

## Altissimo Demystified

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by

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The most common question that saxophone teachers undoubtedly receive from their students is, “how do I play the really high notes?” I learned altissimo (any notes above palm-key F-sharp) from a variety of different sources – books, teachers, trial and error, as well as sheer willpower and determination! The elements listed below are a compendium of my learning in this area and should be helpful to develop a truly proficient ability in the altissimo register.

The first criteria is the need for flexibility in the oral cavity. Many students do not have any idea about what is actually happening inside their mouths and throats to produce a sound in the normal register, let alone in the altissimo register. As most success in the altissimo register depends on tongue and glottal position, jaw pressure, and the degree of raising or lowering the corners of the mouth, it is imperative that students become aware of the many different elements that define oral cavity flexibility.

Generally speaking, a good embouchure should be firm but not tight. On a scale from 1-10 (with 1 being very loose, and 10 being very tight) a classical saxophone embouchure will be between a seven and eight, and a jazz embouchure between six and seven. A high-tongue position (such as an “eeeeee” voicing) is to be encouraged, as this is the main way in which saxophonists can control air speed and pressure. The degree to which the back of the tongue is raised serves to pressurize the air, resulting in an optimum air speed which produces a well-focused sound. A low-tongue position (such as an “aaaaaah” voicing) will produce a slow air speed, resulting in weak response, poor intonation, and an under-supported sound. This back-of-the-tongue aspect is a critical element; most intonation aspects are directly related to this area. It is also important to note that jazz saxophonists typically have a slightly lower tongue position, mostly due to reed/mouthpiece (set-up) differences, as well as the need to be flexible in terms of tone color and timbre.

Another element of successful altissimo performance is a thinner cushion. This concept concerns the amount of lower lip present against the reed. Slightly reducing the amount of lower lip against the reed will allow for more vibration, which will in turn allow for easier production of the altissimo register.

## Mouthpiece Exercises

A beneficial beginning exercise involves playing the mouthpiece by itself, requiring the saxophonist to manipulate the pitch with embouchure alone. On alto saxophone, I find that many classical (alto) students are naturally inclined to match somewhere in the B-flat to C range on the piano above middle C (plus one octave), with jazz students typically sounding between an F to a G. Many modern players have slightly lower or higher variations on this. At a recent North American Saxophone Alliance event where this topic was inevitably brought up, there were almost as many opinions as there were players. The general agreement, however, was that for an alto saxophonist, matching somewhere between a G-sharp and C on the piano (and between F-sharp and A for tenor saxophonists) is a good goal.

### Exercise 1

Produce a pitch on the mouthpiece (using the pitch of B for this example) and hold it steady with an unwavering intonation. In the manner of saying “eeeeee” to “aaaaaah” (similar to yawning) and lowering your jaw, corners, and tongue position, move the pitch down in a *glissando*-like fashion as far as you can go. A good initial goal is to produce a drop of a fourth. Check with a tuner or match with a piano that you are accurate on pitches. Ideally, you will be able to glissando at least an interval of a fourth much like a trombonist can achieve with his slide. (If your note is a B-flat, just transpose all examples down a half-step.)

(Piano pitches to match)

**Mouthpiece Flexibility Exercise #1**

The next step in developing flexibility is to become more specific in defining the intervals within the perfect fourth just attained. With the starting note again being a B for this example, use B as a pedal to measure the other half-steps down to F-sharp. Be sure to be as accurate as possible intonation-wise on all notes, and do not use the glissando technique; try to move immediately to the next goal note. When you have mastered the fourth, challenge yourself to go as far as an octave!

(Piano pitches to match)

**Mouthpiece Flexibility Exercise #2**

By using these two exercises, students will become much more aware of the role their oral cavity plays in defining pitch in the normal register. This is critical when it comes to accurately producing the notes in the altissimo register. Rare is the student that can simply put down the special high-note fingerings and accurately produce altissimo register notes without some form of flexibility development.

I also encourage my students to try this with the full saxophone. In his book *Voicing: An Approach to the Saxophone's Third Register*, Donald Sinta details this as the "Front-F trick", which uses the above mouthpiece concept, but with the student playing the front F (also known as the forked-F fingering). With some practice, students should be able to play descending intervals from forked high F, including a major scale to a full octave, utilizing this voicing technique.

### The Overtone Series

The overtone series is a very important aspect in producing accurate and full-sounding altissimo notes. This series of notes is a defining physical property of most instruments and will work with you to help gain accuracy in the altissimo register. All of the notes shown below are produced by holding down the low B-flat fingering, and manipulating the oral cavity.

