

STUDYING WIND ORCHESTRATION



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A Guide to Orchestration Master Class 102: The Wind Section

A macProVideo/AskVideo Course by Thomas Goss

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A MESSAGE FROM ORCHESTRATION TRAINER THOMAS GOSS

HELLO!

I hope that the Orchestration 102 Course has deepened your understanding of the Wind Section. As a supplement to your training, here's a guide that will take you further along the road to mastery of woodwind orchestration.

This guide starts with a chapter on score-reading for the wind section, outlining a fundamental approach organising visual details, plus a few tips on what to look for on the page as you go.

The following chapter lists a series of chamber and orchestral works including winds, progressively arranged so your visual skills and comprehension can grow with each successive work. These works include brief descriptions to help you put them into context with one another, charting the evolution of wind instruments into a distinct section of the orchestra, then a dominant voice in modern orchestration.

A catalogue of wind techniques follows, with charts and diagrams of ranges, registers, fingerings, transposition, trills/tremolos, and special techniques. I've also included a dictionary of the many woodwind-specific musical terms that you'll be reading in these scores, and a glossary of typical markings. The guide finishes with a brief course on reading B♭ transposition, an essential component in any experienced orchestrator's toolbox.

More training awaits you in the Orchestration 103: Wind Instruments Course, to be released shortly. In the meantime, work hard at your craft, and I welcome any feedback you might have to share about your experience with this course.

Orchestrationally Yours,
Thomas Goss
November 2015 • Wellington, New Zealand



I. SCORE-READING THE WIND SECTION

for Orchestration Master Class 102:
The Wind Section

A macProVideo/AskVideo Course by Thomas Goss

INTRODUCTION: SCORE-READING HABITS

In the previous course of the Orchestration Training Series, I gave you some foundational assignments reading the scores of string quartets, string orchestras, and full orchestras. If you've used your time wisely, then you've read through all or most of those scores, and have developed some habits that will be useful to you in reading the wind section.

A very useful habit you should have developed involves grasping the broader picture while you focus on specific details. You may find yourself jumping back and forth between scanning up and down a bar while you read a featured part in a score. Or you may be using your peripheral vision, tracking the parts around the centre of your vision.

Another good habit is quickly looking ahead. After all, one may grasp the essence of a few bars quickly, and forcing the eyes to remain glued to information which you've already grasped is tiresome. Conductors constantly look ahead in a score, scanning for upcoming cue, tempo changes, and tricky passages in which the orchestra must be carefully led. This reading on the fly gives a film score conductor the ability to lead a cuing session through a new score with minimum preparation.

Debussy: Nocturnes, 1. Nuages

59

Hautb. I II

Cl. I II (Sib)

Bons III

Vns I

Vns II

A. Solo

Celles

MAIN FOCUS ← LOOKING AHEAD →

PERIPHERAL VISION

Ravel: Pavane pour une infante defunte, bars 28-29**FUNCTIONS:****Melody****Melody****Countermelody
Bass Line****Countermelody
Harmony****Accomp. Figure****Rhythm/Harmony****Rhythm/Harmony
Bass Line****Bass Line**

The musical score consists of two systems of music. The first system (bars 28) includes parts for Flute (F#), Clarinet (C), Bassoon (Bn.), and Trombones I & II. The second system (bar 29) includes parts for Violas (Vla.), Cellos (Cel.), Double Bass (D.B.), and Trombones I & II. The vocal line "au Mouv!" is present in both systems. Dynamics such as *pianissimo* (pp) and *pizzicato* (pizz.) are marked throughout.

SCORING:**octave melody
doubling in
flutes and
clarinets****countermelody
sustained tone
doubling pizz.****doubling at the
octave
internal pedal****oscillating pattern****alternating pattern
between strummed
pizzicato cellos
and violas****unison bass line
lower strings pizz.****INTRODUCTION (cont.)**

Two other habits are interrelated. The first has to do with quickly establishing the function of parts on a page. In traditional concert music, certain functions have specific looks when notated. Melodies are linear, are often given dynamic prominence, and are sometimes marked “solo.” Bass lines are most often given to bass instruments; even when other instruments take them over, the bass function is still easily identified as underpinning the harmony and pacing the momentum of an episode. Harmonies are often scored quite simply, in longer note values sitting behind or under the melody. Or harmonies may combine with the pulse of the music and be expressed as an element of rhythm. Once these functions are instinctively absorbed in score-reading, more complex modern works may be score-read with greater facility, in which these roles aren’t so clear-cut.

This habit directly relates to its partner: the ability to observe the interaction of parts on a page. The first and most obvious context is doubling, in which two separate instruments play the same part. Sometimes doubling achieves a new colour combination, other times it simply strengthens a part. Then there are dove-tailing thematic lines, imitations, oppositions, and other parts that play off of one another rather than alongside one another. Some parts exist simply to interact texturally, and their relationships present some of the most fascinating possibilities of all.

The development of all these habits prepares your score-reading for adding the wind section to its vertical awareness. You’ll more easily see which parts double, which lead or support, and what will be the natural outcome of such relationships. This in turn will help you to score with more confidence and stronger instincts. The stage will be set for brass and percussion in further courses.

SCORE-READING WIND ENSEMBLES

The best way to develop comprehension of wind orchestration is to study how wind instruments relate to one another, starting with small ensembles and then gradually increasing the size. The smallest ensemble is a duo: but trios are the place to start, as their scope allows for the three fundamental elements of melody, support, and bass. Trios were composed in many different lineups. The most common element is bassoon, as the traditional bass instrument of the wind group. From there, a lead instrument and support instrument are added. You'll find that clarinets feature strongly as support instruments by the height of the Classical Era, for their ability not only to blend seamlessly but also speak as a second voice. This leaves either flute or oboe as lead instrument. The oboe served as the natural leader for about a century, but slowly the flute gained equal status. The choice of either naturally shapes the character and timbral possibilities of a score.

Of course, a composer might want both lead instruments, which leads to quartet scoring, or even more common quintet scoring with the further addition of the horn. Both ensembles possess different qualities of texture and problems of balance. Note as you score-read how each instrument assumes different roles, and in what ways their best strengths arise. Any time an instrument takes the lead, it must rely upon a timbral combination of the remaining instruments. A horn solo can never be too loud, lest its weaker wind instrument support disappear under its huge projection. A bassoon solo must be underpinned by chalumeau clarinet and horn, and possibly a coarser oboe in its lower range. These concerns of balance and texture arise far more often in wind ensembles than for string or brass groups. In this way, a wind quartet or quintet can serve as model for greater efforts.

Interestingly, when ensemble numbers climb to sextets or octets in the Classical period, wind instruments tend to be doubled in simple pairs. Paired oboes, horns, and bassoons constitute a common sextet, while adding two clarinets increases to an octet. These represent minimum numbers for wind band scoring - the main difference being that each instrument type has its own section as opposed a collection of individual voices. The music therefore tends to have a thicker, more integrated sound. If you skip over the opportunity to read these scores, you're shooting yourself in the foot, because these ensembles are essentially the extracted wind sections of standard symphonic lineups. Reading how composers solved problems and built textures for sextets and octets prepares you for the eventual next step: adding those elements above the string section in a full orchestral score.

You'll note that when I do take this step in the score-reading list below, I spend a great deal of time with 18th-century scores, from the Bach family to early Beethoven. These scores reveal function like no other examples, and chart the growth of wind scoring alongside the development of the symphonic form. That gives you a baseline as a score-reader, upon which you can develop the chops you need to get you through the larger and more complex works at the end of the assignment list. Hopefully these works will spark greater understanding of texture, balance, and function as they apply to wind scoring, and impel you to broaden your own range of experience with other great works in the orchestral repertoire. Thousands of masterpieces are now available for listening and score-reading off the internet, and the fact that they cost nothing doesn't lessen their incredible value as a resource for self-development. So listen long and listen smart, with a huge appetite and a keen ear for musical meaning and personality. And don't be afraid to listen to one work many times, to get all the information you need.

FURTHER RESOURCES

For more training, tips, and perspectives on orchestration and score-reading, please subscribe to my website, [Orchestration Online](#). You'll find resources listing orchestration manuals, books on music theory and film scoring, and useful websites for developing your skills. There are also detailed blog posts and videos about orchestral instruments, along with the philosophy and craft of scoring. You may also wish to read my book, which serves as a complement to this training: [100 Orchestration Tips](#). In this e-book, you'll find much advice from the perspective of a working composer, with insights in the process of orchestration, the viewpoint of the performers, and the practical consequences of many decisions you may have to make while scoring.

On the [Orchestration Online YouTube Channel](#), I've created a playlist for each of the selected works below, so you can see which videos I recommend for listening along with your assignments. I generally favour live performances, in which you may also observe string technique in action, and see how the players realise what's in your copy of the score. My channel also contains an additional [Score-Reading Course](#), which may prove a useful supplement to the training in this guide.

Please follow on [Twitter](#) or [Google+](#), or join the thousands of composers and orchestrators who share their music and perspectives on the [Orchestration Online Facebook group](#). I hope to see you there!

Thomas Goss

II. SCORES TO STUDY

1. LIST OF SCORES TO STUDY

This supplement is intended to put the information presented in the Orchestration 102 & 103 Training Courses to work for the viewer. The assigned scores below are targeted at a notation-literate musician with beginning to intermediate score-reading skills.

The list is divided into three categories: Wind Ensembles; Chamber Orchestra works; and Full Orchestra works. Students may first develop their score-reading by observing how wind instruments relate to each other in texture and function, then apply these skills to larger and larger ensembles.

WORKS FOR WIND ENSEMBLES

1. [Divertimentos K. 439b nos. 3 & 4](#)

Mozart, Wolfgang Amadeus

2. [Woodwind Trio Op. 32](#)

Kummer, Kaspar

3. [Wind Quartet Op. 93](#)

Goepfart, Karl

4. [Wind Quartet W230](#)

Villa-Lobos, Heitor

5. [Wind Quintet Op. 91 no. 3](#)

Reicha, Anton

6. [Pastorale for Wind Quintet](#)

Beach, Amy

7. [Wind Quintet Op. 43](#)

Nielsen, Carl

8. [Divertimenti for Wind Sextet KV. 213 etc.](#)

Mozart, Wolfgang Amadeus

9. [Wind Sextet Op. 71](#)

Beethoven, Ludwig van

10. [Mladi](#)

Janáček, Leoš

11. [Wind Octet Op. 103](#)

Beethoven, Ludwig van

12. [Wind Serenade in Cm K. 388](#)

Mozart, Wolfgang Amadeus

13. [Wind Serenade in B♭ K. 361](#)

Mozart, Wolfgang Amadeus

14. [Wind Serenade Op. 44](#)

Dvorák, Antonín

15. [Wind Serenade in E♭ Op. 7](#)

Strauss, Richard

WORKS FOR CHAMBER ORCHESTRA

16. [Brandenburg Concerto no. 1 BWV 1046](#)

Bach, Johann Sebastian

17. [Water Music](#)

Händel, Georg Friedrich

18. [Symphony no. 7 "Le Midi"](#)

Haydn, Franz Joseph

19. [Symphony In B♭ Op. 18 no. 2](#)

Bach, Johann Christian

20. [Symphony no. 24](#)

Haydn, Franz Joseph

21. [Symphony no. 25 K. 183 "Little G minor"](#)

Mozart, Wolfgang Amadeus

22. [Symphony no. 35 K. 338 "Haffner"](#)

Mozart, Wolfgang Amadeus

23. [Symphony no. 83 "La Poule"](#)

Haydn, Franz Joseph

24. [Symphony no. 39 K. 543](#)

Mozart, Wolfgang Amadeus

25. [Symphony no. 2 Op. 36](#)

Beethoven, Ludwig van

WORKS FOR FULL ORCHESTRA

26. [Der Freischütz Overture](#)

Weber, Carl Maria von

27. [Symphonie Fantastique](#)

Berlioz, Hector

28. [Les Préludes](#)

Liszt, Franz

29. [Tannhäuser Overture](#)

Wagner, Richard

30. [Suite no. 1](#)

Tchaikovsky, Piotr Illych

31. [Prélude à l'après le midi d'un faune](#)

Debussy, Claude

32. [Ma mère L'oye](#)

Ravel, Maurice

33. [Le Sacre du Printemps](#)

Stravinsky, Igor

34. [Five Pieces for Orchestra](#)

Schoenberg, Arnold

35. [The Planets](#)

Holst, Gustav

2. DESCRIPTIONS OF WORKS

The following collection of works is by no means a comprehensive overview of woodwind literature, and is not intended to be. Rather, it's all about helping you develop your score-reading; learning where to look, and how to process the visual information you're receiving.

WORKS FOR WIND ENSEMBLES

1. [Divertimenti K. 439b \(K. anh 229\) nos. 3 & 4](#)

Mozart, Wolfgang Amadeus

2. [Woodwind Trio Op. 32](#)

Kummer, Kaspar

The Six Divertimenti of W.A. Mozart, K. 439b (K. anhang 229) are all worth studying for score-readers. I've selected the middle two for this list, though the IMSLP link above will open the complete score for all the divertimenti (you'll have to scroll down to the correct pages). This is a great jumping-off point if you've just taken the Reading B♭ Transposition course. The bassoon part is scored in concert pitch, while the clarinet parts transpose to B♭. Since both divertimenti are almost all in that key, it means that the clarinet parts are scored mostly reading in C. So you can easily use the bassoon part for reference, while using the simple C-scoring to judge which step of the B♭ scale the clarinets are playing. These pieces were originally scored for basset horn trio, and the video playlist includes an example of Divertimento no. 3.

Kaspar Kummer's trio is also a worthy piece for study. Kummer was a professional flutist, so his wind writing bears the quality of confidence. As with all trios, the middle voice should be studied for how it shares duties with its partners and fills in the middle.

3. [Wind Quartet Op. 93](#)

Goepfart, Karl

4. [Wind Quartet W230](#)

Villa-Lobos, Heitor

The wind quartet is actually a rarer form than the quintet. With the stabilising voice of the horn absent, the ensemble has a lighter, less emphatic sound. The parts are often functionally the same as a string quartet - the flute and oboe imitating violins, and the clarinet and bassoon like viola and cello. But the oboe is so exquisite a sound, and the clarinet so flexible and wide-ranging, that both instruments tend to be scored with wider freedom and greater independence than their counterparts, violin II and viola.

In fact, this point is perhaps the strongest contrast between the two works on this list. The first, by the Post-Romantic composer Karl Goepfart, is excellent wind writing - yet it mostly restricts all instruments to set roles and harmonic voicing more reminiscent of a string quartet. The oboe has more independence than a typical second violin part, but the clarinet rarely gets an entrance or plays much higher than its chalumeau register. This is very much like a traditional viola part. Stylistically, this piece is quite traditional as well; a three-movement work with a sonata allegro, scherzo, and fugue, albeit missing an adagio movement.

