacher at a later date. Springs for keys on stock attached to body, all others to keys. Two basset keys. Left hand section covered in a thick black lacquer which was probably done later as it would have obscured the
stamp. T3 is offset, as on basset horns by Lotz. The thumb hole is fitted with a brass sleeve. Stock and chimney can be aligned by two marker holes burnt on the wood and horn of these sections. Fitted with a brass support loop between basset keys on stock. Oval brass bell with garland decoration around rim. Mouthpiece and barrel missing. Composite instrument. Angle of knee = 110°. Average bore diameter = 15.5mm.
Stamp:
LH: [Hapsburg eagle]/GRIES/BACHER/IN WIEN/2
RH: [Hapsburg eagle]/GRIES/BACHER/IN WIEN/1
Stock: [Hapsburg eagle]/GRIES/BACHER/IN WIEN/1
Buch: [Hapsburg eagle]/GRIES/BACHER/IN WIEN/1

15. Basset horn in F. Academia Nazionale di Santa Cecilia, MUSA, Rome
Basset horn in F, figured boxwood and flame maple body, ivory ferrules and eleven brass keys. Originally eight keys, those for C#/G#, E flat/B flat and throat G# added later. All keys in brass saddles and all springs for keys attached to keys. T3 is placed on the centre line and is a later addition – the original offset double hole for T3 has been blocked. Oval brass bell with laurel decoration around rim. Ivory knee. Mouthpiece missing. Two basset keys. Brass support loop between basset keys on stock. The lack of a number in the stamp may suggest this instrument was not made as part of a set. Angle of knee = 130°. Average bore diameter = 15.6mm.
Stamp:
Barrel: [Hapsburg eagle]/GRIES/BACHER
LH: [Hapsburg eagle]/GRIES/BACHER/K K HOF/INSTR·MACHER/IN WIEN
RH: [Hapsburg eagle]/GRIES/BACHER
Stock: [Hapsburg eagle]/GRIES/BACHER
Buch: [Hapsburg eagle]/GRIES/BACHER

16. Basset horn in F. Royal College of Music, London, RCM 242
Figured boxwood and maple body, ivory ferrules and twelve brass keys. Originally eight keys, those for throat G#, E flat/B flat, C#/G# and B flat/F natural keys are later additions. Two basset keys. All key springs attached to keys. Basset keys and those for F#/C# and E/B have been altered at a later date, with salt spoon covers, countersunk holes and rounded key guards. Evidence of original square key guards still visible. Double hole for T3. Very high polish to body. Mouthpiece and bell are not original – according to museum records the bell is a trumpet bell added when the instrument was restored by Edward Planas. Average bore diameter = 15.7mm.
Stamp:
Mouthpiece: none
Barrel: GRIES/BACHER/1
LH: [Hapsburg eagle]/GRIES/BACHER/K K HOF/INSTR·MACHER/IN WIEN/1
RH: [Hapsburg eagle]/GRIES/BACHER/1
Stock: [Hapsburg eagle]/GRIES/BACHER/1
Buch: [Hapsburg eagle]/GRIES/BACHER/K K HOF/INSTR·MACHER/IN WIEN/1
**Lempp, Friedrich**

17. *Bassett horn in F, Landesmuseum Linz, Mu 28*

Boxwood body, with horn and brass ferrules, brass crook and seven brass keys. Bassoon form in six sections – mouthpiece, crook, left hand, butt (on which tone holes and keys for the right hand may be found) bass and bell. Mouthpiece is boxwood with a horn ferrule and stamp on reed side. Two bassett keys. Keys for A flat/E flat, F#/C# and E/B are mounted in brass saddles, all others in wooden blocks with a single central incised line. All key springs are attached to the body of the instrument, except A flat/E flat, which is attached to the key. The rounded brass bell is angled outwards and painted black inside. Traces of gilding on stamps. Total sounding length = 1134.5mm. Average bore diameter = 15.5mm.

Stamp:  
Mouthpiece: LEMPP/1  
Crook: none  
LH: [Hapsburg eagle]/LEMPP/WIENN  
Butt: [Hapsburg eagle]/LEMPP/WIENN  
Bass: [Hapsburg eagle]/LEMPP/WIENN  
Bell: none

**Lotz**

18. *Clarinet in B flat, Musée d’Arts et d’Histoire, IM 136*

Clarinet in B flat, boxwood, with ivory ferrules and five brass keys. Key springs attached to body. Long keys for F#/C# and E/B fitted with sliding extensions, indicating, together with pitch designation ‘B2’ on left and right hand sections, original presence of corps-de-rechange in A. Mouthpiece with horn mount at base. Total sounding length (including mouthpiece) = 600.1mm

Stamp:  
Mouthpiece: THEODOR/LOTZ  
Barrel: 39/[Hapsburg eagle]/THEODOR/LOTZ  
LH: [Hapsburg eagle]/THEODOR/LOTZ/K-K-HOF/INSTR-MACHER/IN WIEN/B2  
RH: [Hapsburg eagle]/THEODOR/LOTZ/B2  
Stock: [Hapsburg eagle]/THEODOR/LOTZ/K-K-HOF/INSTR-MACHER/IN WIEN  
Bell: [Hapsburg eagle]/THEODOR/LOTZ

19. *Bassett horn, Narodní Muzeum Prague, 1365E*

Bassett horn in F, boxwood and maple body, ivory ferrules, eight brass keys. Rounded brass bell painted black on the interior. Composite instrument, made from instruments two and three of a numbered set. Springs for all keys attached to body of instrument, apart from the speaker key. Mouthpiece is unstamped but probably original, due to the characteristic horn mount at the base. Ivory knee. All keys in brass saddles. Traces of gilding remaining in stamp on buch. Probably part of a set with 2094E.

Stamp:  
Mouthpiece: none  
Barrel: [Hapsburg eagle]/THEODOR/LOTZ/3  
LH: [Hapsburg eagle]/THEODOR/LOTZ/K-K-HOF/INSTR-MACHER/IN WIEN/3  
RH: [Hapsburg eagle]/THEODOR/LOTZ/2  
Stock: [Hapsburg eagle]/THEODOR/LOTZ/2
Buch: 2[Hapsburg eagle]2/THEODOR/LOTZ/K-K-HOF/INSTR·MACHER/IN WIEN

20. Basset horn, Narodní Muzeum Prague 2094E
Basset horn in F, boxwood and maple body, ivory ferrules and knee, eight brass keys. Keys for springs all attached to body. Rounded brass bell, painted black on interior. Mouthpiece is un stamped but probably original due to characteristic horn mount at base. The number 1 on this instrument is an Arabic numeral as opposed to the arrow-shaped Viennese number 1. Probably part of a set with 1365E.
Stamp:
Mouthpiece: none
Barrel: [Hapsburg eagle]THEODOR/LOTZ/1
LH: [Hapsburg eagle]THEODOR/LOTZ/K-K-HOF/INSTR·MACHER/IN WIEN/1
RH: [Hapsburg eagle]THEODOR/LOTZ/1
Buch:[Hapsburg eagle]THEODOR/LOTZ/K-K-HOF/INSTR·MACHER/IN WIEN/1