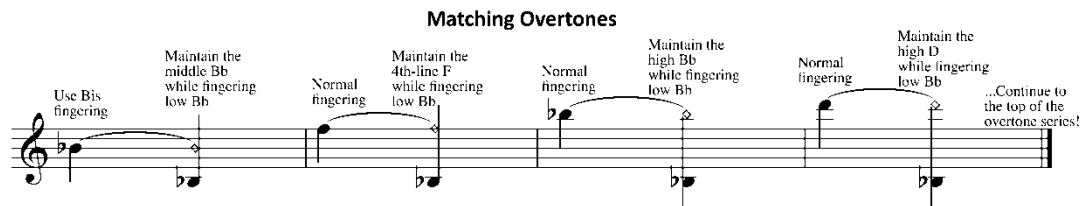


Initially, some students may have a difficult time producing many of the notes of the overtone series by simply holding down low B-flat. To increase the sophistication and control over the oral cavity, a helpful exercise is to match overtone partials with normal fingerings. As shown in the graphic below, play middle-B-flat (and then fourth-line F, high B-flat, high D, etc.) with the normal fingering, then maintain the pitch while changing your fingers to the low B-flat fingering.

Initially, the sound of the overtone-produced version of the note in question may be scratchy or even ugly. I like to use the metaphor of an old analog radio that needs to be "tuned in" more to get the station clearly—our oral cavity is the tuner on the dial! Experiment with different aspects of tongue position (typically higher or lower), jaw pressure, and the elevation of the corners of the mouth to match as closely as possible with the normal fingering.

One common problem is the overtone-produced note sounding like it is skipping, or sounding like a combination of the low B-flat and the note in question. In my experience, this is almost certainly a result of tongue and throat misalignment. These two physical elements work in conjunction to produce the desired sound; try to adjust each element separately and then together. It is likely that by fine-tuning the throat

(glottal) region as well as the degree of height of the tongue, a more refined and pleasing version of the overtone-produced note will occur.



One of my true “light-bulb” moments came while changing the direction of the overtone series. For weeks I had tried to ascend through the series with little success past the high B-flat just above the staff. In a moment of pure frustration, I held down the low B-flat fingering and tried to squeal out some high notes once and for all. The result was a terrific high D! Surprised (and pleased!) by this, I then attempted to descend the overtone series, and found that with a few small adjustments, I was able to easily lower to C, B-flat, and all the way down to the fundamental B-flat pitch. I was surprised how the top notes seemed to “lock” into place as I descended; I could actually feel the reed snap as I locked into the pitch correctly. This illustrated to me that I had been overshooting most of the partials. If the above exercise is not working for you, try reversing it.

### Voicing

Many students who encounter difficulty in producing the high D accurately usually have an incorrect tongue position. While the normal range of the instrument generally benefits from a high tongue position (such as an “eeeeee” voicing), some saxophonists find that they use a lower tongue position in the lower part of the range, and use a registral continuum from low Bb to high altissimo that correlates directly to an increase in tongue height, as well as the tongue moving forward. However, as Matt Patnode’s fluoroscopic study of voicing dissertation shows, the tongue is actually slightly lower in the altissimo register, particularly when comparing tongue position from high altissimo D to those notes closer to the natural range such as G and A.

Furthermore, Professor of Saxophone at Lawrence Conservatory (WI), Steven Jordheim recently presented (NASA Biennial Conference, 2010) an interesting lecture showing how the tongue position becomes progressively lower as the saxophonist ascends higher into the altissimo range. He used a special fiber optic camera inserted through the nose to actually film the oral cavity while ten of his students were playing full range exercises (low Bb to altissimo F). While there is no one-size-fits-all embouchure setting for the full range of the altissimo register, what is clear is that as the range gets higher, the back of the tongue becomes lower.





## Summary

The altissimo register is no longer considered an extended technique, but rather a standard one. A significant amount of the classical literature written for the saxophone includes the altissimo register. It is not a recent phenomenon but is used in works dating back to the 1930s, including concertos by Alexandre Glazounov and Jacques Ibert. Other major composers of standard literature, such as Paul Creston, Ida Gotkovsky, Takashi Yoshimatsu, Ingolf Dahl and David Maslanka (and many others) all regularly include the altissimo register in their writing as an expected skill. As shown by the early patents of Adolphe Sax, the saxophone was originally envisioned as a four-octave instrument. For this reason, it is difficult to be taken seriously as a professional saxophonist if this aspect of performance is not mastered. This is also true in the jazz and pop arenas; saxophonists such as David Sanborn, Michael Brecker, Bob Mintzer, Gerald Albright, Dave Koz, and hundreds (if not thousands) of others have regularly made the altissimo register a common aspect of their performance. To be a serious player in today's hyper-competitive environment, it is essential to develop a deep mastery of the altissimo register.

While the early stages in developing these skills can be frustrating and often ugly- sounding, this is part of the process. One of my teachers proudly stated that he knew his altissimo practice would sound terrible to those on the other side of his practice room, but he didn't care! Altissimo development can be cringe-worthy at times, but with a consistent and regular practice routine, significant progress can be made. Studying with an experienced professional is also very helpful. A diligent work ethic, coupled with patience, experimentation, and self-belief *will* provide you with all the tools you need to become proficient and skilled at the altissimo register.

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