In the Villa-Lobos Wind Quartet, each instrument's unique qualities are explored and contrasted. The bassoon scoring is particularly excellent in the second movement, using its entire expressive range with intelligence and creative generosity. The clarinet part also shakes off its middle-voice role, especially in the quirky 5/4 third movement, which abounds with great solos in all its registers. Villa-Lobos' use of intimate tone colour in chamber scoring is superb. His harmonies splash and vibrate, rather than simply working because they're properly voiced.

5. [Wind Quintet Op. 91 no. 3](#)

Reicha, Anton

6. [Pastorale for Wind Quintet](#)

Beach, Amy

7. [Wind Quintet Op. 43](#)

Nielsen, Carl

The wind quintet is the standard for small wind ensembles. I've included three contrasting examples - but you should score-read many more on your own, and perhaps compose in the form. The Reicha quintet is simply one of very many that he composed that essentially define the whole genre. His treatment of the parts is far more independent and daring than Goepfart's. Any mastery of the form by later composers owes a debt to Reicha's efforts.

Amy Beach's Pastorale is an excellent study in tonal coloration and wind part-writing. Note the sheer poetry of some harmonies, how the resonance of certain combinations ring with emotional meaning. This is a superbly crafted piece by a master composer. Carl Nielsen's Wind Quintet is one of his most well-known works. It has a lovely pastoral quality and craft equal if not surpassing that of the quintets above. A book could be written about it, but the orchestration student should focus on the wonderfully natural scoring. Nielsen scores to each instrument's strengths, with solos and duos accompanied with simple yet devastatingly effective settings. His clarinet writing is some of the best, and his bassoon parts walk that engaging line between support and direct involvement so necessary in chamber writing of bass lines. Especially note the relationship between the horn and the lower winds: there are lessons there that can be easily applied to the formation of unique orchestral textures. There are also character studies of each instrument that are almost operatic in scope.

8. [Divertimenti for Wind Sextet KV. 213 etc.](#)
Mozart, Wolfgang Amadeus

9. [Wind Sextet Op. 71](#)
Beethoven, Ludwig van

10. [Mladi](#)
Janáček, Leoš

Wind sextets aren't as fixed in instrumentation as quintets. The classical era sextet might often feature three pairs each of oboes, horns, and bassoons. But two clarinets might be substituted for the oboes by later composers. Whichever configuration, the form is a microcosm for that period's symphonic ensemble, which was often the sextet (with oboes) plus timpani and strings. It's also the smallest possible group in which to get the nicely integrated feel of a wind band, with the doubled horns adding a huge boost of power and solidity to harmonies and rhythms. The Mozart Divertimenti for Wind Sextet are all worth studying, and a great preparation for the chamber orchestra score-reading assignments that follow. They're especially good at showing how doubled oboes and horns can work separately and together in simple, direct scoring. Also, quite importantly, Mozart shows just how independent a bassoon part can be, not simply restricted to emphasising the root of a harmony. The first bassoon often functions as a most effective middle voice. The Beethoven sextet is much of the same mould, though the first clarinet and bassoon parts are quite a bit more soloistic.

Janáček's "Mladi" translates as "Youth," and indeed it is a staple for ensembles of younger wind players. It has the lineup of the traditional wind quintet, plus bass clarinet. This has the effect of liberating the horn, as well as allowing winds to play in five-part harmony without it. On top of this, a whole new level of energy becomes possible for the bass line. Sheer genius on every page.

11. [Wind Octet Op. 103](#)
Beethoven, Ludwig van

12. [Wind Serenade in Cm K. 388](#)
Mozart, Wolfgang Amadeus

13. [Wind Serenade in B♭ K. 361](#)
Mozart, Wolfgang Amadeus

The wind octet is essentially an extension of the sextet, at least in the example by Beethoven on this list. Paired oboes, clarinets, horns, and bassoons work together in very similar ways, but naturally, texture and scope of the work flirts with the symphonic. Beethoven's oboe scoring is particularly interesting, as well as his textural treatment of the upper winds in general, and their on-and-off alliances with the bassoons.

The above octet is a great preparation for the large-scale scoring of the Mozart Wind Serenades. The C minor Serenade has the same octet scoring, but Mozart's hand is much freer and sense of scope much larger than Beethoven's. His superior experience shows, as he composed in this form to a far greater extent than his successor. Note how the key wants to sit in the much sunnier climate of E♭ rather than stay to chilly C minor. But the real plum of wind serenades is the Serenade K. 361 "Gran Partita." Mozart inflates the octet even further by adding a pair of bassoon and a double bass. At this point it's essentially a double quartet of winds, plus horns, with bass to free up the functionality of the bassoons. Here you can see the usefulness of the bassoon in this type of scoring: they essentially function like violas, being the perfect middle voice in both range and timbre to mix without too much distraction, and add a unique thematic colour at times. The result of this huge array of potential combinations was that Mozart's imagination and invention ran wild, leaving one of his greatest works of all time for us to marvel over and learn from.

14. [Wind Serenade Op. 44](#)
Dvorák, Antonín

15. [Wind Serenade in E♭ Op. 7](#)
Strauss, Richard

The wind serenade form survived well into the Late Romantic period. The two later examples I've included above show how composers supplied repertoire to ensembles that fit very well alongside older models, yet allowed them to develop their own musical identities.

There's a lot to say about the perfection of form in these works, but let's stay focused on the orchestration. Dvorák's Serenade takes the instrumentation of the octet - doubled oboes, clarinets, horns, and bassoons - and adds a third horn, a cello, a double bass, and an optional contrabassoon. This strategy gives the lower part of the sound picture a wonderful smoothness that doesn't distract, and once again frees up the bassoons from bass line duties. The third horn gives harmonies more solidity. Notice how Dvorák scores his horns as if they were natural. He probably intends, as does Strauss, that the hornists use valves to open up crook positions so that the tuning will be very secure in one centralised key, then occasionally change valves for the offhand note out of the harmonic series for that position.

Dvorák wrote his serenade at age 37. Richard Strauss composed his serenade at age 17. The orchestration is nearly symphonic in scope: all the standard winds doubled (including flute), plus two pairs of horns in separate keys, and a choice of contrabassoon or tuba as the low bass instrument. The balance is perfection, and about the only defect is how very short the piece is. The horn writing is a lesson in itself in great brass scoring, but what's even better is Strauss's uncanny natural feeling for what sounds right for his winds. Look for alliances, oppositions, and epiphanies.

WORKS FOR CHAMBER ORCHESTRA

16. [Brandenburg Concerto no. 1 BWV 1046](#)

Bach, Johann Sebastian

17. [Water Music](#)

Händel, Georg Friedrich

I've selected chamber orchestra works that show the evolution of wind instrument style and function throughout the 18th century. The following works might have been premiered by orchestras of only one or two dozen strings, and still sound excellent today with such numbers.

The two works above show the bridge between wind sextets and orchestral works. Bach's Brandenburg Concerto no. 1 puts a sextet of 2 horns, three oboes, and a bassoon alongside strings plus "violino piccolo," a small violin transposing in A. The string and wind parts sometimes double each other, sometimes interweave, and often contrast with total independence. Though this concerto was completely neglected after it was written, it reveals Bach's vision of a complex, interactive orchestra.

The above work was probably intended for a small collegium-size orchestra. Not so Händel's Water Music, written for the pleasure of King George I. A single staff of oboe might be intended for a couple dozen players in unison. This is because it was intended to be performed on a royal barge, not a concert hall, and the music would have to carry in outdoor conditions. The division of the work into suites may in fact be arbitrary - the music feels like a series of loosely connected movements that might be played in any convenient order. It's easy to get lost in such conditions, so focus on the functions and contrasts of the parts. You'll probably notice that certain instruments are intended to dominate through sheer raucousness, like the horns; while others integrate into the orchestral fabric at times, or contrast more elegantly.

18. [Symphony no. 7 "Le Midi"](#)

Haydn, Franz Joseph

19. [Symphony In B♭ Op. 18 no. 2](#)

Bach, Johann Christian

After the end of the Baroque Era, music became more structured and formal. With the rise of professional musicians and published music, the orchestra evolved into a set group of players. Scores now featured sections in dedicated positions: strings at the base, winds at the top, and brass and percussion in the middle.

Haydn's 7th Symphony may be an early number out of the 104, but the use of wind in thematic contrast, opposition, and support are quite mature for its time. From the first bar, winds and brass function with independence and verve. Look for things that aren't obvious, like the simplicity of the second movement's background oboes, and how they easily fill in the harmony. The flutes come late to the game; but when they do arrive, their use is completely charming and apt.

J.C. Bach was an early model for Mozart's childhood composition efforts. Years of work and training in Italy left this youngest son of J.S. Bach with a completely sunny, Mediterranean style that was highly influential in the very early classical period. It's interesting to note the difference between this symphony and the Haydn above. The use of winds as coloristic support and texture is much more confident for Bach at this stage, though his sense of invention bears far less intrigue than Haydn. The second movement is really what's interesting for the score-reader of wind orchestration: the resonance and balance of his wind harmonies is superb, and glows with that open vastness that Mozart was to perfect in his own compositions a decade or so later. Listening to both of these works makes you realise that the quality of wind playing was superb, even at the dawn of the Classical Period.

20. [Symphony no. 24](#)

Haydn, Franz Joseph

21. [Symphony no. 25 K. 183 "Little G minor"](#)

Mozart, Wolfgang Amadeus

Haydn's 24th Symphony was written only three years after the 7th as he settled into his job of court composer. It's in many ways a much less ambitious work, and yet it's instructive of several key approaches to Classical wind scoring. Only doubled oboes and horns accompany the string group in all movements except the second. And yet those oboes are more than capable of being heard, even in loud harmonised statements with the horns, like the opening of the first movement. Note the glowing colour that the oboes add to background harmonies, by themselves or in combination with the horns. The second movement flute cameo feels like an excerpt of a concerto rather than a symphony. You can hear that Haydn still considered the flute more of a visitor at this point than a regular member. It's worth remembering this was still the Age of Frederick the Great, that most aristocratic flutist.

Written when Mozart had reached (for him) the more mature age of 17, the Symphony no. 25, K 183, shows that he'd shed his early devotion to J.C. Bach and was now modelling his efforts on Haydn, especially the current trend of "Sturm und Drang" ("Storm and Stress"). The scoring layout is deceptive: oboes and horns in the outer movements, but adding bassoons elsewhere. Actually, bassoons also appear in the first and fourth movements, but playing unison with the cellos and basses in tutti passages. Note how in these movements Mozart follows the approach of Haydn's 24th Symphony, but even more ingeniously, the oboes' role more integrated and contrapuntal. The bassoons' cello-doubling is amply compensated in the middle movements, in featured duos in the Andante and a lovely wind-band episode in the Menuetto's trio section that's perfection in balanced, intelligent scoring.

22. [Symphony no. 35 K. 338 "Haffner"](#)
Mozart, Wolfgang Amadeus

23. [Symphony no. 83 "La Poule"](#)
Haydn, Franz Joseph

Mozart's "Haffner" Symphony is a work from his early days as a freelance composer in Vienna. It's really more of a string-player's symphony than a wind-player's. And yet it has some vital lessons and great orchestration. The use of winds for coloration is far superior to J.C. Bach's in the previous decade, and the contrast of voices is much more natural and subtle. It's also one of the earliest uses of clarinets in a symphonic work. This may have to do with the piece's origins as a sketch for a serenade. All the same, Mozart gives them duties that either track the oboes from below or the bassoons from above, and they're absent from the middle movements. It might very well be that he was unsure how to score them yet in an orchestral setting, or that he felt he couldn't depend on the available players to do more.

Around the same time, both Haydn and the Classical style that he helped to invent were reaching their full maturity. This is reflected in the scoring. The flute is no longer an honoured guest, but a full member of the orchestra expected to pull its weight in supporting first violin melodies, and injecting bits of colour or theme. Nevertheless, the oboes are still more the lead instrument of the wind section, with more exposed, leading melodic content. The second movement's very occasional comments from the winds should make you aware of the enormous amount of counting rests that wind players do. You'll see this increase as roles for instruments become ever more specialised. Like the Haffner Symphony, the strings carry the symphony even more than usual, and yet the roles of the winds in support and contrast are essential in creating the feel of a true symphony, in which many voices unite in common cause.

24. [Symphony no. 39 K. 543](#)
Mozart, Wolfgang Amadeus

25. [Symphony no. 2 Op. 36](#)
Beethoven, Ludwig van

From early experiments like the Haffner Symphony, Mozart eventually did more to make the clarinet a regular member than any composer before him. His enthusiasm for the instrument was huge, as many of his letters testify, not to mention many of his finest works. One of these is his Symphony no. 39, K. 543, which merits a place beside the better-known symphonies 40 and 41. Its striking feature is the complete substitution of clarinets for oboes. The result is a cleaner, more coherent sound, without overly pronounced supporting harmonies, as well as the moderation of combined timbres in combinations with the remaining bassoons, flutes, and horns. Mozart might easily have written many more works with this unique combination of instruments. His hand is much more confident in scoring clarinets here, and established a model for its symphonic role that future composers followed.

By the time Beethoven wrote his second (but in terms of stylistic individuality his first) symphony, the winds were considered equal partners in the form. That's established firmly from the first bar, in which the winds make the first thematic statement rather than the strings. What's more, the flutes are far more integrated into the section than ever before, very naturally taking responsibility where they're needed, and freed from default first violin support. Beethoven's use of bassoons is also liberating, with far more solo work, and even contrasting bass lines against the lower strings. This is a great introduction to Beethoven's woodwind scoring style, as certain trademark gestures make their debut here, like his village-tavern wind band breaks in the scherzo. It's worth mentioning as well that his treatment of oboes and clarinets is masterful and mature, the equal of Haydn and Mozart.

WORKS FOR FULL ORCHESTRA

26. [Der Freischütz Overture](#)
Weber, Carl Maria von

27. [Symphonie Fantastique](#)
Berlioz, Hector

The remainder of works on this list are the tiniest of selections from a repertoire that spans vast ranges of style, technique, and innovation. You may even consider each composer's piece as an introduction to their many works that await your attention.

Weber was perhaps the first great Romantic orchestrator. Many of those who followed, such as Berlioz and Wagner, admitted their debt to his example. The opera *Der Freischütz* was his big success, and exhibits a groundbreaking approach to texture and function. His handling of the winds is superb throughout, with tiny coloristic support lending radiance to string passages, lush solo passages with free lyricism, and muscular tutti passages that are far better balanced than late classical equivalents. Weber is most generous to his clarinets. He also wrote a clarinet concerto or two.

