

Woodwind Articulations

The major components involved in wind articulations are the breath and the tongue. The interaction of these two elements provides all of the various types of articulations available to wind players. The working of the system can be broken down into three phases:

1. *Attack*. The tone begins when the tongue of the performer moves away from the back of the teeth, opening a passageway for the air through pursed lips. It is somewhat like saying the phoneme "ta."
2. *Steady-state*. The air from the player's lungs rushes into the instrument setting the reed(s) and air column into vibration. The tone will continue as long as the flow of air continues.
3. *Release*. The flow of air ceases and the tone stops.

At every step the performer may introduce variations that modify the attack, steady-state, or release of the tone. Among these modifications are the use of various locations for the tongue and changes in the shape of the tongue; the speed, quantity, and direction of the air flow; the size and shape of the mouth and throat; and the method by which the air flow is stopped. The possible modifications and variations are certainly more vast than the number of articulation symbols that the composer has available. Therefore, the various articulations that are described in the following section are to be taken as average articulations. For example, there is not just one type of *staccato*; each instrument has its own characteristic staccato that it will produce naturally. In spite of the variety of staccatos produced by a mixed group of instruments, good ensemble is still possible because performers can overcome these differences and match each other's articulations.

There are three main classes or types of articulations to be found in woodwind music. These three are *legato*, *nonlegato*, and *staccato*. Exact classification into these three categories, however, is often not so simple, for the extremes within each of the three classes, when heard in another context, may be judged to belong to another class of articulation.



EXAMPLE 3.1. Notation of the three main classes of woodwind articulation: (a) legato (b) nonlegato (c) staccato

Legato

Legato articulations are those in which, once the initial tone is started, the performer's tongue plays no audible role in the starting of subsequent tones. The tones of the passage sound smoothly connected and one perceives no break or separation between pitches. In addition, one does not hear any percussive attack or start to the notes. The notation for legato articulation for wind players is a slur.

Nonlegato

Nonlegato articulations are characterized by each note being started by the tongue with very slight separations between the notes. The separations are usually only long enough for the player to reposition the tongue so that the next pitch may be started (a very rapid operation even for less experienced players). The main distinction between legato and nonlegato articulations has to do with the use of air: instead of using a constant, uninterrupted stream of air, as in legato playing, nonlegato is a constant but interrupted stream of air which gives each note a separate attack and release.

Staccato

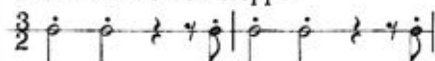
Staccato articulation is nearly the exact opposite of legato. In practice, it is an extreme example of nonlegato. Staccato notation is somewhat ambiguous. The pitches are written full value, but the notation instructs the performer to insert spaces between the notes. Since the performer must place the beginning of each note at its appropriate moment in time, it is therefore obvious that to achieve a staccato, the player must shorten the notes to provide the necessary spaces. Therefore, the staccato version of the passage in Example 3.1 may sound as follows:



EXAMPLE 3.2. One possible staccato performance

In slow passages problems of interpretation arise. A famous example is the opening to Beethoven's *Egmont* Overture where the full orchestra has:

Sostenuto ma non troppo



EXAMPLE 3.3. The rhythm and articulation found in mm. 2 and 3 of Beethoven's *Egmont* Overture

Because of the slow tempo yet rather long note values, one may well wonder exactly what the staccato marking means. How long should those half notes last? To avoid such problems, it is a good idea to be more exact when indicating the length of notes and spaces in a staccato passage unless the speed of the notes is rapid enough to make such differences negligible.

Legato Shadings

Modification of the basic legato articulation is often desired. To achieve a variety of articulations, tenuto marks (-) and dots are used along with the slurs mentioned above. Although there is not universal agreement as to the "correct" interpretation of these notations, and interpretation without regard to historical and stylistic considerations is inappropriate, the following discussion represents typical current thinking and suggests usage that is practiced at this time.

The tenuto mark applied to a note in isolation is generally understood to add a stress to that note and often to extend the length of the note. When placed over a series of notes, all of which are under a slur, tenuto marks indicate that the phrase is to be played legato, that is, as connected articulation in which each note is slightly stressed but no discernible separation is heard between notes. Often the tongue is used to produce the stress, but due to the soft, quick stroke involved it may not be perceivable, and for this reason the articulation is sometimes called *legato tonguing*.

The dot, traditionally associated with staccato as discussed above, may be understood to represent an implication of separation in articulation. Another type of legato tonguing often used is indicated by notes with staccato-type dots, but placed under a slur. This is usually understood to mean a legato articulation in which each note is gently tongued with a short but perceptible space between the notes and no special stress associated with the tongue stroke. This articulation is more separated than normal legato, but not as separated as nonlegato.