Basset horn in F, boxwood, maple b u c h, ivory and horn ferrules, eight brass keys. Springs for keys attached to body, except for F/C key which is a later, incorrect addition, with the touchpiece reaching between T5 and T6. Section joints marked with burned dots to line up with following section: Left hand to knee, one dot; knee to right hand, three dots; right hand to stock, one dot; stock to chimney, one dot. Grooved marks on the underside of long and basset keys which may possibly correspond to assembly. Some traces of gilding remaining in stamp on stock. All keys in brass saddles. Missing mouthpiece, barrel and bell.
Stamp:
LH: THEODOR/LOTZ
RH: THEODOR/LOTZ
Stock: THEODOR/LOTZ/K-K-HOF/INSTR·MACHER/IN WIEN

22. Basset horn, Germanisches Nationalmuseum Nuremberg, MI 135
Basset horn in F, boxwood, ivory ferrules, brass keys and bell. Mouthpiece is un stamped but probably original as it exhibits the same horn mount seen on other instruments by Lotz, such as the clarinet (IM 136). Ten brass keys, of which the throat G# and C#/G# keys are later additions. The springs for all keys, except for the two later additions, are attached to the body of the instrument. All keys are mounted in brass saddles. Traces of gilding on stamps.
Stamp:
Mouthpiece: none
Barrel: [Hapsburg eagle]THEODOR/LOTZ
LH: [Hapsburg eagle]THEODOR/LOTZ/K-K-HOF/INSTR·MACHER/IN WIEN
RH: THEODOR/LOTZ
Stock: THEODOR/LOTZ
Buch: [Hapsburg eagle]THEODOR/LOTZ/K-K-HOF/INSTR·MACHER/IN WIEN

23. Basset horn, Museum Viadrina, Frankfurt (Oder), V- 433J
Incomplete basset horn in F, boxwood, maple b u c h, ivory ferrules, brass keys and bell. Mouthpiece and left hand section missing. Springs for keys attached to keys.
The presence of two right hand sections of differing lengths indicates that Lotz made *Mutationen* for basset horns as well as clarinets. Key for B natural/F# a later addition. Oval brass bell probably original. Probably formed one of a set with R5366.

Stamp:
- Barrel: [Hapsburg eagle]/THEODOR/LOTZ/3
- RH1: [Hapsburg eagle]/THEODOR/LOTZ/3
- RH2: none
- Stock: [Hapsburg eagle]/THEODOR/LOTZ/3
- Buch: [Hapsburg eagle]/THEODOR/LOTZ/K-K-HOF/INSTR-MACHER-IN WIEN/3

**24. Basset horn, Museum Viadrina, Frankfurt (Oder), R5366**

Incomplete basset horn in F, boxwood, maple *buch*, ivory ferrules, brass keys and bell. Mouthpiece and left hand section missing. Springs for keys attached to keys. The presence of two right hand sections of differing lengths indicates that Lotz made *Mutationen* for basset horns as well as clarinets. Key for B natural/F# a later addition. Oval brass bell probably original. Probably formed one of a set with V-433J.

Stamp:
- Barrel: [Hapsburg eagle]/THEODOR/LOTZ/2
- RH1: [Hapsburg eagle]/THEODOR/LOTZ/2
- RH2: 2
- Stock: [Hapsburg eagle]/THEODOR/LOTZ/2
- Buch: [Hapsburg eagle]/THEODOR/LOTZ/K-K-HOF/INSTR-MACHER-IN WIEN/2

**Rockobaur**

**25. Clarinet in C, Germanisches Nationalmuseum Nuremberg, MIR 425**

Fruitwood body, horn ferrules and three brass keys. All keys in wooden blocks and rings – Speaker key saddle is a later repair. All key springs attached to body. E/B key on dorsal side, alternate hole for F/C with plug still extant. Mouthpiece and barrel integral, with the barrel of horn. Large horn ferrule at top of stock. Several rings have a single central incised line. Each section has two Xs scratched on the right side (player’s perspective). Total sounding length = 610.7mm (with mouthpiece). Average bore diameter = 13.6mm.

Stamp:
- Mouthpiece/Barrel: none
- Upper section: [Maltese cross]/R. PAUR [in scroll]/M
- Lower section: none
- Bell: [Maltese cross]/R. PAUR [in scroll]/M

**26. Clarinette d’amour, Vienna: GdM 130**

Fruitwood body, horn ferrules and three brass keys. All keys in wooden blocks and rings. All key springs attached to body. Mouthpiece with ‘duckbill’ profile and horn mount at base. Brass crook. Alternate holes for F/C, one permanently plugged. E/B key originally mounted on dorsal side of the instrument, now turned to be operated
by L4 and shank has been angled to bring it closer to the finger. Wooden rings have central incised line. Large X scratched into brass of crook. A pair with GdM 131.

Stamp:
Mouthpiece: none
Crook: X
Upper section: [Maltese cross]/R. PAUR [in scroll]
Lower section: M
Bell: [Maltese cross]/R. PAUR [in scroll]/M

27. Clarinette d’amour, Vienna: GdM 131
Fruitwood body, horn ferrules and three brass keys. All keys in wooden blocks and rings. All key springs attached to body. Mouthpiece with ‘duckbill’ profile and horn mount at base. Brass crook. Alternate holes for F/C, one permanently plugged. E/B key originally mounted on dorsal side of the instrument, now turned to be operated by L4 and shank has been angled to bring it closer to the finger. Wooden rings have central incised line. Large X scratched into brass of crook. Signs of extensive use. Repair to wooden ring around E/B key. A pair with GdM 130.

Stamp:
Mouthpiece: none
Crook: X
Upper section: [Maltese cross]/R. PAUR [in scroll]
Lower section: M
Bell: [Maltese cross]/R. PAUR [in scroll]/M

Scholl
28. Clarinette d’amour, Gesellschaft der Musikfreunde, Vienna: GdM 132
Boxwood body, horn ferrules, with a brass crook and five brass keys. All key springs are attached to the key, and all keys are in brass saddles. No guide for F#/C# key. Dark stain. Mouthpiece has a horn mount at the base and belongs on GdM 133. Touchpiece shape for A flat/E flat key very similar to that on Lotz clarinet (IM 136). No incised lines on wooden rings for A and Speaker keys. Mouthpiece stamp and tooth marks on upper side of mouthpiece, indicating instrument was played with reed below embouchure. A pair with GdM 133.

