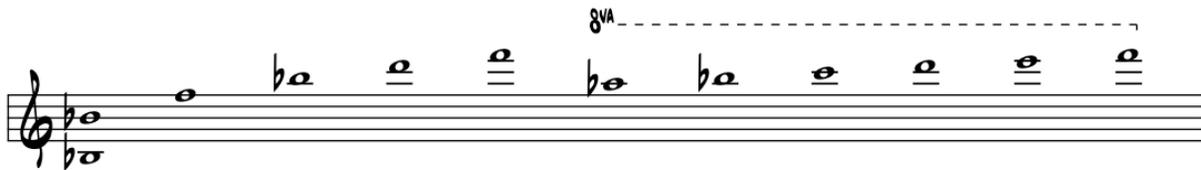


Altissimo Development, Part 1: The Overtone Series

Due to the great performers and composers who successfully used and incorporated the altissimo range of the saxophone in the past, its use has become an integral part of saxophone performance today. Whether playing classical, jazz, or commercial music, performers, as well as composers, use the altissimo interchangeably with the normal range of the saxophone, without hesitation. Fortunately, the acoustical make up of the saxophone readily lends itself for the production of this above normal range. However, in order to produce the altissimo consistently with a good tone and good intonation, a daily routine of exercises coupled with an understanding of its production will often lead to better accuracy and control of this technique. The following will outline some possible ways to cultivate the altissimo range using exercises for its development.

The first step in developing the altissimo range begins with the production of overtones. Overtone are notes in a harmonic series that compose the sound of a fundamental tone (the overtone with the lowest frequency) and can be heard, in varying degrees, when the fundamental tone is being produced (see Example 1).

Example 1: Overtones on low B-flat



Because the acoustical description of the saxophone is a conical open pipe, the saxophone tone is not only composed of a full compliment of overtones but it is also more apt to produce these overtones when overblown compared to other wind instruments such as the clarinet, which is a cylindrical closed pipe. By practicing overtone exercises, the saxophonist is developing the tonal (i.e., pitch and intervallic relationships) and muscular memory (i.e., facial and oral cavity positioning of the muscles) needed to produce the approximate position of the embouchure and oral cavity during the production of the altissimo register as well as becoming acquainted with the composition of one's sound. The following exercises are based upon overtone production on the saxophone. Before attempting to produce these overtone exercises, it is important that the saxophonist has a well-established embouchure with a good control of the air stream. Since the following exercises require some slight deviations of embouchure from the norm, attempts to play these exercises without the proper fundamental preparation could hinder rather than help.

Begin by playing the low Bb at the beginning of Example 2, and then, without the saxophone, sing the remaining pitches slowly (all of these exercises are meant to be played slowly and sustained at this point in the development so as to properly develop the muscles). Although some of the pitches may be out of your normal voice range, try to sing each pitch in unison (i.e., use falsetto when needed) with the pitch that is written. While singing these pitches try to remember the various positions of the throat and

tongue for each note as well as the sound of each note (this is the first step in developing tonal and muscular memory). Once you can sing these pitches, play each pitch with the normal fingering while assimilating the sound and muscular position of each note. Next, play the exercise by maintaining the low Bb fingering throughout while producing the other notes (without the use of the octave key) and imitating the sounds as well as the muscular positions as previously discussed. Ideally, overtone exercises should be played either slurred or legato, however, a slight breath articulation before each note may be helpful in allowing the notes to speak at first until one becomes fluent with the necessary adjustments for overtone production. As you play each note of the overtone series, more air pressure as well as a slight motion of the jaw forward in order to expose more reed may be needed for the notes to sound. Also, remember that in order for the production of these overtones and subsequent altissimo to be successful, the reed will need to vibrate quickly and freely. Therefore, the air speed should increase, not necessarily the volume, and the embouchure, although firm, must not become tense so as to allow for maximum vibration of the reed. A firm but flexible reed and mouthpiece combination (no softer than a medium reed strength with a medium facing mouthpiece) will also help facilitate the production of these overtones in the early stages. Repeat the exercise on low B, C, and C# (see Example 2).