Between these last two types of legato tonguings is a third type that is notated with a line and a dot under a slur. This interpretive marking calls for both the delicate stress associated with the tenuto mark and the separation associated with the dot, but a little less of each.



EXAMPLE 3.4. (a) legato tonguing with some stress, but no separation (b) legato tonguing, with some stress and some separation (c) legato tonguing, with no stress but perceptible separation

Nonlegato Shadings

The tenuto mark and the dot used together are also employed to obtain shadings of nonlegato articulations. As mentioned above, the tenuto mark indicates that a note is to be stressed and at times lengthened. Therefore, when viewed as an articulation, the tenuto mark calls for a note to be more stressed and longer than a simple nonlegato note. But it is also to be clearly tongued and separated in keeping with its nonlegato character.

Adding the dot emphasizes the separateness of this stressed nonlegato by increasing the space between the notes. This produces a note that is almost as short as staccato but more weighty.

Staccato Shadings

The only shading that is usually associated with staccato is staccatissimo. The indication is the use of a wedge (∇) over the note. This is interpreted to be a shorter note than the normal staccato, but neither more nor less accented or stressed.



EXAMPLE 3.5. (a) stressed nonlegato (b) stressed and separated nonlegato (c) staccatissimo

So that the relationships between and among these various articulations may be more easily seen, the following chart is provided. Remember that not all performers and conductors will agree with all of the details of this chart, but it does generally reflect current practice.



EXAMPLE 3.6. A chart of various wind articulations

In studying symbols used for wind articulations it must be remembered that many composers who were violinists or pianists have simply used string bowing symbols or piano articulation symbols for wind parts. Under these circumstances, other interpretations than the ones given in Example 3.6 will be appropriate. One especially troublesome symbol for the wind performer is illustrated in Example 3.7.



EXAMPLE 3.7. (a) an often encountered notation (b) and (c) two different performance possibilities for that notation

Since either (b) or (c) are equally plausible interpretations of notation (a), the orchestrator is advised to avoid (a) entirely and to use one of the other two instead, depending on the effect desired. Ambiguity will thus be eliminated. It is always advisable to apply only wind articulation conventions to wind music and to avoid string or keyboard symbols altogether.

Other Tonguings

Double and Triple Tonguing

The discussion of articulations has up to this point dealt only with single tonguing techniques. Double and triple tonguing are also commonly available but may be assumed to be standard only on flutes and brass instruments. Double and triple tonguing are possible on all winds and can be assumed to be available from all professional wind players.

Double and triple tonguing take advantage of the fact that to create a fresh attack, one only needs to interrupt the air column. To accomplish this it is not always necessary to use the tongue position represented by the syllable "ta,"

that is, putting the tongue against the back of the teeth. Any means of interrupting the air column will do. Thus, the articulation of either "ta" or "ka" will create the effect of a note being tongued. Double tonguing consists of the syllable sequence of (approximately) ta-ka-ta-ka-etc. and triple tonguing consists of either ta-ka-ta, ta-ka-ta, etc., or ka-ta-ka, ka-ta-ka, or more commonly, ta-ta-ka, ta-ta-ka.

The choice of whether to single, double, or triple tongue is usually left to the performer. Accomplished performers can execute either technique at almost any tempo and will choose to use one or the other (or neither) according to the musical requirements of the passage. If the composer-orchestrator wishes to specify that a passage be double or triple tongued, it is a simple matter of writing such an instruction into the part.

Flutter Tonguing

Flutter tonguing is possible on all wind instruments, although it is a more common technique for the brasses, flutes, and saxophones than it is for the clarinets and double reeds. In flutter tonguing, the performer allows the tongue to vibrate much as a rolled "r" is produced in some languages or as children sometimes imitate the sound of a machine gun.² It is difficult for less experienced players to do a flutter-tongued passage at softer dynamic levels or in the extremes of the ranges of the instruments (either high or low). But the use of this articulation at soft dynamics or range extremes should not be considered impossible. The difficulties encountered at these extremes are more noticeable at the start of a flutter-tongued passage, but become less so as the passage continues. Therefore, an attack at a *forte* level of a flutter-tongued note may be followed by a diminuendo to *pianissimo* and still be very playable even for younger musicians, while the opposite could be quite difficult. In fact, for less skilled players, an attack at a *pianissimo* dynamic may preclude the performer from initiating the flutter-tongued roll.