A dozen or so years after *Freischütz*, a young Berlioz released his *Symphonie Fantastique* upon the world. Orchestration has never been the same since. Every passage rings with brilliance, especially in the use of the wind section. The dramatic integration of the winds with the strings is so effortlessly interdependent that it became a model for many orchestrators of ballet and opera to follow. Vestiges can even be heard in today's film scores. Listen for Berlioz's delicacy in the use of flutes, his confident treatment of the clarinet as a soloist, his poetic oboe and English horn scoring, and his intriguing use of nicely exposed bassoon lines. Also look at how winds work together within textures - you can clearly see Weber's approach being built on, tinkered with, then finally surpassed. This is one of the greatest scores of all time.

28. [Les Préludes](#)

Liszt, Franz

29. [Tannhäuser Overture](#)

Wagner, Richard

30. [Suite no. 1](#)

Tchaikovsky, Piotr Illych

After Symphonie Fantastique, composers built on Berlioz's example with the same ingenuity that he'd built on Weber. One outstanding example is Liszt's "Les préludes," the first work of a genre invented by its composer called the "Symphonic Poem." There are many beautifully conceived ideas here for winds. Note the interaction of horns and bassoon in the beginning, and the chillingly lovely chalumeau clarinet in the second episode.

The trend towards highly emotional, maximalist scoring reached an apotheosis in Wagner's operas. His Tannhäuser overture is one of his most balanced works, and a good general example of how winds could be fully integrated into towering structures, or featured in sombre chorales. There are some passages as light and airy as any by Mendelssohn. The paramount thing to watch for here is how the winds fill out and support the main action of the strings to balance against intense statements by the brass.

Tchaikovsky's orchestration is so good that players swear by it. He's particularly revered by wind players. Many works could have been chosen - I selected the first orchestral suite for its free use of winds, for everything from frequent thematic statements, to contrast, to being the glue that holds some movements together. His scoring of clarinet and bassoon are particularly excellent, and they often speak with a nationalist voice. The miniature march presages the Nutcracker, and for all its cuteseyness is a lovely bit of scoring. Nothing beats the opening bassoon solo, though.

31. [Prélude à l'après le midi d'un faune](#)

Debussy, Claude

32. [Ma mère L'oye](#)

Ravel, Maurice

Debussy's Prelude to the Afternoon of a Faun was as unique and game-changing as Symphonie Fantastique. Aside from its break from traditional concepts of form and harmonic resolutions, it was blessed with a wholly new outlook on orchestration: spacious, with nebulous boundaries; a sense of light intimacy covering far deeper meaning; and colours that glowed, tingled, and faded into the horizon. Debussy gives generously to his soloists, writing lines that allow for a great variety of personal decisions about inflection and shaping. He often writes colours inside colours, the external timbre borrowing resonance from a contrast or core element. This work is particularly brilliant as an example of great wind scoring, with lessons on every page if not every bar.

The only French composer who could match Debussy in his prime was Ravel. His Mother Goose Suite is an excellent study piece for several purposes. Firstly, it's a masterful transcription from a four-handed piano score that has no trace of pianism left in it. Secondly, it's a great example of the effectiveness of simple, direct scoring in achieving more impact than massive structures or internally complex functions. Finally, in respect to our studies, it's an object lesson in scoring for winds, particularly solo double reeds. A recording that doesn't individually mention the principal oboist, flutist, English hornist, and contrabassoonist by name has cruelly unjust liner notes. The contra solo in the Beauty and the Beast movement is particularly famous in its depiction of beastly growling. Amid all these superstar moments for the above instruments, watch for excellent little moments for clarinet and bassoon as well. They make all the difference at times.

33. [Le Sacre du Printemps](#)

Stravinsky, Igor

34. [Five Pieces for Orchestra](#)

Schoenberg, Arnold

35. [The Planets](#)

Holst, Gustav

The last three pieces represent universes of sound unto themselves. The Rite of Spring, of course, changed the course of music once again. But let's focus on its stellar wind scoring, in which certain featured instruments are chosen for their rough, "pagan" qualities: E♭ clarinet, alto flute, English horn, and of course the opening bassoon solo in its highest register. The first section is in fact mostly a wind score - and yet it has no feeling of wind band music whatsoever.

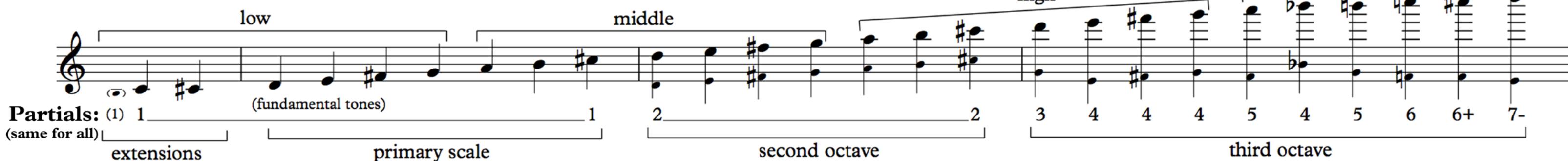
Schoenberg's Five Pieces for Orchestra were actually composed a few years before Stravinsky's Rite - but aside from superficial elements of free harmony, motorism, and unorthodox scoring, the two pieces bear very little resemblance. Some listeners may find it challenging, which is surprising considering how frequently passages from it have been mined by film composers looking for ideas that are jarring, unsettling, spooky, or perverse. Its wind section scoring is worth many hours of study.

I recommend waiting until after the above two works have been score-read many times before launching (or perhaps revisiting) Holst's Planets. If you do bide your time, you'll be rewarded with the revelation that Holst was heavily influenced by both works, perhaps Schoenberg more than Stravinsky. Then focus on the quiet, intimate moments for the genius of their discreet textures. The sprawling passages are often quite bluntly constructed, especially for winds.

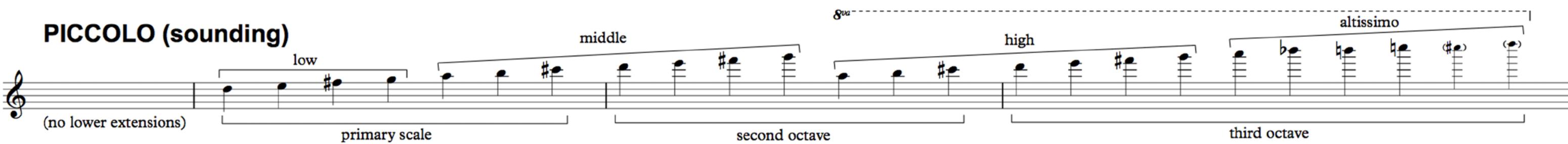
III. CATALOGUE OF WIND TECHNIQUES

1. WIND INSTRUMENT RANGES, REGISTERS, & OVERBLOWING

STANDARD FLUTE

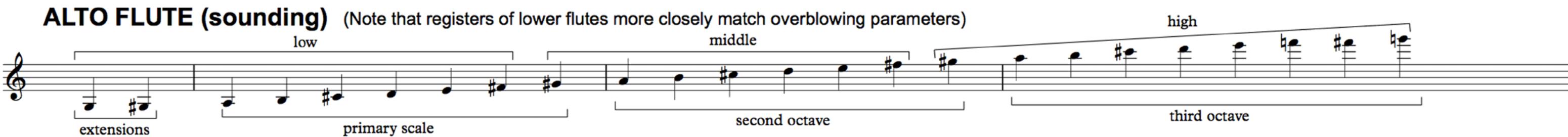


PICCOLO (sounding)

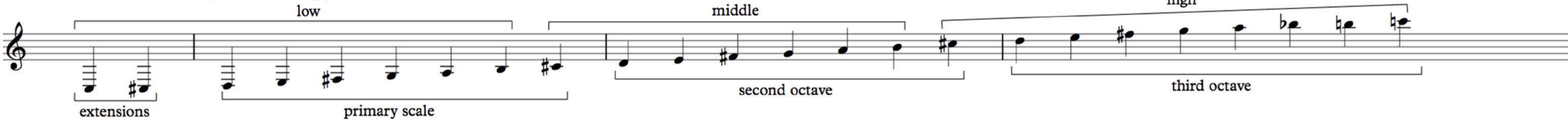


ALTO FLUTE (sounding)

(Note that registers of lower flutes more closely match overblowing parameters)



BASS FLUTE (sounding)



STANDARD OBOE

low (fundamental tones)

middle

high

third octave

altissimo

partials: 1 1 2 2 3 3 5 4+ 4+ 4+ 4+ 3+ 3+

extensions **primary scale** **second octave** **third octave**

OBOE D'AMORE (sounding)

low

middle

high

third octave

extensions **primary scale** **second octave** **third octave**

ENGLISH HORN (sounding)

low

middle

high

third octave

altissimo

extensions **primary scale** **second octave** **third octave**

BASS OBOE/HECKELPHONE (sounding)

heckelphone ext.

low

middle

high

second octave

third octave

GENERAL WRITTEN RANGES FOR HIGHER CLARINETS

This diagram illustrates the general written ranges for higher clarinets across four octaves. It includes:

- Chalumeau:** The lowest range, starting at the fundamental tone (partial 1) and extending through the primary scale and throat tones.
- Clarino:** The middle range, starting at the second octave (partial 3) and extending through the third octave.
- Altissimo:** The highest range, starting at the third octave (partial 5) and extending upwards.
- Partials:** Labeled 1, 3, 5, 7, 7, 7, 9, 9, indicating the harmonic series.
- Extensions:** Indicated by brackets under the first two octaves.

E♭ CLARINET (sounding)

This diagram shows the sounding range for an E♭ clarinet across four octaves. It includes:

- Chalumeau:** The lowest range, starting at the fundamental tone (partial 1) and extending through the primary scale and throat tones.
- Clarino:** The middle range, starting at the second octave (partial 3) and extending through the third octave.
- Altissimo:** The highest range, starting at the third octave (partial 5) and extending upwards.
- Partials:** Labeled 1, 3, 5, 7, 7, 7, 9, 9, indicating the harmonic series.
- Extensions:** Indicated by brackets under the first two octaves.

B♭ CLARINET (sounding)

This diagram shows the sounding range for a B♭ clarinet across four octaves. It includes:

- Chalumeau:** The lowest range, starting at the fundamental tone (partial 1) and extending through the primary scale and throat tones.
- Clarino:** The middle range, starting at the second octave (partial 3) and extending through the third octave.
- Altissimo:** The highest range, starting at the third octave (partial 5) and extending upwards.
- Partials:** Labeled 1, 3, 5, 7, 7, 7, 9, 9, indicating the harmonic series.
- Extensions:** Indicated by brackets under the first two octaves.

A CLARINET (sounding)

This diagram shows the sounding range for an A clarinet across four octaves. It includes:

- Chalumeau:** The lowest range, starting at the fundamental tone (partial 1) and extending through the primary scale and throat tones.
- Clarino:** The middle range, starting at the second octave (partial 3) and extending through the third octave.
- Altissimo:** The highest range, starting at the third octave (partial 5) and extending upwards.
- Partials:** Labeled 1, 3, 5, 7, 7, 7, 9, 9, indicating the harmonic series.
- Extensions:** Indicated by brackets under the first two octaves.

GENERAL WRITTEN RANGES FOR LOWER CLARINETS

This diagram illustrates the general written ranges for lower clarinets across four octaves. It includes labels for 'chalumeau' (lowest range), 'throat tones', 'clarino', and 'altissimo'. The primary scale is shown in the middle octave. Various ranges are labeled with specific note names and sharps or flats. The first octave is labeled 'partials: 1' and 'fundamental tones'. The second and third octaves are labeled with note numbers (1, 3, 5, 7) and corresponding note heads. The altissimo range extends beyond the third octave.

BASSET HORN (sounding)

This diagram shows the sounding range of a Basset Horn across four octaves. It follows a similar structure to the general clarinet ranges, with 'chalumeau', 'throat tones', 'clarino', and 'altissimo' sections. The primary scale is in the middle octave. The first octave is labeled 'extensions' and 'some models'. The second and third octaves are labeled with note numbers (1, 3, 5, 7) and note heads.

BASS CLARINET IN B♭ (sounding)

This diagram shows the sounding range of a Bass Clarinet in B♭ across four octaves. It includes 'chalumeau', 'throat tones', 'clarino', and 'altissimo' sections. The primary scale is in the middle octave. The first octave is labeled 'extensions' and 'some models'. The second and third octaves are labeled with note numbers (1, 3, 5, 7) and note heads.

CONTRABASS CLARINET IN EE♭ (sounding)

This diagram shows the sounding range of a Contrabass Clarinet in E♭ across four octaves. It includes 'chalumeau', 'throat tones', 'clarino', and 'altissimo' sections. The primary scale is in the middle octave. The first octave is labeled 'extensions'. The second octave is labeled with note numbers (1, 3, 5, 7) and note heads.

CONTRABASS CLARINET IN BB♭ (sounding)

This diagram shows the sounding range of a Contrabass Clarinet in B♭ across four octaves. It includes 'chalumeau', 'throat tones', 'clarino', and 'altissimo' sections. The primary scale is in the middle octave. The first octave is labeled 'extensions' and 'some models'. The second octave is labeled with note numbers (1, 3, 5, 7) and note heads. The altissimo range is labeled 'some players have a 4 octave+ range'.

STANDARD BASSOON

A musical staff in bass clef shows the range of a standard bassoon across four octaves. The notes are grouped into four main sections: 'low', 'middle', 'second octave', and 'high'. The 'low' section starts at the bottom of the staff and includes a bracket labeled 'partials: 1' and 'extensions'. The 'middle' section starts at the first note above the staff. The 'second octave' section starts at the second note above the staff. The 'high' section starts at the third note above the staff. The notes are primarily black, with some sharp and flat symbols indicating specific partials or fingerings.

CONTRABASSOON (sounding)

A musical staff in bass clef shows the range of a contrabassoon across four octaves. The notes are grouped into four main sections: 'low', 'middle', 'second octave', and 'high'. The 'low' section starts at the bottom of the staff and includes a bracket labeled '8vb' and 'extensions'. The 'middle' section starts at the first note above the staff. The 'second octave' section starts at the second note above the staff. The 'high' section starts at the third note above the staff. The notes are primarily black, with some sharp and flat symbols indicating specific partials or fingerings.

2. WIND INSTRUMENT FINGERING CHARTS

FLUTE BOEHM SYSTEM

FUNDAMENTAL OCTAVE AND SECOND OCTAVE OVERBLOWN TO THE 2nd PARTIAL

EXTENSION KEYS

This section displays the fundamental octave and second octave overblown to the 2nd partial on a Boehm system flute. The diagram shows the instrument's body with fingerings for various notes. Extension keys are highlighted in green.