Example 2

The musical notation for Example 2 consists of four staves, each in a treble clef with a key signature of one flat (Bb). The first staff starts at measure 12 with a Bb note. The second staff starts at measure 16 with a Bb note. The third staff starts at measure 20 with a Bb note. The fourth staff starts at measure 24 with a Bb note. Each staff contains three measures of music, with notes and accidentals indicating the overtone series for each fundamental note.

When you begin working on these exercises, you may find that the second overtone (the 12th) will speak immediately after the fundamental note rather than the first overtone (the octave). Usually this is the result of excessive embouchure movement or tension as well as air speed. One way to overcome this problem is to slow the air speed and play the first overtone using the fingering for the fundamental note with the octave key. Also, in order to adjust the oral cavity accordingly for this first overtone, I recommend that the saxophonist practice singing the octave relationship using the syllables "ah" for the fundamental tone and "ooh" for the octave. These syllables seem to approximate the appropriate motion of the oral cavity for this overtone relationship. The "ooh" syllable for the octave brings the tongue back and arched slightly and will

become more obvious as you ascend the harmonic series. Once the first overtone speaks, practice Example 2 again without the use of the octave key.

Upon successful completion of the exercises in Example 2, continue with the exercises in Example 3. Remember the following points as you play these exercises: (1) sing through the exercise to assimilate the motion and position of the muscles used to produce each note as well as internalize the sound of each note; (2) increase the air speed slightly for each subsequent overtone; (3) move the jaw slightly forward to increase reed exposure in the mouth; (4) imitate the singing position of the oral cavity for each note while playing; (5) as the notes ascend the tongue should be brought back and arched slightly (this will be automatic if points 1 & 4 are successful); (6) maintain a steady air stream throughout the exercise; (7) even though the exercises will seem tedious and unproductive at first, be patient. Other overtone exercises may be found in *Saxophone High Tones* by Eugene Rousseau, *Saxophone Altissimo* by Robert Luckey, and *Top Tones for the Saxophone* by Sigurd Rascher, to name a few.

Example 3

The image shows four staves of musical notation for Example 3. Each staff begins with a treble clef and a key signature of one flat (B-flat). The notes are as follows:

- Staff 1: B-flat, D-flat, F, A, B-flat, D-flat.
- Staff 2: G, B-flat, D, F, A, B-flat.
- Staff 3: G, B-flat, D, F, A, B-flat.
- Staff 4: B-flat, D, F, A, B-flat, D.

Although overtone exercises may not guarantee altissimo production for everyone, they will provide the saxophonist with a firm foundation for tonal development that can lead to better altissimo control and consistency.

Altissimo Development: Part 2

Part 1 discussed the saxophone's overtone series and its use in developing the altissimo range. Part 2 will present some exercises to help develop the saxophonist's facility in the altissimo range as well as address some typical problems that one comes across when expanding the range upwards.

Over the Break

Once you have worked on various overtone exercises to develop your tonal (pitch) and muscular (embouchure & oral cavity configuration) memory, as discussed in part 1, you should begin to learn and internalize fingerings that will assist in altissimo production. The first altissimo fingerings to be learned will be the bridge notes to the altissimo or *over the break notes*. Over the break in the normal saxophone range is often associated with the awkward finger motion between the middle register (i.e., G to C#) to any note that opens the lower vent key, such as notes from D to G#. For the altissimo, over the break is the motion from notes in the upper range to the auxiliary or front fingerings for high E, F, and F#. When high E, F, and F# are produced with the palm keys they are considered to be in the normal range, however, when fingered with the front keys these notes are considered to be in the altissimo range because they are overtones. Therefore, mastering the production of these notes with the front fingerings not only allow the saxophonist to begin to learn altissimo fingerings that are similar to some standard fingerings, but also introduce the saxophonist to overtones that are accessible in their production because they can be easily matched with their counterparts in the normal range.

Begin over the break practice with exercises that are typical of front fingering applications and then work on exercises that use more awkward finger motion, such as high D and D# to the front keys as in Example 1 (even though your saxophone may have a high F# key, use the front fingering for the overtone practice).