Stamp:
Mouthpiece: 2
Crook: none
LH: [Hapsburg eagle]/F.SCHOLL/WIEN/1
RH: [Hapsburg eagle]/F.SCHOLL/WIEN/1
Stock: [Hapsburg eagle]/F.SCHOLL/WIEN/1
Bell: [Hapsburg eagle]/F.SCHOLL/WIEN/1

29. Clarinette d’amour, Gesellschaft der Musikfreunde, Vienna: GdM 133
Boxwood body, horn ferrules, with a brass crook and five brass keys. All key springs are attached to the key, and all keys are in brass saddles. No guide for F#/C# key. Mouthpiece has a horn mount at base and belongs on GdM 132. Mouthpiece stamp and tooth marks on upper side of mouthpiece, indicating instrument was played with reed below embouchure. More pronounced undercutting on this instrument compared to GdM 132, especially on T5. A pair with GdM 132.
Stamp:
Mouthpiece: 1
Crook: none
LH: [Hapsburg eagle]/F. SCHOLL/WIEN/2
RH: [Hapsburg eagle]/F. SCHOLL/WIEN/2
Stock: [Hapsburg eagle]/F. SCHOLL/WIEN/2
Bell: [Hapsburg eagle]/F. SCHOLL/WIEN/2

Strobach

30. Basset horn, Berlin 2915
Fragment, only mouthpiece/barrel, left hand section and mouthpiece cap remaining. Mouthpiece and barrel are integral and made of ivory. Ivory cap to mouthpiece cap. No springs attached to A and Speaker keys. Hole for C#/G# key present but key and saddle is missing. Saddle for this key appears to have been mounted on the dorsal side of the instrument. Average bore diameter = 13.9mm.
Stamp:
Mouthpiece/barrel: none
LH: [eight-petalled flower]/STROBACH/ CARLSBAAD/[eight-petalled flower]

31. Basset horn in G, Narodní Muzeum Prague, 225E
Boxwood body, horn ferrules and eleven brass keys. All keys in wooden blocks except for C#/G# and B flat/F natural which are probably later additions. Throat G# probably also added later. Two bassett keys. All key springs attached to the keys. A flat/E flat and F/C keys reversed from normal position. Integral mouthpiece and barrel, with barrel of horn. Knee integral to right hand section. No buch, but a lower knee which leads to a bulbus bell, closed at the end with a plug of boxwood, ivory and horn and a large sound hole on the side. Angle of upper knee = 155°. Angle of lower knee = 125°.
Stamp:
Mouthpiece/barrel: none
LH: [eight-petalled flower]/STROBACH/ CARLSBAAD/[eight-petalled flower]
RH: STROBACH
Stock: [eight-petalled flower]/STROBACH/ CARLSBAAD/[eight-petalled flower]
Bell: none

32. Basset horn in F, Narodní Muzeum Prague, 191E
Fruitwood body, horn ferrules and eight brass keys. All keys in wooden blocks and rings. All key springs attached to keys. A flat/E flat and F/C keys reversed to normal position. Two bassett keys. Integral mouthpiece and barrel. Knee is integral to right hand section. No buch, but a lower knee which leads to a bulbus bell, closed at the end with a plug of boxwood, ivory and horn and a large sound hole on the side. Traces of gilding remaining in stamps. Very similar instrument to EUCHMI 969. Angle of upper knee = 145°. Angle of lower knee = 115°. Average bore diameter = 13.4mm.
Stamp:
Mouthpiece/barrel: none
LH: STROBACH/ CARLSBAAD/[eight-petalled flower x 2]/[eight-petalled flower]
RH: [eight-petalled flower x 2]/[eight-petalled flower]
Stock: STROBACH/[eight-petalled flower x 2]/[eight-petalled flower]
Bell: [eight-petalled flower x 3]

33. Basset horn in F, Narodní Muzeum Prague, 81E
Boxwood body, horn ferrules and ten brass keys. All keys in wooden blocks or rings. All key springs attached to keys. Four basset keys – E flat, D, C#, C. Left hand section has socket rather than tenon at upper end and a horn ferrule. Integral mouthpiece and barrel, barrel is horn. Knee is integral to right hand section. No buch, but a lower knee which leads to a bulbous bell, closed at the end with a plug of boxwood, ivory and horn and a large sound hole on the side. Boxwood mouthpiece cap extant. Instrument is badly warped. A flat/E flat and F/C keys are reversed from normal position. Upper knee angle = 150°. Lower knee angle = 130°. Average bore diameter = 14.1mm.
Stamp:
Mouthpiece/barrel: none
LH: [eight-petalled flower]/STROBACH/CARLSBAAD/[Maltese cross]/[Maltese cross x 2]
RH: [eight-petalled flower]/STROBACH/[Maltese cross]/[Maltese cross x 2]
Stock: [eight-petalled flower]/STROBACH/CARLSBAAD/[Maltese cross]/[Maltese cross x 2]
Bell: none

34. Basset horn in F, Narodní Muzeum Prague, 465E
Straight form. Boxwood body, ivory ferrules with ten brass keys. All keys in wooden blocks, except for B natural/F#, which is probably a later addition. Throat G# also probably added later. Two basset keys. All key springs attached to keys. A flat/E flat and F/C keys reversed from normal position. Barrel angled but rest of the instrument is straight. Bell and possibly lower knee missing. Barrel angle = 165°. Average bore diameter = 13.9mm.
Stamp:
Mouthpiece: none
Barrel: STROBACH
LH: STROBACH
RH: STROBACH
Stock: STROBACH/CARLSBAAD/[eight-petalled flower]

35. Basset horn in F, Narodní Museum Prague, 132E
Boxwood body, horn ferrules and eight brass keys. All keys in wooden blocks. All key springs attached to keys. Angled barrel, knee integral to right hand section, lower knee leading to bulbous bell which is stopped at the end with boxwood, ivory and horn. Central boss on plug is missing. Large sound hole on side of bell. A flat/E flat and F/C keys reversed from normal position. Two basset keys, but etched marks on body indicate two extra basset keys were planned and positioned, but not added. Mouthpiece missing. Total sounding length = 974.3mm. Barrel angle = 170°. Knee angle = 150°. Lower knee angle = 115°.
Stamp:
Barrel: none
LH: [Maltese cross]/STROBACH/CARLSBAAD/[Maltese cross]
36. Basset horn in F, Germanisches Nationalmuseum Nuremberg, MIR 471
Boxwood body, horn ferrules and sixteen brass keys. Most keys mounted in wooden blocks, others – E flat/B flat, C#/G#, B flat/F natural, B natural/F# may have been added later. Throat G# key may also be later addition. All key springs attached to keys. A flat/E flat and F/C keys originally in reversed position, but have been altered to match that of clarinet. Angled barrel, knee integral to right hand section and lower angled knee leading to bulbous bell which is stopped at the end with a plug made of boxwood, ivory and horn. Large sounding hole on side of bell. Top tenon of lower knee is threaded and screws into socket of stock. Four basset keys – E flat, D, C#, C. Mouthpiece is probably not original. Brass thumb rest. Angle of knee = 140°. Lower knee angle = 110°. Average bore diameter = 13.9mm.
Stamp:
Barrel: none
LH: [eight-petalled flower]/STROBACH/CARLSBAAD/[Maltese cross x 2]
RH: none
Stock: [Maltese cross]/STROBACH/CARLSBAAD/[Maltese cross x 2]
Bell: none