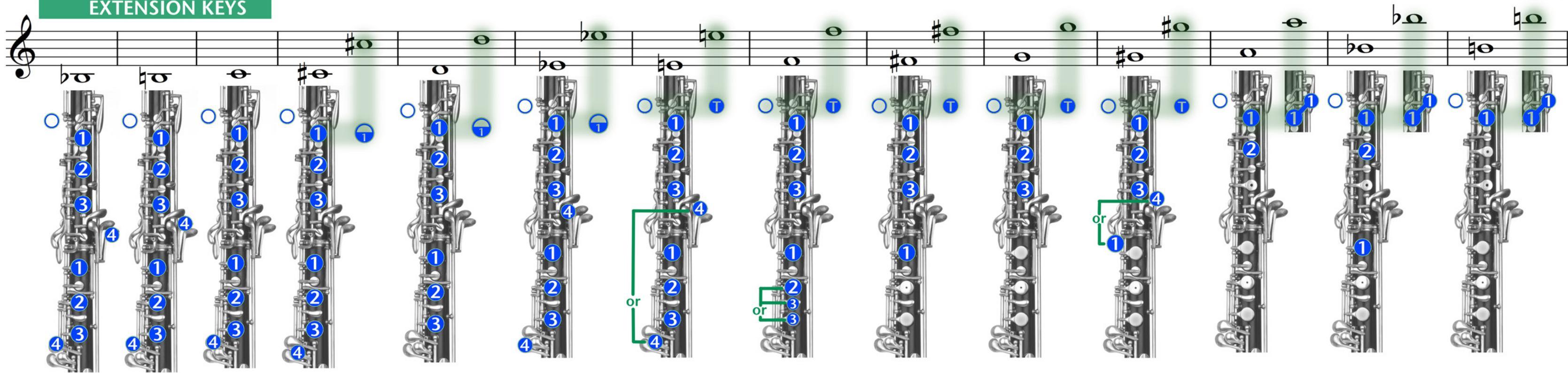
THIRD OCTAVE OVERBLOWN AT 3rd-7th PARTIALS

This section shows third octave overblown at 3rd-7th partials on a Boehm system flute. It includes a symbol key and fingerings for specific notes.

OBOE FRENCH CONSERVATOIRE SYSTEM

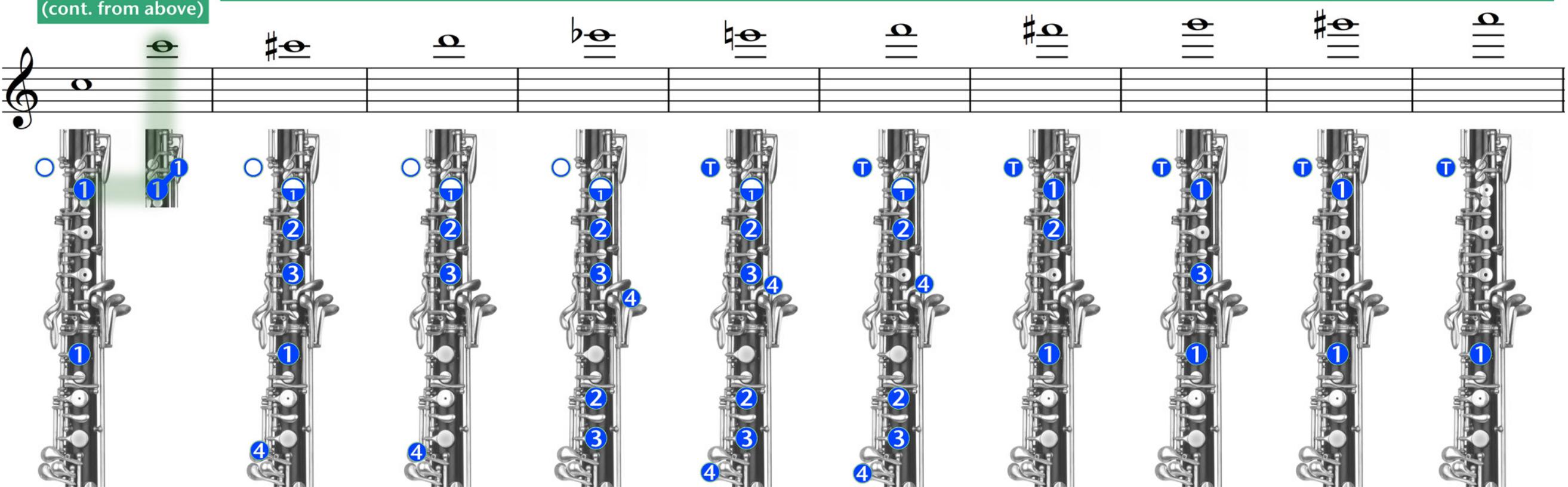
EXTENSION KEYS

FUNDAMENTAL OCTAVE AND SECOND OCTAVE OVERBLOWN TO THE 2nd PARTIAL



(cont. from above)

THIRD OCTAVE OVERBLOWN AT 3rd-7th PARTIALS



CLARINET

BOEHM SYSTEM
(WRITTEN PITCHES)

CHALUMEAU REGISTER OVERBLOWING TO THE 3rd PARTIAL CLARINO REGISTER

Diagram illustrating overblowing techniques for the Chalumeau register (written pitches) to the 3rd Partial Clarino register. The staff shows written pitches: E, F, G, A, B, C, D, E, F, G, A, B, C, D, E, F. Below each pitch is a physical clarinet diagram with fingerings indicated by blue circles labeled 'R' (Right Hand) and 'T' (Left Hand). Green boxes highlight specific fingering patterns: the first three positions use a 1-2-3-4 fingering; the next three positions use a 1-2-3-4 fingering; and the final five positions use a 1-2-3-4 fingering. A green bracket labeled 'or' connects the first three positions, and another green bracket labeled 'or' connects the last five positions.

ALTISSIMO REGISTER OVERBLOWN AT 5th-9th PARTIALS

Diagram illustrating overblowing techniques for the Altissimo register (written pitches) at the 5th through 9th partials. The staff shows written pitches: F#, G, A, B, C, D, E, F#, G, A, B, C, D, E, F#, G. Below each pitch is a physical clarinet diagram with fingerings indicated by blue circles labeled 'R' (Right Hand) and 'T' (Left Hand). Green boxes highlight specific fingering patterns: the first four positions use a 1-2-3-4 fingering; the next four positions use a 1-2-3-4 fingering; and the final seven positions use a 1-2-3-4 fingering. A green bracket labeled 'or' connects the first four positions, and another green bracket labeled 'or' connects the last seven positions.

BASSOON PART I HAECKEL SYSTEM

EXTENSION KEYS

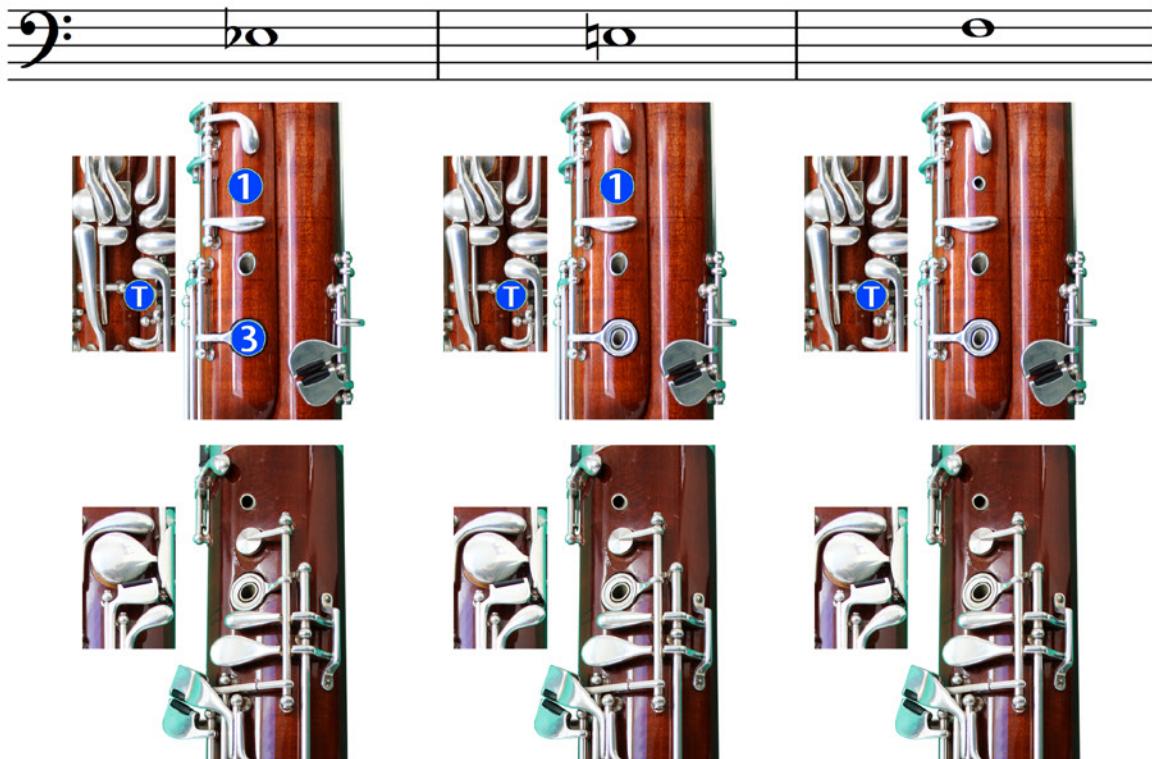
Bass clef.

FUNDAMENTAL OCTAVE AND SECOND OCTAVE OVERBLOWN TO THE 2nd PARTIAL

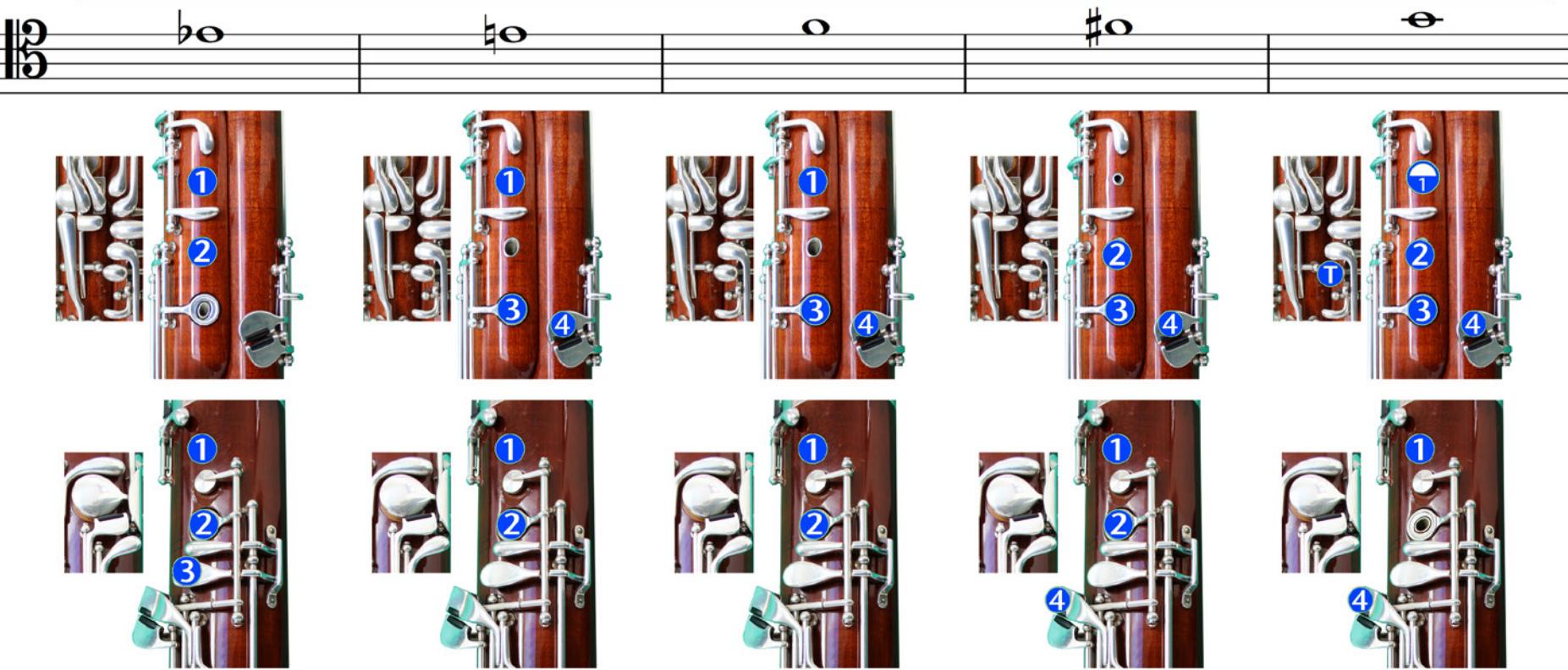
Bass clef.

