

# Stopped Horn, Muted Horn, and More...

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Presenter: James Boldin, Assistant Professor, University of Louisiana Monroe

## I. Description

Stopped horn is an extremely effective but sometimes misunderstood technique required for the horn. Passages for stopped horn occur in nearly every genre of music for the instrument, from solos to chamber music to large ensembles such as orchestra and wind band. This presentation will present some practical methods for helping your horn players learn this technique.

Mutes and mute technique can also be problematic for young horn players. Sometimes even choosing the correct kind of mute for a given passage can be confusing, and there are usually several workable options when it comes to mutes and mute technique. Recommendations on types and brands of mutes for purchase as well as some helpful tricks when working with muted horn sections are also included.

## II. A Brief Explanation of Stopped Horn

One reason stopped horn technique is misunderstood is because of its acoustical effects. Even professional horn players and acousticians don't agree entirely on what happens when the horn is stopped. Essentially, there are two main theories when it comes to describing what happens when the hand completely covers the bell of the horn.

**Theory I** states that fully closing off the bell of the horn *lowers* the resulting pitch to *1/2 step above the next lowest harmonic*.

We can test this theory by examining the harmonic series. [All pitches are notated for Horn in F]



♭ Denotes out of tune harmonics.

According to Theory I, stopping the written third space C on the open F horn should produce a slightly flat B natural, which is 1/2 step above the slightly flat harmonic directly below it. [All pitches are notated for Horn in F]



So, stopping this pitch on the F horn



produces this pitch

Theory I holds true as long as the player allows the hand stopping motion to gradually lower the pitch of the open note.

**Theory II** states that fully stopping the horn *raises* the resulting pitch by 1/2 step, requiring that players finger pitches 1/2 step lower than written on the F horn.

According to Theory II, stopping the written third space C on the open F horn should produce a C sharp, 1/2 step above. [All pitches are notated for Horn in F]



So, stopping this pitch on the F horn

ALSO produces this pitch

Theory II holds true when the player attempts to maintain the pitch being played, resulting in the note "popping" up to the next harmonic.

**Both theories are correct!** Theory I makes sense from an acoustical perspective, since gradually closing the hand in the bell does lower the pitch. Theory II makes sense for the purposes of fingering, since we must finger pitches 1/2 step below the written note on the F horn to obtain the correct pitch. A close study of the horn's harmonic series will reveal that both theories are really the same, but each approaches the explanation differently. Using the B-flat side of the horn complicates the issue even more, because while stopped horn on the B-flat side still follows Theory I, attempting to maintain the given pitch as in Theory II raises the written pitch by 3/4 step, rather than 1/2 step. More information on B-flat stopped horn fingerings will follow in this presentation.

### III. A Practical Approach to Stopped Horn

While the above explanation may be interesting, quite often it doesn't really offer a practical solution for music educators with many things on their mind. The following should aid in helping your students to produce an acceptable stopped horn sound.

- A) Proper *open* horn hand position is a must. While hand position is always important for horn players, it becomes absolutely crucial when hand stopping. Hand positions vary among professionals, but some general characteristics of a good right hand position on the open horn are:
- 1) Fingers are bent at the knuckle and fairly straight from the knuckle to the tips of the fingers.
  - 2) The thumb is close against the side or top of the index finger, with no spaces between.
  - 3) There are no spaces between fingers.
  - 4) The palm of the right hand is slightly cupped, as if swimming freestyle or holding shampoo.

- 5) Allow the right hand to conform to the shape and size of the bell—this will result in a slightly rounded shape when the back of the hand is pressed against the far right side of the bell.
- 6) Line up the knuckle of the thumb with the bell brace, and then insert the right hand until the thumb touches the upper part of the bell and the bottom edge of the hand makes contact with the bell.

See figures 1 and 2 below for a demonstration of these concepts, with the hand in and out of the bell of the horn.

Figure 1. Proper Right Hand Formation



Figure 2. Proper Open Hand Position



B) Ideally, the move from open to stopped horn should be as efficient as possible, and should not require a drastic shift in hand position. The following ideas should be helpful in practicing stopped horn hand position. Consult Figure 3 at the end of this section for pictures of proper stopped horn hand position.

- 1) A proper stopped horn sound is compressed, brassy, and yes, even nasal. Obtaining this sound requires as leak-free a seal as possible between the right hand and the

horn's bell throat. Many of the problems players encounter when playing stopped horn (poor intonation, uncharacteristic sound, etc.) can be remedied by readjusting the hand position.