37. Basset horn in F, Deutsches Museum Munich, 63678
Boxwood body, horn ferrules and eight brass keys. All keys in wooden blocks and rings. All key springs attached to keys. Angled barrel, knee integral to right hand section, lower knee leading to bulbous bell plugged at end with boxwood, ivory and horn and with large sound hole on the side. Two basset keys. A flat/E flat and F/C keys reversed from normal position. Mouthpiece may not be original. Average bore diameter = 13.9mm.
Stamp:
Mouthpiece: none
Barrel: none
LH: [eight-petalled flower]/STROBACH/CARLSBAAD/[eight-petalled flower]
RH: none
Stock: [eight-petalled flower]/STROBACH/CARLSBAAD/[eight-petalled flower]
Bell: none

38. Basset horn in F, Edinburgh University Collection of Historic Musical Instruments 969
Fruitwood body, horn ferrules and eight brass keys. All keys in wooden blocks and rings. All key springs attached to keys. Integral mouthpiece and straight barrel. Integral knee and right hand section. Lower knee leads to bulbous bell, plugged at the end with boxwood, ivory and horn, and with a large sound hole on the side. A flat/E flat and F/C keys reversed from normal position. Two basset keys. Total sounding length = 1073.5. Angle of knee = 150°. Angle of lower knee = 105°. Average bore diameter = 13.9mm.
Stamp:
Mouthpiece/barrel: none
39. Walking stick basset horn, Kunsthistorisches Museum Vienna, SAM 329
Maple body, horn ferrules, eight brass keys and end cap. Mouthpiece cap with ivory mount extant. Straight form. All keys in wooden blocks and rings. All key springs attached to keys. Two basset keys. A flat/E flat and F/C keys reversed from normal position. Integral mouthpiece and barrel.
Stamp:
Mouthpiece/Barrel: none
LH: STROBACH/CARLSBAAD/[eight-petalled flower]
RH: none

**Tauber**

40. Clarinet in B flat, Edinburgh University Collection of Historic Musical Instruments 4798
Boxwood body, horn ferrules, six brass keys. All key springs attached to body, except for C#/G# which is attached to the key. This key may be a later addition, but may have been added by Tauber – identical in shape and mounting to C#G# key on EUCHMI 4779. Long keys with sliding extensions indicating original presence of \textit{corps-de-rechange}. All keys in brass saddles. Lower ferrule on bell is wood. Mouthpiece missing, barrel not original. Very similar in many aspects to Lotz clarinet (IM 136), including shape and mounting method of keys and stock swelling. Total sounding length = 600.8mm. Average bore diameter = 14.8mm.
Stamp:
Barrel: none
LH: [Hapsburg eagle]/TAUBER/WIENN/B
RH: TAUBER/WIENN/B
Stock: [Hapsburg eagle]/KASPAR/TAUBER/WIENN
Bell: [Hapsburg eagle]/TAUBER/WIENN

41. Clarinet in Bb, EUCHMI: 5267
Boxwood body, ivory ferrules and twelve brass keys with flat round key heads. All keys are original and mounted in wooden blocks. All key springs attached to keys. Single incised central line on wooden rings for A and Speaker keys. Seating for A flat/E flat and E/B keys countersunk. Sliding extensions on touchpieces for long keys, indicating original existence of \textit{corps-de-rechange}. Lower ivory ferrule on bell very large. A flat/E flat touchpiece very similar to Lotz (IM 136). Mouthpiece is a cast copy, probably of an original Viennese mouthpiece. Total sounding length = 589.6 (not including mouthpiece). Average bore diameter = 14.3mm.
Stamp:
Mouthpiece: none
Barrel: [Hapsburg eagle]/TAUBER/WIEN
LH: [Hapsburg eagle]/TAUBER/WIEN/B
RH: TAUBER/WIEN/B
Stock: [Hapsburg eagle]/KASPAR/TAUBER/WIEN
42. Clarinet in A, EUCHMI 4779
Boxwood body, ivory ferrules and six brass keys. All keys in brass saddles and all key springs are attached to body, except C#/G#, which is attached to the key. This key may be a later addition, but may have been added by Tauber – identical in shape and mounting to C#G# key on EUCHMI 4798. Single incised central lines on wooden rings for A and Speaker keys. Sliding extensions on long key touchpieces suggest original existence of corps-de-rechange. Touchpiece for A flat/E flat very similar to Lotz (IM 136). Lower ferrule on bell is missing. Mouthpiece missing. Upper ferrule on barrel is a repair. Total sounding length = 626.2. Average bore diameter = 14.9mm.
Stamp:
Barrel: [Hapsburg eagle]/TAUBER/WIENN
LH: [Hapsburg eagle]/TAUBER/WIENN/A
RH: TABER/WIEN/A
Stock: [Hapsburg eagle]/KASPAR/TAUBER/WIENN
Bell: [Hapsburg eagle]/TAUBER/WIENN

Bassoons/Contrabassoons

Doleisch
43. Bassoon, Musikinstrumentenmuseum der Leipzig Universität, 1370
Maple body, brass bands at tenons and five keys. Originally four keys – brass speaker key added later. All other keys are wooden. All original keys are in wooden blocks. Springs for original keys are attached to the body, the speaker key spring is attached to the key. Brass band at top of bass section is likely a repair. Touchpiece for F key curves away from A flat key. A flat key missing. Brass coronet at top of bell. Indentations in wood around coronet indicate hammer marks from the mounting of the coronet. Stamp very faint. Total sounding length = 2069mm.
Stamp:
Wing: none
Butt: DOLEISCH/PRAG/1783
Bass: none
Bell: none

44. Bassoon, Museum Viadrina, Frankfurt (Oder), V-423J
Maple body, brass bands at tenons and five brass keys. All keys appear to be original. F and A flat keys on the front of the instrument are mounted in wooden blocks, all keys on the dorsal side are mounted in brass saddles. The springs for keys in wooden blocks are attached to the body and those in brass saddles are attached to the key. F key touchpiece curves towards A flat touchpiece. A flat shank is bent to one side to accommodate wooden block for F key. ‘1710.’ is beaten into the front of the top brass band on the butt. Brass band at top of bell. Stamp very faint. Total sounding length = 2049mm.
Stamp:
Wing: none
 Butt: [Hapsburg eagle]/DOLEISCH/PRAG/1801/[six-petalled flower]
 Bass: none
 Bell: [Hapsburg eagle]/DOLEISCH/PRAG/[six-petalled flower]

45. Bassoon, Narodní Muzeum Prague, 2515E
Maple body, brass bands at tenons and eight brass keys. Two speaker keys and right thumb keys may be later additions. Two speaker keys and right thumb key mounted in brass saddles, all others mounted in wooden blocks. All key springs attached to the keys. Wood has a dark stain with high polish. Original key shanks show very similar decoration to that found on the Dolesich clarinet (EUCHMI 4843, see number 2 above). Integral wooden key guard for F key. Total sounding length = 2025mm.
Stamp:
Wing: none
 Butt: [Hapsburg eagle]/DOLEISCH/PRAG/1805/[six-petalled flower]
 Bass: none
 Bell: [Hapsburg eagle]/DOLEISCH/PRAG/[six-petalled flower]