BASSOON PART II HAECKEL SYSTEM

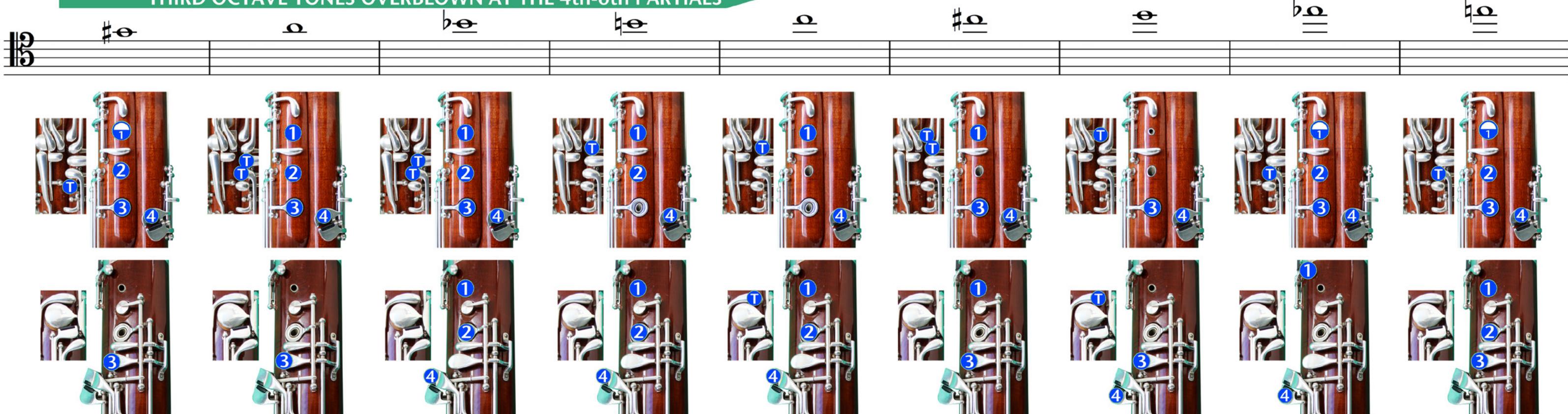
NON- OVERBLOWING FUNDAMENTAL TONES



SECOND OCTAVE TONES OVERBLOWN AT THE 3rd PARTIAL

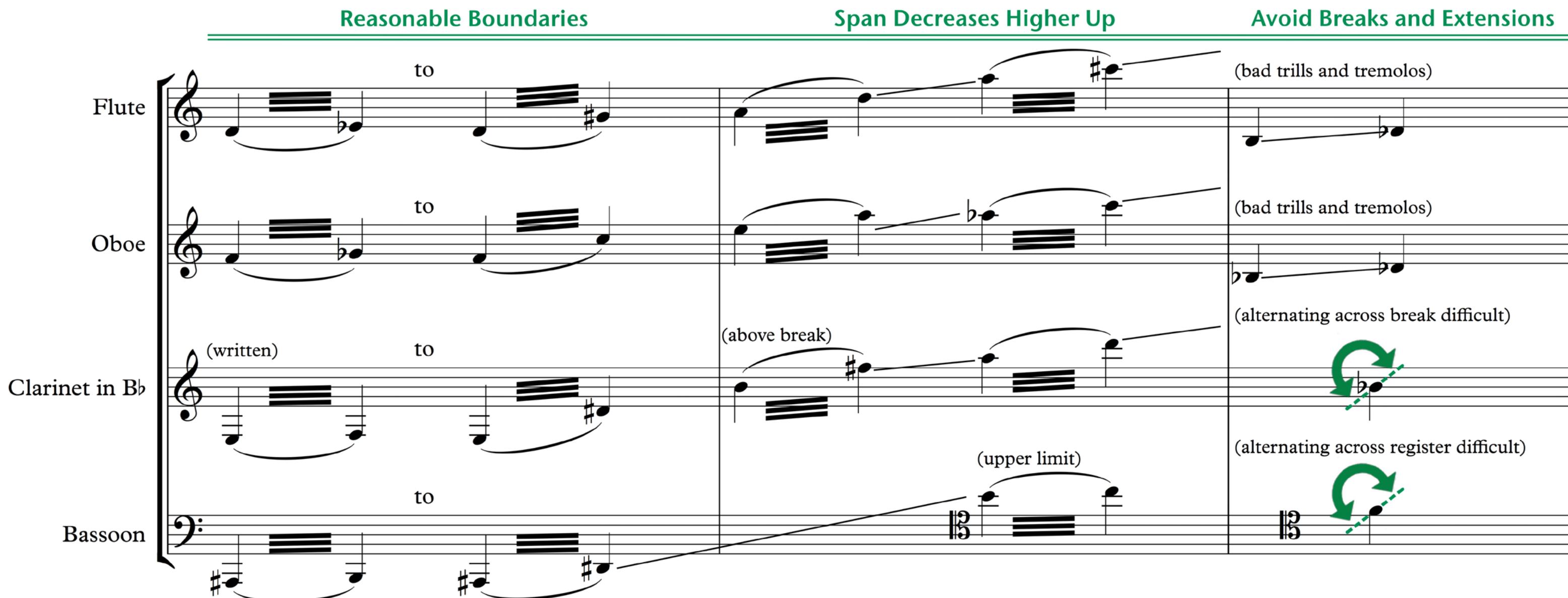


THIRD OCTAVE TONES OVERBLOWN AT THE 4th-6th PARTIALS



3. WIND INSTRUMENT TRILLS & TREMOLOS

Safe General Minimum Limitations For Standard Woodwind Instruments



The above chart is merely a general set of boundaries to aid in scoring, and isn't a definitive list of possible trills and tremolos. Nor are the following more specific charts. Some players have different capabilities, to the point where no chart can be considered definitive information. Nevertheless, there are certain common concerns, like embouchure formation, voicing, and fingering, not to mention overblowing, that limit the effective span of most tremolos. Even where a wider tremolo is possible, the orchestrator must ask whether it will sound good, or make any difference whatever to the sound of a score.

FLUTE TRILLS & TREMOLOS

CONT.

Charts adapted from "The Technique of Modern Orchestration" by Charles-Marie Widor

+ = difficult + + = very difficult to nearly impossible

OBOE TRILLS & TREMOLOS

The score consists of ten staves, each with a different dynamic marking:

- m2: ++
- M2: +
- m3: +
- M3: +
- P4: +
- aug5: +
- dim4: +
- P5: +
- m6: +
- M6: +
- m7: +
- M7: +
- P8: +

(score larger intervals with care)

+ = difficult **++** = very difficult to nearly impossible

CLARINET TRILLS AND TREMOLOS

(WRITTEN PITCHES)

E F F#/G^b G G#/A^b A A#/B^b B C C#/D^b D D#/E^b E F F#/G^b G G#/A^b A A#/B^b B C C#/D^b D D#/E^b E F F#/G^b G G#/A^b A A#/B^b B C

m2 M2 m3 M3 P4 aug5 dim4 (score larger intervals with care) P5 m6 M6 m7 M7 P8

Break-crossing Intervals (score with care)

+ = difficult ++ = very difficult to nearly impossible

CONT.

C#/D^b D D#/E^b E F F#/G^b

8^{meas} 1
8^{meas} 2
8^{meas} 3
8^{meas} 4

BASSOON TRILLS & TREMOLOS

A chart showing bassoon trills and tremolos across five staves (m2, M2, m3, M3, P4). The notes are labeled at the top: A#/B^b, B, C, C#/D^b, D, D#/E^b, E, F, F#/G^b, G, G#/A^b, A, A#/B^b, B, C, C#/D^b, D, D#/E^b, E, F, F#/G^b, G, G#/A^b, A, A#/B^b, B. The score uses a mix of slurs and grace notes to represent different techniques.

CONT.

Continuation of the bassoon trills and tremolos across five staves (m2, M2, m3, M3, P4). The notes are labeled at the top: C, C#/D^b, D, D#/E^b, E, F, F#/G^b, G, G#/A^b, A, A#/B^b, B. The score continues the pattern of trills and tremolos from the previous section.

Chart compiled by consultation with Bret Newton of Bandestrastion

+ = difficult **++** = very difficult to nearly impossible

4A. SPECIAL TECHNIQUES: CATEGORIES

Note: recommendations based on general approach of orchestra section players, not all wind players by any means.

	FINGERING	AIRFLOW	ARTICULATION
UNIVERSAL TECHNIQUE	Alternate/false fingerings	Air effects*	Glissando Flutter-tonguing (difficult for double-reeds) Tongueless attack/niente (best on clarinet/lower flute)
FLUTE ONLY	Harmonics Multiphonics* (some clarinetists also)	Whistletones*	Lip attack Slap tonguing (single-reeds also)
BETTER AS SOLO EFFECT	Keyclicks	*(air effects & whistletones)	
SPECIALIST TECHNIQUE	*(multiphonics)	Circular breathing	
PROBABLY UNNECESSARY		Mutes	Double-reed niente

4B. SPECIAL TECHNIQUES: BRIEF GUIDE TO MARKINGS

For best results, clearly mark each effect as its used in the simplest language possible. Never rely upon any special notation without also marking at least the first instance of that notation with a text description, such as "key click" or "air effect." Some effects require no special notation, and may simply be marked in text. From the previous list of categories, these include: mutes ("con sord." & "senza sord."); lip attack, breath pizz., and slap-tonguing (though staccato or staccatissimo articulation should also be marked); and niente (see chart on next page). Remember to cancel these effects with the marking "ord." or norm." Some guides recommend subtones be marked with "x" noteheads. Multiphonics should be marked with the fingering pattern required along with the voicing intended for the partials. Glissando and flutter-tonguing notation is shown in the Glossary of Markings. A few others are shown to the right.

Special techniques are a difficult subject in many ways, since their lack of widespread use also means that their notation may lack standardisation. Consultation with players and different notation manuals is highly recommended.

FLUTE HARMONICS

(lowest possible third-partial overblowing) flute harmonic range and notation

KEY CLICKS (aka "KEY SLAPS")

pitched key click unpitched key click

>) and 'x' marks on the staff. The bottom staff shows an 'unpitched key click' with a 4/4 time signature and a treble clef. It consists of vertical strokes (>) and 'x' marks on the staff."/>

AIR EFFECTS

unpitched air effect pitched air effect

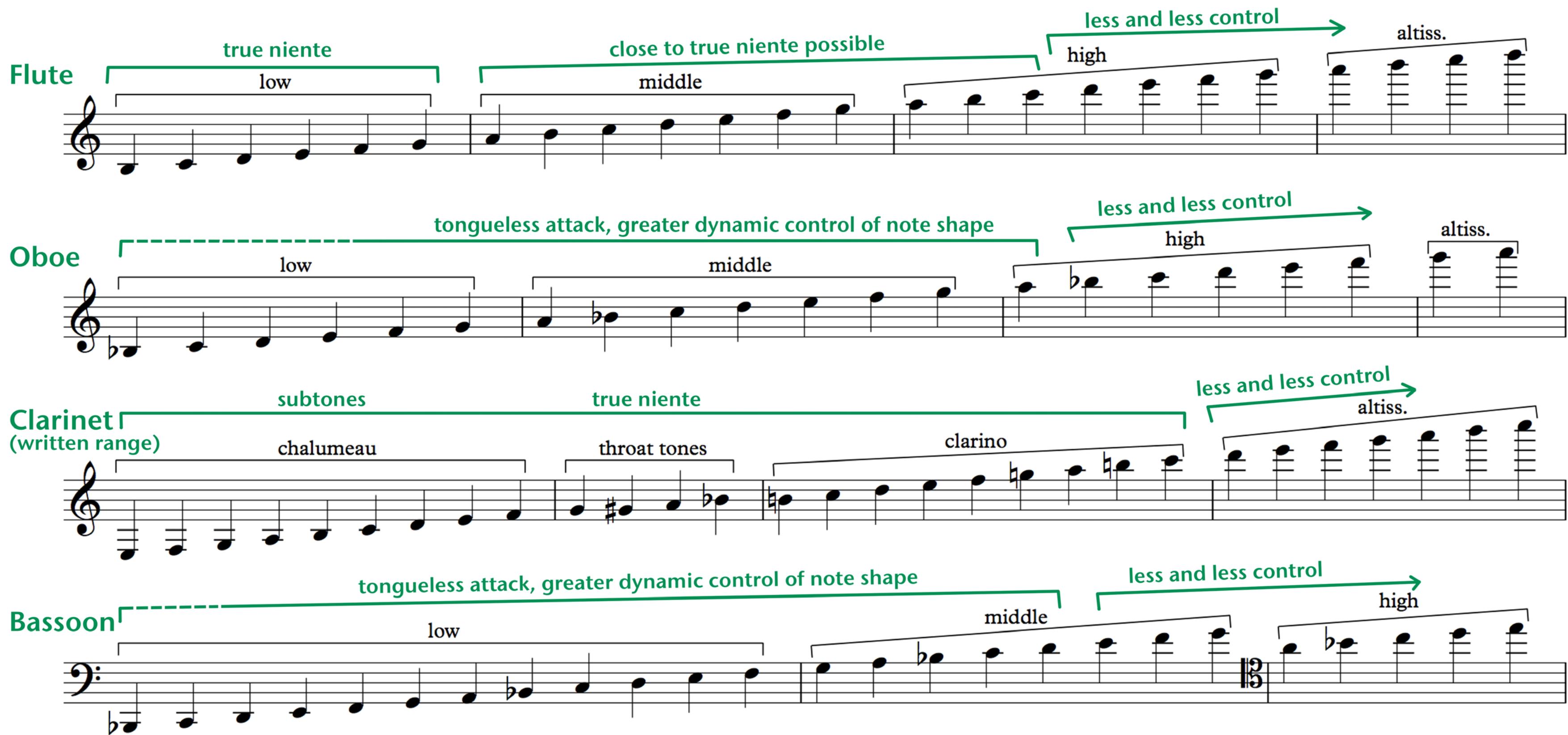
sh s f f f

WHISTLE TONES

random zig-zags whistle tones or w.t. w.t.

(indicate fingered fundamental tone)

4C. SPECIAL TECHNIQUES: NIENTE REGISTERS/IDEAL INSTRUMENTS



5. TRANSPOSITION CHART: BY WOODWIND FAMILY

	FLUTE FAMILY	OBOE FAMILY	CLARINET FAMILY	BASSOON FAMILY	SAXOPHONE FAMILY
STANDARD INSTRUMENTS	Flute	Oboe	B♭ Clarinet A Clarinet	Bassoon	
1st-LEVEL AUXILIARIES	Piccolo (middle C unplayable)	English Horn	E♭ Clarinet Bass Clarinet	Contrabassoon	
2nd-LEVEL AUXILIARIES	Alto Flute	Oboe d'Amore	Basset Horn		Alto Sax Tenor Sax
3rd-LEVEL AUXILIARIES	Bass Flute	Heckelphone / Bass Oboe	EE♭ Contra-alto Clarinet BB♭ Contrabass Clarinet		Soprano Sax Baritone Sax

TRANSPOSITION KEY

Written Middle C Sounding

5B: TRANSPOSITION CHART: BY DEGREE

standard flute, oboe, & C clarinet
C trumpet

B♭ clarinet, soprano sax
B♭ trumpet, cornet, flugelhorn

A clarinet, oboe d'amore

alto flute

English horn, bassett horn
French horn

E♭ clarinet, sopranino sax
E♭ trumpet

D clarinet
D trumpet

piccolo

bass clarinet in B♭, (F)
tenor sax euphonium

bass clarinet in A

(exists in scores only)

bassoon
trombone, tuba

BB♭ contrabass clarinet,
bass sax

contrabassoon,
(sarrusophone) (G)

bass clarinet in B♭
(German notation)

bass clarinet in A
(German notation) (F)

(exists in scores only)

TRANSPOSITION KEY



alto clarinet, alto sax
bass trumpet in E♭

E♭ contra-alto clarinet,
baritone sax (sarrusophone)

IV. B_b TRANSPOSITION COURSE

Introduction

This brief course is intended to give a quick boost to your score-reading skills, so that you'll quickly read instruments scored in B_b transposition and perceive their notes in relationship to concert pitch. The entire course should take a few hours; but I recommend that the time spent should be spread out over several days, so that the mind has time to absorb each lesson before moving on to the next. Keep in mind that this course is only an introduction. Automatic identification may take long hours of score-reading and many pages of scoring to achieve. Even then, the skill requires maintenance for many musicians, and shouldn't be neglected.