Slap Tonguing

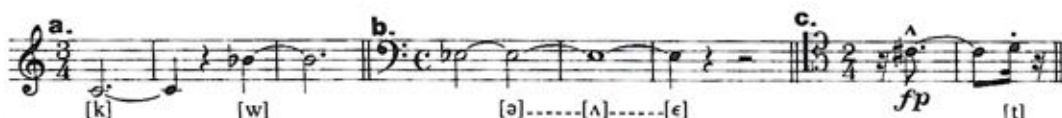
If the performer repositions the tongue against the teeth or the reed to stop the air flow, a rather hard release is created. Common practice instruction suggests that except for the double reeds, this is not an acceptable practice. However, the performer may be asked to produce this effect, even exaggerate it so that the release is especially hard and audible, to create an effect known as slap tonguing. The instruction to the performer would be simply *slap tongued*.

Special Attacks and Alterations to Sustained Tones

The wind instrumentalists regularly modify their attacks by the use of various phonemes on the attack rather than the traditional "ta" or "tu." Among these alternative phonemes are "da" or "du," which are commonly used to produce tongued legatos and nonaccented attacks. Other consonants may be called for on the attack, such as "tsch" or "k" to produce altered attack envelopes. These special attacks are most effective on the flute, somewhat effective on the saxophones and brasses, and rather less effective on the other winds, where the effect becomes subtle.

² Some performers produce the flutter tonguing roll in the throat. Other performers may not be able to flutter tongue at all.

A performer usually attempts to keep the throat and mouth as unobstructed and as open as possible while sustaining a note on a wind instrument, so as to insure a tone quality that is free, rich, and warm. However, alteration of the size and shape of the oral cavity and modification of the placement of the tongue during the steady tone can significantly change the quality, producing nasal, buzzy, or stuffy versions of the tone. To accomplish this, the performer changes the shape of the mouth by adjusting the position of the jaw, cheeks, and tongue, as though to produce different vowels but *without* voicing them. Similarly, the addition of consonant sounds to the end of a tone can produce varying, nonstandard releases.³



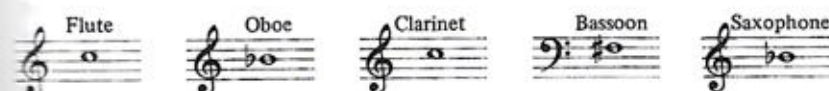
EXAMPLE 3.8. (a) consonants added to attack (b) changing oral cavity during performance of a sustained pitch (c) adding consonant to release

SPECIAL WOODWIND EFFECTS AND DEVICES

Harmonics

All woodwind instruments can produce higher pitches that are partials found in the harmonic series associated with pitches fingered within the lowest register of the instrument. The production of these partials is facilitated by the use of vent holes, register holes, or octave holes built into the instrument and the pitches thus produced are often incorporated into the keying system of the instrument.

When one of these partials is produced by controlling the air column and the embouchure and without the use of the venting, register, or octave holes, a washed-out, transparent note is produced. The result is called a *harmonic*. Harmonics are called for in flute and oboe parts quite frequently, less often in clarinet and bassoon parts. Saxophonists regularly use harmonics to extend the upward range of the instrument. The notation is a small circle (°) over the affected pitch(es).



EXAMPLE 3.9. Harmonics are producible on and above the written pitches shown here

Vibrato

Vibrato is possible on all of the woodwinds and to varying degrees is a standard aspect of woodwind tone quality. There are three types of vibrato commonly produced:

³ To avoid ambiguity, one should use symbols from the International Phonetic Alphabet (given in appendix 11). Since most wind players will not know this alphabet, instructions explaining the meaning of the symbols must be included.

1. *Diaphragmatic vibrato* is produced by a pulsation of the air column controlled by the player's diaphragm.
2. *Jaw vibrato* is produced by tightening and loosening the embouchure around the reed as controlled by the jaw.
3. *Mechanical (or instrument) vibrato* produced by repeatedly moving the instrument as it is played, producing a constant disturbance of the air column.

Of these three types, one is more likely to hear a diaphragmatic vibrato used on the flute while a jaw vibrato is used by saxophonists. The mechanical vibrato has been traditionally held to be inferior to the other two, but it does provide an alternative sound quality that can be either subtle or extremely rough and erratic as desired.

One may specify not only what type of vibrato is wanted, but also the speed and depth of the vibrato (see p. 40). If not specified the decision to use or not use vibrato and the type of vibrato used will be left up to the performer. The composer is also warned that not all performers can execute the diaphragmatic vibrato—not even all flutists.

The instruction to cancel vibrato is “no vibrato” or *non vibrato*.