Grenser, August

46. Bassoon, Museum Viadrina, Frankfurt (Oder), V-178J
Maple body, brass bands at tenons and five brass keys. May originally have been four – E flat key is mounted in a brass saddle which could indicate it is a later addition, or possibly a repair. All other keys mounted in wooden blocks. All key springs attached to body. Key-head for E flat key teardrop shaped, all others horseshoe shaped. Swallowtail touchpiece for F key. Brass coronet at top of bell. Presence of number ‘3’ on wing section stamp suggests original presence of multiple wing sections in order to accommodate different pitches. Integral wooden key guard for F key. Total sounding length = 1992mm.
Stamp:
Wing: 3/[crossed swords]/A.GRENSER/[five-pointed star]
 Butt: .1772/[crossed swords]/A.GRENSER/DRESDEN/[five-pointed star]
 Bass: [crossed swords]/A.GRENSER/[five-pointed star]
 Bell: [crossed swords]/A.GRENSER/[five-pointed star]

47. Bassoon, Musikinstrumentenmuseum der Universität Leipzig, 1376
Maple body, brass bands at tenons and five brass keys. May originally have been four – E flat key is mounted in a brass saddle on the front of the instrument. As the Grenser family is usually credited with the positioning of this key on the front of the instrument (see Chapter 4) this key may nevertheless be original. All other keys are mounted in wooden blocks. All keys springs attached to body. All key-heads horseshoe shaped. Brass band above lower tenon on wing section is likely to be a repair and, combined with the extension of the tenon in resin, was probably done in order to lengthen the section. Brass coronet on top of bell. Swallowtail touchpiece for F key. Integral wooden key guard for F key. Extensive woodworm damage to butt and wing sections. Total sounding length = 2067mm.
Stamp:
Wing: illegible

430
48. **Bassoon, Musikinstrumentenmuseum der Universität Leipzig, 1377**
Maple body, brass bands at tenons and eight keys. Two speaker keys and right thumb key are later additions. F key is made of bone, E flat, A flat and B flat bass keys are of ivory. A flat key head is a repair in brass. D key is of brass but is a later repair – the key-head is of ivory. Two speaker keys and right thumb key are made of brass. All keys, except two speaker keys and right thumb keys, are mounted in wooden blocks. All key springs, except the two speaker keys and right thumb keys, are attached to the body. All original key-heads are square with bevelled corners. Integral wooden key guard for F key. Integral wooden ferrule at top of bell. Total sounding length = 2115mm.

Stamp:
Wing: [crossed swords]/A. GRENSER/[five-pointed star]
Butt: [crossed swords]/A. GRENSER/DRESDEN/1786/[five-pointed star]
Bass: none
Bell: none

49. **Bassoon, Musikinstrumentenmuseum der Universität Leipzig, 1378**
Figured maple body, brass bands at tenons and five brass keys. All keys in wooden blocks and all key springs attached to body. Swallowtail touchpiece for F key, decorated with cut-away circles. All key-heads are square with bevelled corners. Integral wooden key guard for F key. Integral wooden ferrule at top of bell. Presence of number ‘2’ on wing stamp suggests original presence of multiple wing sections of differing lengths to accommodate difference pitches. Traces of gilding in stamp on butt. Total sounding length = 2113mm.

Stamp:
Wing: 2/[crossed swords]/A. GRENSER
Butt: [crossed swords]/A. GRENSER/DRESDEN/[small star] 1788 [small star]
Bass: [crossed swords]/A. GRENSER
Bell: none

**Lempp, Friedrich**

50. **Bassoon, Technisches Museum Vienna, 22363**
Maple body, brass bands at tenons and five brass keys. All keys now missing. Keys on the front of the instrument were mounted in saddles, those on the dorsal side in wooden blocks. Small turned wooden ferrules above and below raised finger hole section on wing. Also turned decorative rings at the top of the bass section. Brass coronet at top of bell. Total sounding length = 2058mm.

Stamp:
Wing: none
Butt: [Hapsburg eagle]/LEMPP/WIEN [in scroll]
Bass: [Hapsburg eagle]/LEMPP/WIEN [in scroll]
Bell: none
**Lempp, Martin**

51. **Bassoon, Yale University Collection of Historic Instruments, 3446.68**
    Maple body, brass bands at tenons and eight brass keys. All keys in brass saddles. All key springs attached to keys. B flat bottom key is missing. Lower speaker key shows strong resemblance in shape to D basset key on Lempp basset horn (Linz: Mu 28 see number 17). Key-heads for both speaker keys and F key are teardrop shaped, all others horseshoe shaped. Touchpiece for F key curved towards A flat key. Brass band at top of bell. Total sounding length = 2051mm.
    Stamp:
    Wing: [Hapsburg eagle]/LEMPP/WIENN
    Butt: [Hapsburg eagle]/LEMPP/WIENN
    Bass: [Hapsburg eagle]/LEMPP/WIENN
    Bell: none

52. **Contrabassoon, Landesmuseum Linz, Mu 37**
    Maple body, brass bands at tenons and five brass keys. All keys in brass saddles and all key springs attached to body. Sections comprise inverted butt, upper wing connector, upper wing, lower wing connector, lower wing, butt, bass 1, bass 2 and bell. The two sides of the instrument are held together by an X shaped brass brace between bass 1 and the lower wing section. Ivory bushing in right thumb hole. Both stamps are upside down, with remains of a stamp right way up visible on the bell. Both stamps gilt. Brass band at top of bell. F key-head missing.
    Stamp:
    Inverted butt: none
    Upper wing ext: none
    Upper wing: none
    Lower wing ext: none
    Butt: [Hapsburg eagle]/M. LEMP/K.A.K.K. HOF/INSTRUMENTMACHER/IN WIENN [whole stamp in wreath]
    Bass 1: none
    Bass 2: none
    Bell: [Hapsburg eagle]/M. LEMP/K.A.K.K. HOF/INSTRUMENTMACHER/IN WIENN [whole stamp in wreath]

53. **Contrabassoon, MIM, Brussels, 1002**
    Maple body, brass bands at tenons and five brass keys. All keys in brass saddles and all key springs attached to body. Sections comprise inverted butt (now missing), upper wing connector, upper wing, lower wing connector, lower wing, butt, bass 1, bass 2 and bell. The two sides of the instrument are held together by an X shaped brass brace between bass 1 and lower wing section. Brass hook on bell corresponds to a brass loop on the upper wing section to further hold the instrument together. Brass band at top of bell.
    Stamp:
    Upper wing ext: none
    Upper wing: none
    Lower wing ext: none
    Butt:[Hapsburg eagle]/MARTIN LEMP/K.A.K.K. HOF/INSTRUMENTMACHER/IN WIENN