Course Curriculum

The course is divided into 5 lessons or tests. Each lesson is detailed on the following pages, except for Lesson 4 which I've linked at Orchestration Online on YouTube. Check your work with the B_b Transposition Course Key I've provided at the end of this PDF. Do NOT use an instrument for reference in Lessons 1, 2, and 4! This is training for eyes and ears only!

1. Note Identification & Transcription

Identify a series of notes in B_b transposition by sight and write their concert pitch names. Then transcribe several concert pitch passages of music to B_b transposition.

2. Harmonic Identification

Analyse a series of three-part harmonies for oboe, clarinet, and bassoon, and write the name of each chord.

3. Sight-Singing

Orient your sense of key location with a brief musical excerpt for each set of samples. Then sing transposed pitches at sight, using given major triads for each key as reference. Moveable "do" may be the best approach for this exercise.

4. Dictation

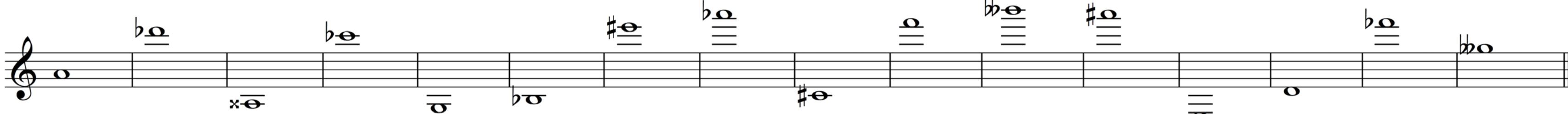
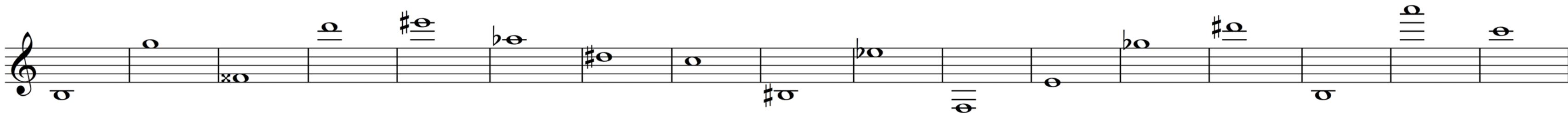
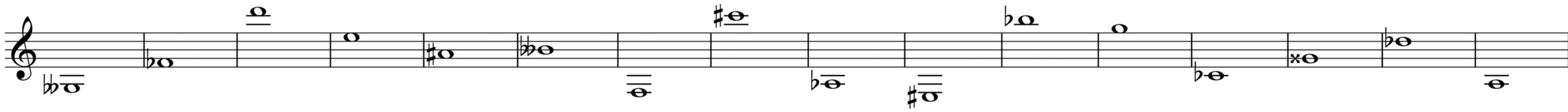
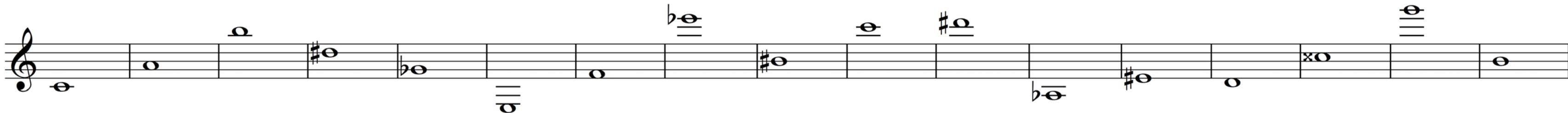
Transcribe passages of clarinet music by ear. Recordings provided in [this video](#) on the Orchestration Online channel, with some starting measures for reference.

5. Score Study

Play through clarinet excerpts, transposing the written notes to concert pitch. Then score-read each excerpted piece to put your developing skills to work. List and listening guide provided.

1A. NOTE IDENTIFICATION

Read and transpose each note by sight down a whole step, without the aid of an instrument.
Some double-accidentals may be respelled enharmonically.



1B. TRANSCRIPTION

Transcribe the following concert pitch excerpts up a whole step, scoring them to their written pitches as clarinet parts. Also transpose key signatures. Avoid using any instrument for reference.

1. Beethoven Trio op. 11, Movt. 1, bars 113-131

Allegro con brio

2. Brahms Clarinet Sonata op. 120 no. 2, Movt. 1, bars 1-11

Allegro amabile

3. Weber Clarinet Trio op. 34, Movt. 1, bars 20-33

Allegro

4. Reger Clarinet Sonata no. 3 op. 107, Movt. 2, bars 1-13

Adagio

5. Debussy Première Rhapsodie pour Clarinette, bars 28-32

Rêveusement lent, poco mosso

En serrant

Le double plus vite

6. Saint-Saëns Clarinet Sonata op. 167, Movt. 4, bars 21-32

Molto allegro

7. Goss Clarinet Sonata, Movt. 3, bars 4-11

Presto

2. HARMONIC IDENTIFICATION

Read and name each chord by sight, without the aid of an instrument. Clarinet staff is in B♭ sounding a whole step lower.

The image shows three staves of musical notation for three woodwind instruments: Oboe, Clarinet in B♭, and Bassoon. The notation is divided into three sections, each containing ten measures, numbered 1 through 50. The instruments are positioned vertically, with Oboe at the top, Clarinet in B♭ in the middle, and Bassoon at the bottom. The notation uses open circles for notes and various symbols (half circles, dots) for rests and accidentals. A bracket under the first staff is labeled "Bb".

3A. SIGHT-SINGING

Orient your sense of key location with each introductory excerpt.

Then sing transposed pitches at sight, using given major triads for reference.

Couperin, *Les Moissonneurs*

Gaiement

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

3B. SIGHT-SINGING (cont.)

W.A. Mozart, *Andante KV 15mm* (from "The London Notebook")

Andante

Musical score for the Andante section of W.A. Mozart's *Andante KV 15mm*. The score consists of two staves: treble and bass. The key signature is B-flat major (two flats). The time signature is 2/4. The music features eighth-note patterns and some sixteenth-note figures. The section concludes with a repeat sign and two endings.

Fine

D.C al Fine

Musical score for a vocal sight-singing exercise. The key signature is B-flat major (two flats). The time signature is 4/4. The vocal line consists of eighth notes. The lyrics provided are: do ti la ti do so re re do ti do re so mi. etc. The score includes a bass staff below the treble staff.

11.

12.

13.

Musical score for measure 14. The key signature is B-flat major (two flats). The time signature is 4/4. The vocal line consists of eighth notes and sixteenth-note pairs.

14.

15.

16.

Musical score for measures 15-16. The key signature is B-flat major (two flats). The time signature is 4/4. The vocal line consists of eighth notes and sixteenth-note pairs.

17.

18.

Musical score for measure 17. The key signature is B-flat major (two flats). The time signature is 3/4. The vocal line consists of eighth notes and sixteenth-note pairs.

19.

20.

Musical score for measure 18. The key signature is B-flat major (two flats). The time signature is 6/8. The vocal line consists of eighth notes and sixteenth-note pairs.

3C. SIGHT-SINGING (cont.)

Goss, Little Prelude in A^b

Poco Maestoso

A musical score for two staves. The top staff is in treble clef, B-flat major (two flats), and 3/2 time. The bottom staff is in bass clef, B-flat major (two flats), and 3/2 time. Measure 21 starts with a whole note followed by eighth notes. Measure 22 continues with eighth notes. Measure 23 begins with a half note. Measure 24 starts with a whole note. Measure 25 begins with a half note. Measure 26 starts with a half note. Measure 27 begins with a half note. Measure 28 begins with a half note. Measure 29 begins with a half note. Measure 30 begins with a half note.

A musical score for two staves. The top staff is in treble clef, B-flat major (two flats), and 4/4 time. The bottom staff is in bass clef, B-flat major (two flats), and 8/8 time. Measure 21 consists of eighth notes. Measure 22 consists of eighth notes. Measure 23 consists of eighth notes. Measure 24 consists of eighth notes. Measure 25 consists of eighth notes. Measure 26 consists of eighth notes. Measure 27 consists of eighth notes. Measure 28 consists of eighth notes. Measure 29 consists of eighth notes. Measure 30 consists of eighth notes.

A musical score for two staves. The top staff is in treble clef, B-flat major (two flats), and 3/2 time. The bottom staff is in bass clef, B-flat major (two flats), and 3/2 time. Measure 21 consists of eighth notes. Measure 22 consists of eighth notes. Measure 23 consists of eighth notes. Measure 24 consists of eighth notes. Measure 25 consists of eighth notes. Measure 26 consists of eighth notes. Measure 27 consists of eighth notes. Measure 28 consists of eighth notes. Measure 29 consists of eighth notes. Measure 30 consists of eighth notes.

A musical score for two staves. The top staff is in treble clef, B-flat major (two flats), and 3/4 time. The bottom staff is in bass clef, B-flat major (two flats), and 3/4 time. Measure 21 consists of eighth notes. Measure 22 consists of eighth notes. Measure 23 consists of eighth notes. Measure 24 consists of eighth notes. Measure 25 consists of eighth notes. Measure 26 consists of eighth notes. Measure 27 consists of eighth notes. Measure 28 consists of eighth notes. Measure 29 consists of eighth notes. Measure 30 consists of eighth notes.

A musical score for two staves. The top staff is in treble clef, B-flat major (two flats), and 6/8 time. The bottom staff is in bass clef, B-flat major (two flats), and 8/8 time. Measure 21 consists of eighth notes. Measure 22 consists of eighth notes. Measure 23 consists of eighth notes. Measure 24 consists of eighth notes. Measure 25 consists of eighth notes. Measure 26 consists of eighth notes. Measure 27 consists of eighth notes. Measure 28 consists of eighth notes. Measure 29 consists of eighth notes. Measure 30 consists of eighth notes.

4. DICTATION

Click the link in the introductory page of this course to go to Orchestration Online video containing audio samples of the following dictation. Listen to the notes in the samples and then transpose them up a whole step. Beginning bars for each given below (and in the video).

Brahms Clarinet Sonata op. 120 no. 1, Movt. 2, bars 13-22

Andante un poco Adagio



Vanhal Clarinet Sonata no. 2 in C, Movt. 2, bars 1-12

Adagio



Mozart Trio in Eb, K.498, Movt. 3, bars 1-16

Allegretto



Bruch Nocturne from 8 Pieces for Clarinet, Viola, and Piano, op. 83, bars 6-18

Andante con moto



Brahms Symphony no. 3, op. 90, Movt. 2, bars 1-13

Andante



5. SCORE STUDY

This final lesson will apply everything you've learned so far to score-reading. As I mention in the Lesson 4 video, any of these lessons may be complemented by your own further dictation, transcription, and score study. So consider this course to be a good first step rather than the final destination in your transposition training.

In the brief list to the right, IMSLP links are provided to parts from solo clarinet works. Play through the recommended bars in each part, transposing the notes a whole step down from the written pitches. Then read through the entire work in full score along to this playlist from the Orchestration Online YouTube channel. You should show marked improvement in your perception of the actual notes being played in any given bar.

ASSIGNMENTS

Weber Clarinet Concerto no. 2 in E♭, Op. 74

Transposing assignment: Movt. 2 entire or at least up to Figure B. Quintessential.

[Part](#) (pp. 6-7)

[Full Score](#)

D'Indy Clarinet Trio, Op. 29

Transposing assignment: Movt. 1, Figs. B to D or even up to J and beyond.

Extra credit: Movt. 3, reading the key of E♭ and playing D♭, then reading E♭ minor and playing in C♯m.

[Part and Score](#) (one file)

Also recommended in this style: [Faure Trio Op. 120](#) (not public domain in all countries)

Beethoven Clarinet Trio no. 2, Op. 38

Transposing assignments: Movt. 1 Allegro con brio to the 1st repeat or end; Movt. 3 Theme and Variations entire.

Extra credit: Movt. 2, transposing B♭-A♭.

[Part](#) (pp. 1, 5-6)

[Full Score](#)

Baermann Adagio from Clarinet Quintet no. 3, Op. 23 (misattributed to R. Wagner)

Transposing assignment: complete. More E♭-D♭ transposition. Transcendent writing.

[Full Score Only](#)

Busoni Clarinet Concertino, Op. 48

Transposing assignments: bars 2-30, 67-101, 165-191. Superb piece.

[Part](#)

[Full Score](#)

V. DICTIONARY OF MUSICAL TERMS

Preliminary: Orchestra Instrumentation Numerical Notation System

In video tutorial 22 of this course, “Section Sizes and Seating Plans,” I make reference to a system of numbers used as shorthand in describing different lineups. Let’s start this dictionary with a brief description of how to write using this code. Here’s an example to start with:

3232, 4231, *timp*, 3 *perc*, 2 *harps*, *strings*

The last 4 items on the above list are self-evident. The score is asking for a timpanist, three percussionists, two harpists, and strings. What really concerns us are the numbers on the left, “3232, 4231.”

Assume that each number represents a separate member of each wind and brass family member, written left to right as they appear vertically from the top of a full score. Therefore the wind numbers represent:

3 flutes, 2 oboes, 3 clarinets, and 2 bassoons.

The brass numbers represent (and this is very standard):

4 horns, 2 trumpets, 3 trombones, and 1 tuba.

It’s important to indicate missing instruments with a zero. For instance, Mozart scored his Symphony no. 39 without oboes and trombones, and the tuba didn’t yet exist. He also limited the flutes to a single player. In this case, the numerical notation would read:

1022, 2200, *timp*, *strings*

There are several ways to write out this notation. The above strategy is the simplest, and the one I personally use. However, it doesn’t account for auxiliary instruments like the piccolo or English horn. In some situations, orchestra managers and conductors will consider auxiliaries a given, such as when the numbers read “3333.” Tripled winds often bear the connotation that each family’s standard auxiliary will be scored, pairs of winds complemented by dedicated players on piccolo, English horn, bass or E♭ clarinet, and contrabassoon. Yet when the numbers climb into quadrupled winds and higher, assumptions arise that the score may contain any number of auxiliary players, which management will struggle to enlist if the instruments are rarer.

This unfortunately complicates our neat little system, but the solution is still easier than writing everything out in full. A wind section with many auxiliaries might be interpreted thus:

2+2picc+1alt.fl, 3+2eng.hn, 3+2b.cl, 3+2cb

Note how the first number of each category represents the standard instrument of the family. This assumes that the auxiliaries are all dedicated players. Usually, though, second- or third-chair players will double on a standard instrument along with an auxiliary, in which case the code might read:

2332 (*dbl. Eng. hn. & b. clar.*)

...or any other number of ingenious strategies you can read if you make an internet search of the indigestible words “Orchestra Instrumentation Numerical Notation.” There are a few webpages dedicated to this subject that go into far greater detail than this PDF guide allows. The very first strategy I suggest at the top, though, should be more than adequate for describing 95% of everything that’s scored for orchestra.