Glissandos

There are two common, and often coexistent, means of producing woodwind glissandos. These are:

1. Inflecting the pitch by altering the embouchure and air column while changing the fingerings chromatically. The speed at which the fingers change depends upon the speed of the glissando.
2. Moving the reed into or out of the mouth, with or without altering the air column or embouchure. (On the flute, a rotation of the embouchure hole toward or away from the player's lips will produce a similar pitch change.)

Of these two types, the former is usable over a wide range, even the entire compass of the instrument, and may be performed rapidly or slowly, ascending or descending. (Ascending is usually considered to be easier.) A famous example is the clarinet solo at the beginning of Gershwin's *Rhapsody in Blue*.

The second type of glissando is more limited in range, usually covering less than a major second. It may, however, be employed at the beginning and the end of a wider glissando to smooth out the execution. This second type may also be used to produce microtonal inflections (see pp. 141–42).

For additional discussion of glissandos and notation, see pp. 38–39, 136–38.

Flute Effects

Breath tones are produced by broadening the stream of air, thereby losing the normal focus of the tone. The effect is a subtle timbre modification that increases the white noise component of the tone. The result is a masked, wispy tone quality that seems to have no clear physical location in the environment.

Whistle tones are extremely delicate, pure, and quite soft notes produced by

the performer barely directing a small stream of air into the flute. The sound is somewhat like a person whistling *sotto voce* between the teeth. Not all flutists have developed the ability to achieve these sounds. The dynamic level is limited to *piano* and softer.



EXAMPLE 3.10. (a) traditional notation for a breath tone (b) an alternative notation, which would require an explanation in the part

The head joint on all flutes and almost all piccolos is removable, and if the performer plays on the head joint alone, a rather uncontrolled tone is produced. If a dowel rod or similar device (drumstick, performer's finger, etc.) is placed into the open end of the head joint, the pitch of the tone can be controlled. As the device is moved into the head joint, toward the embouchure hole, the pitch is raised; as the device is removed, the pitch is lowered. This effect is very much like a slide whistle.

Double-Reed Effects

One of the woodwind effects that is unique to the double reeds is the *smack tone*, which can be produced by sucking on the reed in a very noisy manner. The effect may be achieved on various pitches throughout the range of the instrument.



EXAMPLE 3.11. Recommended smack tone notation. An explanation in the part will be required

The player of a double-reed instrument may remove the reed and play on it alone (the bocal to which it is attached may be removed with it). A variety of squawks can be produced this way, and by cupping the performer's hands around the reed or bocal, and changing the amount of opening and the size of the cup formed by the hands, modification in the tone of the reed may be produced. The pitch range and dynamic range of the reeds are rather limited; the larger reeds produce lower but not necessarily louder sounds. On occasion, the double reeds have been attached to other instruments such as horns or trombones, often with special apparatus in order to assure a good joint between the reed and the instrument. The buzzing reeds will, of course, produce the characteristic double-reed squawk tone, but the amplification and filtering produced by the attached instrument will create an entirely new timbre.

Single-Reed Effects

Subtones are playable on both the clarinet and the saxophone. These are very easily produced in the lower register and are often used as a means of achieving required *pianissimos*. However, these represent such an extremely soft sound

range that subtones are more often treated in modern music as special timbral effects. They can be easily covered, so careful scoring is required. To obtain these soft tones, *sub tone*, *mezzo voce*, or *sotto voce* should be written in the part.

In much the same manner as the detachable reed (or reed and bocal) of the double reeds, the mouthpiece and reed can be removed from the clarinet or saxophone and played by itself. Again, the hands may be cupped around the open end of the mouthpiece to modify the tone and pitch. The mouthpiece may also be attached to another instrument to produce special effects. (One such is the attachment of a clarinet or saxophone mouthpiece to a trombone and buzzing the reed while moving the slide. The effect is somewhat like the roar of a propeller-driven airplane.)

The opposite effect, in some respects, is the buzzing of the lips on the barrel of the clarinet after the mouthpiece has been removed. The buzzing, just like the lip buzzing of brass players, transforms the clarinet into a strange "keyed-bugle" device that can play partials like a brass instrument (see appendix 7) and have its length altered like a woodwind. The same technique could be applied to the saxophones or flutes. With the saxophones (or flutes with the headjoint removed) a modification of the opening of the tubing would be required to keep the performer's lips from being cut. The use of a regular or modified brass instrument mouthpiece suggests itself and leads to other ideas (such as the attachment of a brass mouthpiece to an oboe or bassoon, etc.). There is probably no end to the possible special effects one could develop.

The reassembly of standard woodwind instruments into different configurations may or may not be a special effect. Almost every young clarinetist must have at some time assembled and played the instrument without the upper (left-hand) section. This produces a sort of piccolo clarinet producing a strange scale. The device has been used in improvisations, and could find other uses.