432
Lotz

54. Bassoon, Pirker Collection, Vienna
Maple body, brass bands at tenons and five brass keys. All key springs attached to keys. All keys in brass saddles. Keys for F and A flat probably original, others, especially E flat, may be later replacements. All key-heads horseshoe shaped. Swallowtail touchpiece for F key. Horn ring at top of bell is a later addition, as is slight flare to inside of bell at top. Wing section probably not original. Total sounding length = 2060mm.
Stamp:
Wing: none
Butt: [Hapsburg eagle]/THEODOR/LOTZ
Bass: none
Bell: [Hapsburg eagle]/THEODOR/LOTZ/[Hapsburg eagle]

55. Bassoon, Georg-August-Universität Göttingen, 551
Maple body, brass bands at tenons and five brass keys. All keys in brass saddles. Key springs on the front of the instrument attached to key, on dorsal side attached to body. All keys likely to be original, mostly horseshoe shaped key-heads, E flat key-head teardrop shaped. E flat key mounted on cut away section of dorsal platform. Swallowtail touchpiece for F key. Bell is not original. Total sounding length = 2064mm.
Stamp:
Wing: [Hapsburg eagle]/THEODOR/LOTZ
Butt: [Hapsburg eagle]/THEODOR/LOTZ
Bass: [Hapsburg eagle]/THEODOR/LOTZ/K·K·HOF/INSTR-MACHER/IN WIEN
Bell: none

56. Bassoon, Seidl Collection, Prague
Maple body, brass bands at tenons and eight brass keys. All keys in brass saddles. F, E flat, two speaker and right thumb keys probably later replacements or additions. All key springs attached to keys. Speaker key-heads are rounded, E flat key-head is spatula shaped and all others are horseshoe shaped. Ivory key guard below F key-head. E flat key mounted on cut away section of dorsal platform. Swallowtail touchpiece for F key. Top of bell has been altered for the addition of a ferrule which is now missing. Extensive woodworm activity. Total sounding length = 2067mm.
Stamp:
Wing: [Hapsburg eagle]/THEODOR/LOTZ
Butt: [Hapsburg eagle]/THEODOR/LOTZ/K·K·HOF/INSTR-MACHER/IN WIEN
Bass: none
Bell: [Hapsburg eagle]/THEODOR/LOTZ/K·K·HOF/INSTR-MACHER/IN WIEN
57. Bassoon, Narodní Muzeum Prague, E_1834
Maple body, brass bands at tenons and eight brass keys. All keys in brass saddles. Two speaker keys probably a later addition, also right thumb key may not be original. All key springs attached to body. Speaker, E flat and right thumb key-heads teardrop shaped, all others horseshoe shaped. D key-head missing. E flat key mounted flat on dorsal platform. Swallowtail touchpiece for F key, although of a different kind to numbers 54 - 56. Brass coronet on top of bell.
Stamp:
Wing: [Hapsburg eagle]/THEODOR/LOTZ
Butt: [Hapsburg eagle]/THEODOR/LOTZ/K-K-HOF/INSTR-MACHER/IN WIEN
Bass: [Hapsburg eagle]/THEODOR/LOTZ/K-K-HOF/INSTR-MACHER/IN WIEN
Bell: [Hapsburg eagle]/THEODOR/LOTZ

Rockobaur
58. Bassoon, Landesmuseum Linz, Mu 117
Maple body, brass bands at tenons and seven brass keys. Originally five keys – two speaker keys added later. Keys on the front of the instrument are in saddles, those on the dorsal side are in wooden blocks. All keys springs attached to body, except for A flat and speaker keys, which are attached to the key. Attempt may have been made to originally mount speaker keys on front of wing, as two places for saddles and one tone hole have been made and filled in. Swallowtail touchpiece for F key, with a repair to the shank and saddle pins. These are anchored into the body of the instrument further along the key and reach the pivot point by two right angles. Small turned wooden ferrules above and below raised finger hole section on wing. Also turned decorative rings at the top of the bass section. Brass coronet at top of bell. Total sounding length = 2032mm.
Stamp:
Wing: none
Butt: ROCKO/BAUR/WIEN
Bass: none
Bell: none

Scholl
59. Bassoon, Gesellschaft der Musikfreunde, Vienna, GdM 162
Maple body, brass bands at tenons and eight brass keys. All keys in brass saddles. All key springs attached to keys. Speaker key-heads teardrop shaped, right thumb, F and A flat octagonal, D, E flat and B flat bottom horseshoe shaped. Swallowtail touchpiece for F key. Brass cap missing from end of butt, wood badly damaged. Ivory bushing in left thumb hole. Band missing at top of bell.
Stamp:
Wing: none
Butt: none
Bass: none
Bell: [Hapsburg eagle]/F.SCHOLL/WIEN/2
Tauber

60. Bassoon, Germanisches Nationalmuseum, MIR 411
Maple body, brass bands at tenons and eight brass keys. All keys in brass saddles. All key springs attached to body, some keys double sprung. Highly decorated, with inlaid silver tracery, copper and silver studs and engraved brass bands. On dorsal side of butt below brass band is an enamel inlay of a bird and flower, using white, beige, green, black and red enamel. Bird may be representative of Tauber’s name, ‘taube’ in German meaning a pigeon or dove. Brass band around socket of bell is from the instruments’ restoration by the museum. Bell has incised lines above the brass band and at the shoulder. The number ‘1’ is carved into the bell below the brass band at the top. Key-heads for the two speaker keys, A flat, right thumb and E flat keys are teardrop shaped, all others horseshoe shaped. Brass band at top of bell.
Stamp:
Wing: none
Butt: none
Bass: none
Bell: [Hapsburg eagle]/KASPAR/TAUBER

61. Bassoon, Galleria d’Accademia, Florence, 146
Maple body, brass bands at tenons and seven brass keys. All keys in brass saddles. All key springs attached to keys. Joint on wing section above raised finger hole platform is probably a tuning slide, but is now seized. Key-heads for E flat and right thumb are teardrop shaped, all others are horseshoe shaped. Touchpiece for F is curved towards A flat touchpiece. Wooden rim at top of bell. Traces of gilding in stamps. Total sounding length = 2101mm.
Stamp:
Wing: none
Butt: [Hapsburg eagle]/TAUBER/WIEN
Bass: TAUBER/WIEN
Bell: [Hapsburg eagle]/TAUBER/WIEN

Truska

62. Contrabassoon, Narodni Muzeum Prague, 183E
Maple body, brass bands at tenons and five brass keys. All keys in brass saddles and all key springs attached to keys. All keys appear to be original, with flat round key-heads. Sections comprise crook, crook extension, inverted butt, wing, lower wing connector, butt, bass and bell. Highly decorated with inlaid etched bone and engraved patterns on brass parts. The bone decorations are mostly geometric shapes and the tone holes are surrounded by a flower motive in bone. Truska’s mark is engraved on a brass shield on the front of the butt section. The key cover for B flat bass is also decorated with an engraved and cut-away design.
Stamp:
Inverted butt: none
Wing: none
Lower wing ext: none
Butt: I: TRUSKA/PRAGA
Bass: none
Bell: none
Flutes

Lotz (?)