A

à 2, a2 - “à deux” (Fr) “with two”, a marking indicating that two wind or brass instruments should play the same single line or voice. Can be increased in number depending on how many instruments per part: a3, a4, etc.

A440 - a frequency of pitch used as a guide for today’s concert music tuning, the A above Middle C or A4. Usually played as a tuning reference by the oboist before a performance.

A clarinet - clarinet tuned to A, a half-step down from the standard B♭ clarinet. Used for the ease of performing music in keys with many sharps.

accent - a marking that emphasises the attack of a note.

ad libitum (Lat.) - “at one’s pleasure,” to play according to the personal desire and expression of the performer.

air effect - special effect wherein the player simply blows air through a wind instrument without engaging the embouchure.

alternate fingering - fingering using a different overblowing and position than the standard approach, usually to facilitate a quick change between two notes (as in a rapid passage, trill, or tremolo), or a different quality of tone or intonation.

altissimo (It) - “highest”, the highest notes of which a wind instrument is capable: usually the third octave above the fundamental scale.

alto clarinet - member of the clarinet family tuned a perfect 5th below the standard B♭ clarinet. Usually used in bands, rarely seen in orchestras, which use the closely related bassoon. Often named “bass flute” in older scores (such as Holst’s *The Planets*).

A (cont.)

alto flute - member of the flute family tuned a perfect 4th below the standard flute. Not uncommon.

arpeggio - a series of notes, typically a broken chord played from high to low or vice versa, often repeated as part of a pattern.

articulation - the manner in which a note is attacked, which can have a bearing on its tone quality and expressive and dynamic character. For wind instruments, the pronunciation, duration, shaping, and connection of musical tones (from video course).

auxiliary instrument - instrument extending the range of a woodwind family, which may be played by a performer of the standard model of that family. (Flutists may play a piccolo, etc.)

B

B-flat clarinet - standard member of the clarinet family. A single-reed instrument that covers the tenor-alto range, with an upper register that's nearly as high as the flute. Clarinets are regular members of the orchestral wind section, placed in the score between the oboes and the bassoons.

B-foot - a joint substituted for the normal foot joint of the standard flute that allows the instrument to reach B below Middle C (B3).

Baroque period - a historical period in Western culture dating from the start of the 17th century to the mid-18th century, in which forms tended to be elaborate in execution and

intellectual in structure. In this period, all the standard members of the wind section were scored orchestrally for the first time, with the exception of the clarinet.

bass clarinet - member of the clarinet family tuned an octave below the standard B \flat clarinet. This is the first-level auxiliary of its family, owned by many clarinet players.

bass flute - member of the flute family tuned one octave lower than the standard flute. The term "bass flute" is often misused to mean "alto flute" in older scores. Somewhat rare, used occasionally in film music.

bass oboe, baritone oboe - member of the oboe family tuned an octave below the standard oboe. Very rare.

basset horn - member of the clarinet family tuned a perfect fourth below the clarinet (but possessing extra extension keys that add four half-steps below the clarinet's written range). Used as an alto voice in many wind band scores of the Classical Era, and survives today mostly because of its use in key orchestral scores by Mozart. Rare.

bassoon - standard member of the bassoon family. A double-reed instrument that covers the bass range, with a tenor register that ascends to E5. Bassoons are regular members of the orchestral wind section, placed in the score below the clarinets at the bottom of the section.

bassoon family - a family of instruments based on the standard bassoon. Includes the bassoon, the contrabassoon, and obsolete higher instruments called "tenoroons" or "fagottini." The contrabass sarrusophone performs like a metal contrabassoon, though it's a member of its own family of instruments.

beak - the hollow, curved mouthpiece of the clarinet and saxophone families, against which a single reed is fixed.

bell - the end of a wind instrument pipe furthest from the mouthpiece, flaring for clarinets, saxophones, and oboes, or bulb-shaped in lower oboe family members. Some equivalent joints of other instruments do not flare, such as the flute foot joint or the bassoon bell.

bocal - a small, curved extension pipe used in lower double-reed instruments to place the reed in a position comfortable to the player's lips.

Boehm system - a fingering system in which every chromatic tone has an individual tone-hole, controlled by the player's eight fingers and left thumb through a series of keys, rings, and pads. Used by flutes and most clarinets. Developed by instrument builder Theobald Boehm.

boot - the lowest physical joint of the bassoon, in which the bore doubles back on itself in a "U" shape. This is a vestige of the instrument's ancestor the dulcian.

bore - the inner walls or cavity of a wind or brass instrument's sound pipe. The shape of the bore determines the character of its sound and overblowing pattern.

break - the point between the top note of the clarinet's chalumeau register (written B \flat 4) and clarino register (written B4). Certain functions are difficult to accomplish across this break, such as tremolos and other fast changes and slurs, especially for student and amateur clarinetists.

C

cane - the raw material from which woodwind reeds are constructed, taken from the bamboo-like plant *Arundo donax*.

cantando (It) - in a singing style (Fr) chanté

capriccioso (It) - free, lively, whimsical.

chalumeau - the ancestor of the clarinet, a popular folk instrument of the Renaissance and Baroque periods. Instrument builder J.C. Denner changed this instrument into the clarinet by adding a register key along with other improvements to facilitate playability across its entire range.

chalumeau register - the fundamental register of the clarinet, covering low E3 up to B♭4, if the throat tones are included.

circular breathing - special wind technique whereby the supply of air is replenished by isolating the outflow from the mouth while breathing in through the nose.

clarinet - see **B-flat clarinet**

clarinet family - a family of instruments based on the standard B♭ clarinet. For orchestral music, this includes the E♭/D clarinets, the standard B♭/A clarinets, the bassoon, the bass clarinet, and the contrabass clarinets in EE♭ (aka “contra-alto”) and BB♭. Several more clarinet family members are used as band instruments or are now obsolete for modern scoring.

clarino register - the second register of the clarinet, achieved by overblowing the notes of the chalumeau register at the third partial, an octave and a perfect fifth above. The lowest chalumeau note of E3 will therefore overblow to the lowest clarino note of B4.

clarion register - Anglicisation of the word “clarino,” sometimes seen in British or American texts.

Classical period - a historical period in Western culture dating from the mid-18th century to the early 19th century, in which directness and clarity of form was the ideal.

closed pipe - a resonating tube which has a closed rather than open construction, like some church pipes, whistles, panpipes, and ocarinas. The stopping of a pipe at one end results in a half-consonance as the fundamental pitch, an octave below a regular full consonance. The clarinet’s cylindrical bore and single reed simulates the acoustic properties of a closed pipe, producing half-consonances for the notes of the chalumeau register. As a result, only odd-numbered partials may be overblown, spaced wider than other wind instruments.

colla parte (It) - “with the part,” to follow the tempo and rhythm of a featured section or soloist (Fr) **suivez**

con sordini - “with mutes” - see mutes

concerto - a work for solo instrument and orchestra, usually in contrasting movements.

conical bore - see bore. A wind instrument bore that tapers in the shape of a cone, usually from a small diameter near the mouthpiece to a wide diameter at the bell. Some instruments reverse this pattern, such as the medieval recorders that reduce from mouthpiece to bell.

consonance - in acoustic terms, a whole fundamental tone consisting of a single node. In music theory, harmony which is based on the first, third, and fifth partials of the harmonic series, or other intervals that show agreement in their overtones.

contra-alto clarinet - see contrabass clarinet

contrabass clarinet - lowest regular member of the clarinet family, in two models. Compared to the standard B♭ clarinet, the EE♭ (aka “contra-alto”) is tuned an octave plus a major 6th lower, and the BB♭ is tuned a full two octaves lower. Somewhat rare, common in film music.

contrabassoon - member of the bassoon family tuned an octave lower than the standard bassoon. Despite its expense and large size, it is owned by many bassoonists especially for freelancing purposes. Common.

con vibrato - to restore vibrato after nonvibrato

cor anglais - see English horn.

cylindrical bore - see bore. A wind instrument bore designed with the same diameter from end to end. Flutes are largely cylindrical, with a parabolic curve built into the mouthpiece that assist overblowing at the second partial. Clarinets are completely cylindrical with the exception of a flaring bell, which when combined with the single reed restricts overblowing to only odd-numbered partials.

D

Dämpfer - see mutes

divertimento (It) - “diversion,” “amusement,” a generally light-hearted suite of pieces composed for chamber musicians of the Classical period. Some divertimentos are essentially string/wind trios, quartets, and quintets. Others can reach near-symphonic proportions.

dolce (It) - “sweetly,” to play in an extremely expressive style. (Fr) **doux**

D (cont.)

double-reed instruments - members of the oboe and bassoon families, producing tone by means of double reeds. Sometimes these families are collectively called “the double reeds.”

double reeds - two thin slices of cane, carefully shaped at one end to vibrate against one another to produce a tone. The other end is lashed together with twine to form a stem or staple, which is then fitted directly into the instrument or onto the tip of a bocal.

double-tonguing - alternating attack using the tip and back of the tongue, sounding like the consonants “T” and “K.” Used mostly by flutists, but occasionally some clarinetists.

dulcian - the direct ancestor of the bassoon, itself an adaptation of the shawm and zurna. An ancient instrument composed of a single stock of wood into which a gently tapering conical bore has been carved, doubling back on itself in a “U” shape. Thus, the reed (placed on a bocal) is very near the bell of the instrument. Dulcians came in many different sizes, from soprano to double-bass. The modern bassoon was adapted from the curtal or bass dulcian, probably by instrument builder Martin Hotteterre in the mid-17th century.

E

E-flat clarinet - member of the clarinet family tuned a perfect 4th above the standard B♭ clarinet. Also known as the sopranino clarinet. Many clarinetists own and play the model, but not with the same frequency nor the same capability as the bass clarinet.

embouchure - physical and mechanical apparatus of tone-production in wind and brass instruments.

en dehors (Fr) - prominently, strongly.

English horn - member of the oboe family tuned a perfect 5th below the standard oboe. Many oboists own these instruments, and they are scored extensively throughout the standard repertoire. Common but gorgeous.

espressivo (It) - expressively; abbr. espress.

expressif - see *espressivo*

extension key - for the purposes of this course, an extension key allows for lower tones than the fundamental scale upon which the main fingering pattern is based. Wind players may only term a key as an extension if it reaches above or below the standard fingering of the whole instrument, like the flute’s B foot.

F

fagottino - see tenoroon

fagotto (It) - bassoon.

false fingering - see alternate fingering

fingering - position of the fingers against wind instrument tone-holes that cause the vibration within the bore to reach a certain pitch.

fingering system - mechanical and physical construction on the exterior of a wind instrument designed for complete access to all possible chromatic tones. Flutes and most clarinets use the Boehm system. Oboes mostly use the French Conservatoire system. Bassoons use either the German (Haeckel) or French (Buffet) systems.

flute - standard member of the flute family. A reedless instrument that produces tone by splitting the airstream over an embouchure hole, covering tones from Middle C (or a half-step lower with the B foot) up to C7 three octaves above.

flute family - a family of instruments based on the standard flute, including most commonly the piccolo and alto flute, and the rarer bass flute. Flutes are regular members of the orchestral wind section, placed in the score above the oboes at the top of the section.

flute harmonics, see *harmonics*

flutter-tonguing - special effect using the rolling of the tip of tongue or the glottis to produce a trembling tone similar to unmeasured string tremolo.

foot, foot joint - the lowest or bottom joint of an instrument, usually one without a flare like the flute. See *bell*.

fortepiano - to immediately reduce the dynamic level after an attack.

fundamental tone - lowest tone of a wind or brass instrument without overblowing. This is usually a whole consonance or waveform consisting of a single node; but the clarinet’s fundamental tones are half-consonances.

G

glissando - to glide or slide from pitch to pitch; specifically, the musical effect itself. For wind instruments, avoid the related term *portamento*.

H

harmonic series - the natural tendency of vibrations to increase in frequency over a fundamental tone. All wind instrument pitches are either fundamental tones or partials (overtones) in the harmonic series.

harmonic partial - the wavelength of a tone according to its position in the harmonic series. Fundamental tones are the first partial, overblowing the octave is the second partial, and so on.

harmonics - special effect using alternate fingerings to produce more distant, less obviously resonant pitches. Almost completely a flute technique, and almost completely composed of third-partial overblowing.

Heckelphone - member of the oboe family pitched an octave below the standard oboe, with a heavier tone than the equivalent bass oboe. Often played by a bassoonist.

I

intonation - the relationship between tones developed by a player that allows them to play in tune.

J

joint - removable stock or piece of pipe from the main body of a wind instrument.

K

key - lever or pad resting below or within reach of a wind player's finger, which opens or closes a tone-hole.

key click - special effect using the sound of fingers playing keys without a normal approach to tone production.

L

legato - the quality of phrasing in a smoothly connected way. This may or may not include slurring.

leggiero - "lightly," with a delicate touch. (Fr) léger

lunga (It) - "long," to greatly increase the length of a note; usually applied to a fermata.

M

marcato (It) - "marked," to play forcefully

Modern period - a historical period in Western culture dating from the early 20th century to the present, in which many stylistic and cultural barriers have been erased, approaches have enormous freedom, and often the context of a work is key to understanding its content.

molto vibrato - to play with an exaggerated amount of vibrato
- see also espressivo

mouthpiece - part of instrument coming into direct contact with a player's mouth; such as the head joint of a flute, or the beak of a clarinet or saxophone. The reeds and bocals of double reed instruments are not properly regarded as mouthpieces.

multiphonic tones - special effect producing several simultaneous tones over a single note. Rare in orchestral music, usually restricted to flutes. Careful planning required for each pitch with a narrow range of possible combinations.

mutes - devices placed on a musical instrument that limit a part of its resonance, resulting in a different tone. This may aid in playing extremely quietly, or simply provide a different textural element at any dynamic volume. Largely useless for wind instruments as they negatively affect intonation and even blot out certain notes, but appearing in one or two scores.

(Fr.) **sourdines**, (Ger) **Dämpfer**

N

niente (It) - "nothing", the quality of playing at a barely audible level, usually as the start of a crescendo or end of a diminuendo. From the wind section, only clarinets and lower-register flutes are capable of true subtlety and finesse when performing this effect. See also subtones

nonvibrato - to play without vibrato, often as an indication of an older approach. Clarinets commonly play without vibrato, as do bassoons occasionally in support playing. All other instruments must be marked if the effect is desired.