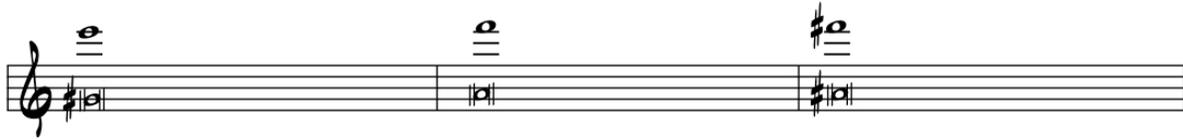
Example 1



If you have problems producing any of the front fingerings (e.g., usually front F speaks quicker than front E), I recommend practicing these overtone fingerings with the front F key or LSK 3 (left side key 3) slightly open (the LSK 3 venting for the front fingerings works best on alto saxophone but may also be used for tenor, while RSK 3 is used as a vent for soprano and RSK 1 is used as a vent for baritone). By placing a small paper clip or a small piece of an index card between the upper portion of the high F key pad and its tone hole, you can vent the saxophone slightly and create better stability for producing the notes that use the front fingerings. Example 2 presents the front fingerings to be used for alto saxophone when practicing these notes with the LSK 3 key slightly vented. Assimilate the formation of the muscles of the embouchure and oral cavity as you produce the notes using the front fingerings with the LSK 3 slightly vented. Once you are able to produce these notes with a good tone consistently, remove the venting device and attempt to produce the front fingerings without it. Try to recall the

muscular position of your embouchure and oral cavity with the venting device in LSK 3 when producing these notes.

Example 2



Practice Examples 1 again striving for smooth and connected transitions between notes once you can produce the front fingerings without venting assistance. It is imperative for the saxophonist to feel comfortable in producing these notes and negotiating fingerings within this range in order to properly continue development in the altissimo. For a detailed discussion of venting and front fingerings as well as the technique of over-blowing sixths for all members of the saxophone family, I recommend Eugene Rousseau's *Saxophone High Tones*.

Extending the Range

Work on extending the range upwards after you gain confidence and control with the *over the break notes*. Development of the tone and technique in the altissimo is not unlike the development of the tone and technique in the normal range. Slow and careful practice of scales and arpeggios is usually a good place to start for extending the altissimo range. Example 3 presents an exercise that may be used to extend the range. Although only a few keys are presented, practice this exercise in all keys until you reach the extent of your range.

Example 3



Also, another exercise in developing your facility and accuracy in the upper range is to play short, beginner-type melodies (see Example 4). Because of their familiarity and technical simplicity, short beginner melodies will help facilitate muscular and tonal memory needed for proper execution. Please refer to Rousseau's *Saxophone High Tones*, Robert Luckey's *Saxophone Altissimo*, and Sigurd Rascher's *Top Tones* for additional fingering suggestions.

Example 4



Helpful Hints

Below is a list of helpful hints and reminders when practicing and developing the altissimo.

1. Sing through all exercises to assimilate the motion and position of the muscles used to produce each note as well as internalize the sound of each note.
2. Practice with a metronome as well as a tuner as much as possible for the development of finger and pitch accuracy.
3. Work on moving fingers from note to note quickly and accurately so as not to disrupt the air-flow.
4. At first, begin altissimo notes with a breath articulation (a motion similar to the production of the syllable herr) as well as play all exercises slurred and without vibrato in order to develop the proper muscular positioning of the embouchure and oral cavity. Begin to articulate with the tongue in a drawn back and higher position in the mouth than usual, a position that is more as in the imitation of the syllable derr or dee, as you gain more control.
5. As you extend the range higher, increase the air speed slightly and move the jaw slightly forward to increase reed exposure in the mouth.
6. If you plan to perform altissimo notes regularly, then you should practice both overtone and scale exercises daily to insure consistency in their performance.
7. Try to practice your altissimo range to at least a semitone above your anticipated performance range. If you can play a semitone above your performance range while practicing, then in all probability you will be able to play your performance range securely.
8. When practicing demanding altissimo passages (i.e., wide intervals or slurred passages), record yourself playing the passage down an octave as you would normally perform it musically and technically, then play the passage along with your recording as written while imitating all musical nuances and technical manipulations.

Remember, developing the altissimo is almost like learning a new instrument. Be patient and work slowly because there is more to learning this range than the correct fingerings.