63. Flute in C, Wilson Private Collection, USA
Boxwood, integral boxwood ferrules and one brass key. Boxwood cap on headjoint. Single key mounted in wooden ring with single central incised line. Key spring attached to key – may be a later repair. Minimal turned decoration. Wooden band around headjoint above embouchure hole may indicate a repair to a crack or an alteration to the length of the section. Key-head flat and square.
Stamp:
Headjoint: [eight-petalled flower]/LOTZ/[eight-petalled flower]
LH: [eight-petalled flower]/LOTZ/[eight-petalled flower]
RH: [eight-petalled flower]/LOTZ/[eight-petalled flower]
Foot: [eight-petalled flower]/LOTZ/[eight-petalled flower]

Rockobaur

64. Flute in C, Landesmuseum Linz, Mu 139
Boxwood, ivory ferrules and cap and one silver key. Key mounted in wooden swelling and with spring attached to key. The spring is probably a later repair. Four alternate left hand sections. Wood stained dark. Minimal turned decoration. Significant undercutting on right hand section, less pronounced on left hand sections, particularly the longest of these. Total sounding length (from cork to end, using longest left hand section) = 572.3mm.
Stamp:
Headjoint: ROCKO./BAUR/WIEN/[lion rampant]
LHs: ROCKO./BAUR/[lion rampant]
RH: ROCKO./BAUR/[lion rampant]
Foot: ROCKO./BAUR/[lion rampant]

Tauber

65. Flute in C, Musikinstrumentenmuseum der Universität Leipzig, 1254
Ivory body with four silver keys. All keys in integral ivory blocks or swellings and all key springs are attached to keys. The headjoint is lined with metal and has a separate barrel, also lined with metal, which has three inset red lines marking extensions on tuning slide. Headjoint cap fitted with screw to adjust cork, also with red indicator lines. Key-heads flat and square. Severe crack in headjoint. Significant undercutting on tone holes. To this author’s knowledge, the only extant instrument by Tauber to be made from ivory. Total sounding length (from cork to end) = 545.3mm.
Stamp:
Headjoint: [Hapsburg eagle]/KASPAR/TAUBER/VIENN
Barrel: [Hapsburg eagle]/KASPAR/TAUBER/VIENN
LH: [Hapsburg eagle]/TAUBER/VIENN
RH: [Hapsburg eagle]/TAUBER/VIENN
Foot: [Hapsburg eagle]/TAUBER/VIENN
Oboes/Cor Anglais

Baur

66. Cor anglais (fragment), Berlin, 294
Left hand section and bell only. Curved form, body covered in brown leather, horn ferrules. Double hole for T3. Both horn ferrules marked with a large X on dorsal side.
Stamp:
LH: [Lion rampant]/J.BAUR/WIEN. [with embellishment above the U]
Bell: [Lion rampant]/J.BAUR/WIEN. [with embellishment above the U]

67. Cor anglais, Germanisches Nationalmuseum Nuremberg, MI 110
Curved from, body covered in brown leather, horn ferrules and two brass keys. All keys in wooden blocks and all key springs attached to body. Bell of maple. Double hole for T3. Swallowtail touchpiece for C key. Composite instrument. Unlikely to be made up from instruments of the same set as stamp symbols differ. Texture and colour of leather on finger hole sections differs. Associated silver and gold tasselled cord, possibly used as a shoulder strap. One small brass ring through a bite in the cord. Total sounding length = 760.2mm.
Stamp:
LH: [Hapsburg eagle]/J. BAUR/WIEN./1 [with embellishment above the U]
RH: [Lion rampant]/J. BAUR/WIEN./2 [with embellishment above the U]
Bell: [Lion rampant]/J. BAUR/WIEN.:2 [with embellishment above the U]

68. Cor anglais, Gesellschaft der Musikfreunde, 154
Curve form, body covered in brown leather, horn ferrules and seven brass keys. Only two keys original (C and E flat keys). These keys are mounted in wooden blocks, all others in brass saddles. Original key springs attached to body. Amongst later additions are two keys on the dorsal side for operation by the right thumb. Swallowtail touchpiece for F key. Bell maple. Some embossed decoration on the leather of the body with some gilt remaining. Gilding also remaining in stamp on bell. ‘2’ stamped beside reed well.
Stamp:
LH: [Hapsburg eagle]/J. BAUR/WIEN. [with embellishment above the U]
RH: [Hapsburg eagle]/J. BAUR/WIEN. [with embellishment above the U]
Bell: [Hapsburg eagle]/J. BAUR/WIEN. [with embellishment above the U]

Doleisch

69. Oboe, Narodní Muzeum Prague, 324E
Boxwood body, integral boxwood ferrules and four brass keys. All keys mounted in wooden blocks and rings. All key springs, apart from thumb key, attached to keys. Upper ring on right hand section square in profile, lower rounded, both undecorated. Swallowtail touchpiece for C key. Number ‘1’ on left hand section indicates original presence of multiple left hand sections of differing lengths. Total sounding length = 563.5mm.
Stamp:
LH: [star]/DOLEISCH/[star]/1
RH: [star]/DOLEISCH/[star]
70. Oboe, Narodní Muzeum Prague, 144E
Boxwood body, integral boxwood ferrules and two brass keys. Keys mounted in wooden rings and all key springs attached to body. Upper ring on right hand section square in profile, lower rounded, both undecorated. Swallowtail touchpiece for C key. Ferrule on right hand section is a different colour to the rest of the instrument – either stained or covered with a veneer. Total sounding length = 555.6mm.
Stamp:
LH: [Lion rampant]/DOLEISCH/PRAG/[star]
RH: [Lion rampant]/DOLEISCH/PRAG/[star]
Bell: [Lion rampant]/DOLEISCH/PRAG/1787/[star]

71. Oboe, Landesmuseum Linz, Mu 120
Boxwood body, integral horn ferrules and two brass keys. All keys in wooden rings and all key springs attached to body. Horn ferrules at top and bottom of bell may be a later repair. Wooden rings for key mounts decorated with single central incised line. Upper ring square in profile and lower ring rounded. Swallowtail touchpiece for C key with diamond-shaped notch in ‘v’ of swallowtail. Slightly angular baluster with turned rings and recesses. Double hole for T3. Bell badly cracked. From Stift Wilhering. Total sounding length = 544.8mm.
Stamp:
LH: LEMPP/WIENN [in scroll]/[five-petalled flower]
RH: LEMPP/[five-petalled flower]
Bell: LEMPP/WIENN [in scroll]/[five-petalled flower x 2]/[five-petalled flower]