O

oboe - standard member of the oboe family. A double-reed instrument capable of many shades and subtleties of expression, with greatest functionality in the mezzo-soprano range between E4 and A5.

oboe d'amore - member of the oboe family tuned a minor third lower than the standard oboe. More of a baroque instrument, its use has been assured by essential roles in scores by Debussy, Ravel, and others. Yet it's still difficult to play and procure, and few oboists own them. Rare.

O (cont.)

oboe family - a family of instruments based on the standard oboe, including most commonly the English horn, with very rare appearances by the oboe d'amore and bass oboe/ Heckelphone. Oboes are regular members of the orchestral wind section, placed in the score between the flutes and the clarinets.

octet, wind - chamber music form using eight musicians. The standard classical octet was scored as 2 oboes, 2 clarinets, 2 horns, and 2 bassoons. See also **sextet, wind**

open pipe - a resonating tube constructed with openings at either end of the pipe. This results in a whole consonance as the fundamental pitch, and the complete range of odd and even-numbered partials. This is the standard approach for flutes, oboes, bassoons, and saxophones.

orchestra - a combined group of musicians usually founded upon the string section, including regular players of wind, brass, percussion, harp, and keyboard instruments.

orchestration - the process of bringing separate elements together to create one work, most commonly referring to arranging an idea for an orchestra.

ôtez les sourdines see **senza sordini**

overblow, overblowing - the manipulation of pressure and finger position resulting in higher pitches than the fundamental tones available in the lowest octave of a wind instrument. Overblowing can reach up to the 6th or 7th partial in most instruments, or as high as the 11th in clarinets.

P

pad - key which covers a tone-hole, or more properly the felt forming an airtight seal between key and tone-hole.

phrase - a musical idea that is thematically and/or expressively cohesive. It may be a small building block of a longer passage or series of patterns. Or it may describe an extended idea. Phrasing in wind instruments often involves a series of decisions about breath and articulation that are essentially verbal in nature, like singing or speech.

piccolo - member of the flute family transposing up an octave, but without the foot joint so that the lowest C and C♯ are missing. Piccolos can reach the very highest C on the piano, and even higher though these notes make little sense to the ear. Not only do most professional flutists own and play the piccolo, but also it's most common auxiliary instrument in the whole orchestra.

portato - individually articulated notes, played in a semi-connected way. The term may be used by wind players to mean any group of slurred articulations, such as slurred staccato or slurred tenuto.

principal player - The first chair player of an instrumental group, who takes responsibility for the other players within their group and plays most of the solo passages.

Q

quart-bassoon, quint-bassoon - see **tenoroon**

quartet, wind - chamber form most commonly scored as flute, oboe, clarinet, and bassoon. Easier to balance in some ways and yet far less common than the wind quintet.

quintet, wind - chamber form scored as flute, oboe, clarinet, horn, and bassoon. The most popular lineup of chamber winds, to the extent that the term also describes the ensemble itself, i.e. "The Dorian Wind Quintet."

R

recitando - in a reciting, declamatory style

recorder - group of flute-like instruments originating in the Medieval period, differing from the flute in having a fixed whistle or beak constructed into one end of the instrument. These instruments are not the true ancestors of flutes, but their presence helped to establish scoring for flute-like instruments as well as the need for an eventual successor of greater agility and flexibility.

reed - a small slice of cane, the vibration of which can initiate tone at the head of a pipe.

reed instrument - any instrument that uses a reed for tone production, including oboes, bassoons, clarinets, and saxophones. Reed organs, accordions, harmonicas, and bagpipes are also common reed instruments, as are many musical toys that squeak and bleat.

ring - mechanical fingering device that forms a ring around a tone-hole, allowing the player to minutely adjust the position of the fingertip while securing the position of other pads and keys.

Romantic period - a historical period in Western culture dating from 1820 to 1910, in which the development and contrast of emotion heavily influenced function and form.

S

sarrusophone - family of double-reed instruments of metal construction, conceived by French bandmaster Pierre-Auguste Sarrus and designed as replacements for oboes and bassoons in outdoor situations. French composers used the contrabass sarrusophone as a replacement for the contrabassoon during a time when the latter instrument was considered unsatisfactory or unavailable. The sarrusophone resembles the contra in tone, though with a somewhat louder and heartier tone.

saxophone - family of single-reed instruments of metal construction invented by Adolphe Sax, differing from clarinets in having oboe-like fingering and a pronounced conical bore. Saxophones are common guests to the orchestra in many well-known works, though attempts to integrate them into the standard ensemble have been largely unsuccessful.

scherzando - in a comical or playful style

second chair player - secondary player of any wind instrument group, most often taking the lower voice in a harmony or doubling the line. This position is sometimes titled "co-principal" if the roles of first and second are often exchanged by players of equal ability and seniority. Second chair players often specialise on auxiliary instruments, as there may be additional fees available according to union rules or other pay scales. Or there may be a dedicated third chair player in some larger orchestras who handles most auxiliary duties (especially for clarinets).

sempre (It) - "always," continue to perform with the marking indicated

senza vibrato (It) - "without vibrato" see nonvibrato

serenade, wind - lighter, more broadly entertaining work for various instruments. Mozart scored one wind serenade for standard wind octet, and his Serenade Gran Partita for the same plus two basset horns, an extra pair of horns, and double bass.

sextet, wind - chamber music form using six musicians, usually in pairs: two oboes, two horns, and two bassoons. This lineup is essentially the wind section plus horns from an early Classical period symphony, and may be used as template for preliminary study before moving on to full orchestral study.

sforzando - an accent, sometimes played with extra emphasis.

shawm - ancient double-reed instrument based on the Turkish zurna and other Middle Eastern models imported to Medieval Europe. The shawm used a mouthpiece called a pirouette, which held the reeds in a position making it easy to play for casual musicians, but did nothing to lend variety of expression to what was already a blunt, raucous sound from a wide bore with large tone-holes. Instrument builders Martin Hotteterre and Michel Philidor scaled down and refined many such features of the shawm before arriving at the form of the oboe.

shortening-hole system - process of covering and uncovering tone-holes to change the pitch of a resonating pipe. The change of pitch is the opposite direction of string fingering. String players add fingers to shorten the string and ascend in pitch, while wind players remove fingers to shorten the resonant length of tubing. Wind players may slightly crack open tone-holes to adjust the pitch of a tone, cover half the hole to lower by a half-step ("half-hole"), and cover lower tone-holes below an open hole for the same effect ("fork fingering").

single-reed instruments - instruments using a single reed against a beak, the clarinet and saxophone families.

single-tonguing - articulating a series of notes without resorting to multiple tonguing. Double-reed instruments are capable of very clear and rapid single-tonguing due to the tiny amount of engagement necessary by the tip of the tongue.

slur - a curved line that covers a group of notes indicating that a wind player should play them within the span of a single breath.

smear - wide glissando, especially on a clarinet or saxophone, which maintains a strident tone.

soli - indicating a section of music in which a group of players perform a featured part, rather than one player

solo, soloist - a part or player of a single featured instrument, usually within a work of combined parts and players

sostenuto (It) - in a sustained style (Fr) **soutenu**

sourdine - see **mutes**

staccatissimo - a very short, separated staccato, with a touch of emphasis

staccato - short, abruptly articulated notes with a sense of separation

staccato, accented - short notes, played with special emphasis

staccato, mezzo/slurred - individually articulated notes,

standard instrument - the model of wind instrument upon which a family is based. This model remains the most commonly used for each family in the orchestra.

S (cont.)

stock - name for the body of a wind instrument, most commonly in regard to removable sections.

strings, string section - a section of the orchestra composed of two groups of strings, and one group each of violas, cellos, and double basses.

subtonic - notes played at an extremely low range of audibility in the clarinet's chalumeau register. See niente

support, supported breathing - using a combination of force and resistance by the abdominal, diaphragmatic, and intercostal muscles to adjust the force, projection, and consistency of a note or series of notes.

T

tenoroon - general term for several obsolete/unofficial higher members of the bassoon family (now making a comeback as student and solo instruments thanks to instrument builders such as Guntram Wolf). These include the quart-bassoon, tuned in F up a perfect 4th from the standard bassoon; the quint-bassoon, tuned up a perfect 5th; and the octave-bassoon or fagottino, tuned an octave higher. Useful in developing the abilities of student bassoonists from an early age, rather than having to wait until their fingers have grown to a large enough size.

tenuto (It) - to emphasize the length and fullness of a note.

throat tones - the notes from G4 (or F#4) up to Bb4 on a clarinet which extend up above the fundamental scale of the instrument into the upper pipe or "throat" of the instrument. As the length of pipe is extremely small, these tones are of somewhat less tone quality and fullness of projection, but a good player should be able to make them sound even with the other registers. See also break

tone-hole - holes drilled along the length of a wind instrument that are covered by fingers and mechanised pads and keys.

tonguing - the process of attacking the start of a note by opening the airflow with the tongue. The firmness and motion of the tongue help to control articulation.

transposition - the notation of a musical part using notes of a different tuning than those played.

transverse flute - the direct ancestor of the modern flute, differing from recorders in positioning the lips along the bore of the instrument and blowing directly across a tone-hole.

traverso - see transverse flute

tremolo (It) - "trembling," usually defined as an extremely rapid repetition of a note, also known as an unmeasured tremolo. See other types below.

tremolo, fingered - to rapidly alternate between two pitches, usually a third or more apart. May be measured or unmeasured.

tremolo, measured - repeating one note, or alternating two note, with defined time values.

trill - to rapidly alternate between two adjacent pitches

trill key - special key that triggers the opening of a tone hole in a position that allows for rapid alternation between two otherwise inaccessible or difficult pitches.

trio, wind - chamber music form involving three instruments, most commonly flute or oboe with clarinet and bassoon.

triple-tonguing - alternating attack using the tip and back of the tongue, in patterns like "T-T-K" or "T-K-T." See also double-tonguing.

V

vibrato - the quality of vibration and modulation of pitch created by fluctuating the intensity of the airflow with the abdomen or other muscles along the air passage; to restore vibrato after nonvibrato, also written as con vibrato.

voicing - position of the tongue and jaw creating a shape within the mouth to aid the formation of the embouchure.

W

waveform - length and frequency of a tone.

whistle tone - special effect lightly blowing over the flute embouchure hole for a whistling effect.

wind instrument - musical instrument played by using breath to initiate a vibration at the head of a resonant tube, which is shortened and lengthened by covering and uncovering tone-holes.

wind section - orchestral section of the orchestra comprised of wind instruments from the flute, oboe, clarinet, and bassoon families. May include special guests such as the saxophones.

woodwind, woodwind instrument - formal title for wind instrument, q.v.

Z

zurna - Turkish ancestor of the shawm, precursor of the oboe.

Glossary of Markings

"portato"

breath	tenuto	accent	sforzando	marcato	fortepiano	staccato	staccatissimo	slurred staccato	slurred tenuto
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sf *fp*

first player	first player's part featured against texture	first & second players on one voice	first player scored as individual voice	second player ditto	marking players on separate voices
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1./1°/I 1./1°/I solo 1. & 2./a2/à 2

(2./2°/II, 3./3°/III, etc.) (2. solo, 1. & 2. soli, etc.) (a3, a4, etc.)

1. & 2.

3.

glissando	trill	measured tremolo (repeated)	flutter-tonguing (unmeasured tremolo)	fingered tremolo (measured)	fingered tremolo (unmeasured)
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gliss. *tr~~~~~*

equals equals

flz.

equals equals

B \flat TRANSPOSITION COURSE KEY

1A. NOTE IDENTIFICATION KEY

The image displays four staves of musical notation, each consisting of five horizontal lines. The notation uses a treble clef and includes various note heads and stems. The first staff begins with a note on the fourth line, followed by notes on the fifth line, second line, and first line. The second staff begins with a note on the third line, followed by notes on the fourth line, first line, and second line. The third staff begins with a note on the second line, followed by notes on the first line, third line, and fourth line. The fourth staff begins with a note on the first line, followed by notes on the second line, fourth line, and third line. The notation includes sharp (♯) and flat (♭) symbols, as well as triple bar lines and repeat dots.

1B. TRANSCRIPTION KEY

1. Beethoven Trio op. 11, Movt. 1, bars 113-131

Allegro con brio

2. Brahms Clarinet Sonata op. 120 no. 2, Movt. 1, bars 1-11

Allegro amabile

3. Weber Clarinet Trio op. 34, Movt. 1, bars 20-33

Allegro

4. Reger Clarinet Sonata no. 3 op. 107, Movt. 2, bars 1-13

Adagio

5. Debussy Première Rhapsodie pour Clarinette, bars 28-32

Rêveusement lent, poco mosso En serrant

Le double plus vite

6. Saint-Saëns Clarinet Sonata op. 167, Movt. 4, bars 21-32

Molto allegro

7. Goss Clarinet Sonata, Movt. 3, bars 4-11

Presto

2. HARMONIC IDENTIFICATION KEY

Harmonic Identification Key (Measures 1-24)

Key signatures above the staff:

- B♭
- Em/G
- D♭
- C♯m/E
- C°
- Gm/D
- C♯/E♯
- A♭/C
- A/E
- F^{7(omits)}
- G♭°
- D°/F
- E^{7(omits)}
- C♯m
- B♭/D
- C/G
- C^{7(omit3)/B♭}
- E♭/G
- Dm/A
- E
- C^{7(omits)/E}
- F♯
- F^{7(omits)/A}
- E°

Instrument parts:

- Oboe
- Clarinet in B♭
- Bassoon

Measure numbers 1 through 24 are indicated below the staves.

Harmonic Identification Key (Measures 25-50)

Key signatures above the staff:

- Gm/D
- A♭
- B♭/F
- E♭m
- A♭^{7(omits)}/C
- Bm^{7(omits)}
- G°
- D^{7(omits)}
- A⁺
- B/D♯
- Fm/A♭
- C♯^{7(omit3)/G♯}
- G♯m
- E♭
- F°
- G^{maj7}
- D/F♯
- F^{7(omits)/E♭}
- Bm/F♯
- B°
- G⁺
- F♯m
- Fm
- D°
- A^{7(omits)/G}
- E♭^{7(omit3)/D♭}

Instrument parts:

- Ob.
- Cl.
- Bsn.

Measure numbers 25 through 50 are indicated below the staves.

4. DICTATION KEY (no keys necessary for lessons 3 & 5)

Brahms Clarinet Sonata op. 120 no. 1, Movt. 2, bars 13-22

Andante un poco Adagio

Vanhal Clarinet Sonata no. 2 in C, Movt. 2, bars 1-12

Adagio

Mozart Trio in Eb, K.498, Movt. 3, bars 1-16

Allegretto

Bruch Nocturne from 8 Pieces for Clarinet, Viola, and Piano, op. 83, bars 6-18

Andante con moto

Brahms Symphony no. 3, op. 90, Movt. 2, bars 1-13

Andante