72. Oboe, Yale University Collection of Historic Musical Instruments, 3413.80
Boxwood body, integral boxwood ferrules and two brass keys. All keys in wooden rings and all key springs attached to keys. Upper wooden ring mounting keys decorated with two sets of incised double lines, square in profile, while the lower ring is rounded and undecorated. Double hole for T3 and T4. Swallowtail touchpiece for C key with diamond-shaped notch in ‘v’ of swallowtail. Total sounding length = 559mm.
Stamp:
LH: LEMPP/WIENN [in scroll]/[five-petalled flower x 2]
RH: [seven-petalled flower] LEMPP [seven-petalled flower]
Bell: [Hapsburg eagle]/LEMP/WIENN [in scroll]

73. Tenor oboe, Gesellschaft der Musikfreunde, Vienna, GdM 153
Straight form. Classified by the Gesellschaft der Musikfreunde as an oboe da caccia and ascribed to Martin Lempp. Maple body, horn ferrules and two brass keys. Keys mounted in wooden rings and key springs attached to body. Wooden rings decorated with central incised line, both rounded in profile. Very dark stain. Double hole for T3. Swallowtail touchpiece for C key with diamond-shaped notch in ‘v’ of swallowtail, identical to Lempp oboe in Linz (Mu 120, see number 71).
Stamp:
LH: [Hapsburg eagle]/LEMP/WIENN [in scroll]
Lempp, Martin

74. Oboe, MIM, Brussels, 963
Boxwood body, integral boxwood ferrules and two brass keys. Keys mounted in wooden rings and all key springs attached to keys. Upper ring square in profile and lower ring rounded, both undecorated. Double hole for T3. Two left hand sections. Large round baluster with pronounced turned rings and recesses. Angular ferrule at top of right hand section. Swallowtail touchpiece for C key with inverted v shape in centre of swallowtail. Small eight-petalled flower stamped on the dorsal side of each section. Total sounding length (with longest left hand section) = 565.8mm.
Stamp:
LH: [Hapsburg eagle]/LEMPP/WIENN/1 or 2
RH: [Hapsburg eagle]/LEMPP/WIENN
Bell: [Hapsburg eagle]/LEMPP/WIENN

Lotz

75. Oboe (fragment), Ferdinandeum Innsbruck, M/I 217
Upper section only. Boxwood with horn ferrule at reed well. No keys. Double hole for T3. Onion-shaped baluster with pronounced decorative turned rings and recesses. Has been joined to the lower sections of an instrument stamped CINONFI (?). Stamp very faint. The number ‘2’ in the stamp suggests original presence of additional upper joints of varying lengths to accommodate different pitches.
Stamp: 2//THEODOR/LOTZ/2

76. Oboe (fragment), Museo Civico, Modena, 101
Upper section only. Boxwood with ivory ferrule at reed well. No keys. Double hole for T3. Angular shaped baluster with simple decorative turned rings and no recesses. Has been joined to the lower sections of an instrument stamped B·KOHLERT/WIEN/[flower]. Stamp very faint. The number ‘2’ in the stamp suggests original presence of additional upper joints of varying lengths to accommodate different pitches.
Stamp: 2//THEODOR/LOTZ/2

77. Cor anglais, Musikinstrumentenmuseum der Universität Leipzig, 1345
Curved form, body covered in black leather, ivory ferrules and two brass keys. All keys in brass saddles and all key springs attached to the body. Bell is maple, stained dark. Key for C has been altered by the addition of a long shank and touchpiece so as to be operated by L4 rather than R4. Modification has partly obscured stamp on right hand section. Double hole for T3. Cuts from bending process visible inside bore, as well as slight lumps under the leather on the dorsal side indicating the presence of screws holding the curve in place. Gilding in decorative encircling dots and stamps largely intact. Number on stamp is an Arabic numeral 1 rather than the Viennese arrow-shaped 1. Numbering on all sections suggests instrument was part of a pair or set. Ivory ferrule at bottom of bell. Total sounding length = 755.4mm.
Stamp:
LH: [Hapsburg eagle]/THEODOR/LOTZ/1
78. **Cor anglais, Kunsthistorisches Museum Vienna, SAM 324**
Curved form, body covered in black leather, horn ferrules and three brass keys. Third key (for L4) probably added later. All keys in brass saddles and all key springs attached to body. Bell is maple, stained dark. Texture and colour of leather changes above T3, which may be the result of the addition of the key for L4. Double hole for T3. X-ray image shows regular evenly spaced cuts along the length of the instrument, with curve held in place by shortened screws. No metal brace is visible on the X-ray. Embossed decorative encircling dots visible but gilding largely disappeared. Some gilding remaining on right hand section stamp. Gifted from the Thill Collection in Vienna, 1918.
Stamp:
LH: [Hapsburg eagle]/THEODOR/LOTZ/K.K.HOF/INSTR·MACHER/IN WIEN
RH: [Hapsburg eagle]/THEODOR/LOTZ/K.K.HOF/INSTR·MACHER/IN WIEN
Bell: [Hapsburg eagle]/THEODOR/LOTZ/K.K.HOF/INSTR·MACHER/IN WIEN

79. **Cor anglais (fr.), Museo Civico, Modena, 102 – 1981**
Right hand and bell sections only. Curved form, covered in black leather, horn ferrules and three brass keys. Originally two keys – F key (for R3 is a later addition). All keys in brass saddles and all key springs are attached to keys. Embossed decorative encircling dots visible but gilding largely disappeared. Some gilding remaining on bell stamp. Key-heads have been rounded at a later date. Generally poor condition.
Stamp:
RH: [Hapsburg eagle]/THEODOR/LOTZ/K.K.HOF/INSTR·MACHER/IN WIEN
Bell: [Hapsburg eagle]/THEODOR/LOTZ/K.K.HOF/INSTR·MACHER/IN WIEN

**Rockobaur**

80. **Oboe, Landesmuseum Linz, Mu 45**
Boxwood, integral boxwood ferrules and two brass keys. Keys in wooden rings and both key springs are attached to body. Swallowtail touchpiece for C key. Double hole for T3. Rounded baluster with decorative turning. Decorative turning above tenon on right hand section. The number ‘1’ in the left hand section stamp suggests original presence of multiple left hand sections of differing lengths to accommodate different pitches. From Stift Kremsmünster.
Stamp:
LH: 1/ROCKO./BAUR/[lion rampant]
RH: ROCKO.BAUR/WIEN
Bell: ROCKO.BAUR//AA1 (last part of stamp is significantly larger than others)

81. **Cor anglais, Germanisches Nationalmuseum Nuremberg, MIR 394**
Curved form, body covered in brown leather, horn ferrules and two brass keys. All keys in wooden blocks and all key springs attached to body. Bell is maple. Swallowtail touchpiece for C key. Hole roughly bored through the horn of right hand section tenon – possible later attempt at the addition of a brass loop for support? Large X carved into horn ferrule on reed well. X-ray image shows evenly spaced
cuts along the length of the instrument but no metal brace or pins. Total sounding length = 746.4mm.

Stamp:
LH: ROCKO./BAUR
RH: ROCKO./BAUR/WIEN
Bell: ROCKO./BAUR
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