- 2) Avoid the temptation to shove the hand further into the horn bell. A hand position that is too far into the bell of the horn will cause the resulting pitches to be very sharp. This problem is much more difficult to handle for those players who have relatively small hands and horns with large bell throats. Keep the thumb pulled back and out of the way of the hand. For extra help, see No. 3 below.
- 3) Instead of attempting to "shut the door" of the hand perpendicularly across the front of the bell, try closing the bell off completely at an angle. Closing the bell at an angle decreases the area you are trying to cover, allowing for a better seal. The British horn performer and pedagogue Pip Eastop has come up with an ingenious invention to help those with smaller hands. His device is easy to make, inexpensive, and, in my experience, really does work. The trick is getting your students to take the 30 minutes or so it requires to make this little device. A full description and details on making the device can be found online at:

<http://www.pyp.f2s.com/framesets/inventionsframeset.htm>

- 4) Strive for as much contact as possible between the heel of the hand and the bell throat. Remember, we want to eliminate as many leaks as possible. Having students imagine that they are squeezing the horn between their left and right hands is sometimes helpful in getting a proper seal. For those with bony hands, *slightly* twisting the heel of the palm so that even more flesh is in contact with the bell can help.
- 5) Another issue when playing stopped horn is the dramatic increase in resistance that fully covering the bell causes. Frequently students simply are not blowing assertively enough against the resistance to get the "buzz" that composers want when they ask for stopped horn. Filling out the sound of stopped notes will also help with intonation and articulation problems. The exercises included with this presentation are designed to help players work on this facet of stopped horn technique.

Figure 3. Stopped Horn Hand Position



List of Terms/Symbols that Denote Stopped Horn

+      *stopped*      *gestopft*      *bouché*      *chiuso*

**IV. Suggested Stopped Horn Fingerings**

Players should generally be fine to use *F horn* fingerings and transpose down 1/2 step within the following range. Given that the above factors are properly addressed, this range presents the least problems of intonation and articulation.



For the high register, F horn fingerings will work, but problems of accuracy and intonation become more exaggerated. For this range, try using the following fingerings.



B - T13 [T=thumb valve]  
 C - T23  
 C# - T12  
 D - T1  
 D# - T2  
 E - T  
 (Transpose  
 1/2 step up  
 on B-flat side.)

F - T3  
 F# - T23  
 G - T3  
 G# - T1  
 A - T2  
 A# - T  
 (Transpose 1 whole step  
 up on B-flat side.)

B - T1  
 C - T2  
 (Transpose 1/2 step down  
 on B-flat side.)

\*While these fingerings will work on many horns for many players, encourage your students to try alternate fingerings. The only rule one need follow when deciding on alternate fingerings is "if it sounds right, it is right." If the intonation and sound quality are good, then it doesn't matter what fingering is used.

The low register as shown below often presents the greatest difficulties on stopped horn, with articulation and intonation being the most acute problems.



Although I do recommend that students learn to play in this range without the aid of a transposing stop mute, more and more professional players are using the stop mute. These mutes create a louder, more stable stopped sound, and are relatively inexpensive. They also require that players transpose the written pitches down 1/2 step to obtain the proper F horn fingerings. Be aware though that a hand-stopped sound is different from that of a metal stop mute. Although stop mutes and hand muting can be compatible within a section, avoid mixing stopped horn and straight mute timbres unless this combination is specifically requested by the composer.

One final thought on working with stopped horn sections. When rehearsing stopped horn passages it is a good idea to let your players perform the part open at least a few times so that they can get a better sense of pitch and articulation before attempting to play the part stopped. Once they do play the part stopped, encourage them to really blow so that they can experience the sensation of producing a compressed, brassy sound.

## V. Stopped Horn Exercises

These exercises are designed to help beginning to intermediate players familiarize themselves with stopped horn technique. If practiced daily, they can help establish a solid foundation for more advanced stopped horn effects. Simplicity is the goal in these brief passages, and they progress from easy to difficult techniques. Encourage your students to perform these exercises with a tuner and metronome whenever possible. Here are some helpful hints to bear in mind.

- 1) Check intonation frequently with a tuner or drone. Compare intonation from stopped to open positions.
- 2) Insist upon a brassy, compact, and nasal stopped sound. Producing this sound quality, especially in the lower register, will require huge amounts of air!
- 3) Check hand position frequently to check for air leaks.
- 4) Rely solely on the ear for pitch accuracy at first, until muscle memory is developed.
- 5) Take frequent breaks until endurance is developed.

**Exercise 1. Stopped Horn Basics: Hand Position and Middle Register Articulation/Intonation**

♩=60

open (F-0) check stopped hand position (F-2) open check stopped hand position

*p* *ff* *p* *ff* *p* *ff*

(F-0) open (T-12) (F-23) open (T-1)

*p* *ff* *p* *ff* *p* *ff* *p* *ff*

(F-12) open (T-2) (F-1 or T-13)

*p* *ff* *p* *ff* *p* *ff*

open (T-0) (F-2 or T-23) open (T-23) (F-0 or T-12)

*p* *ff* *p* *ff* *p* *ff* *p* *ff*

(Continue into upper register if desired.)

**Exercise 2. More Rapid Articulations**

♩=72

open (F-2) open (F-0) open (F-23)

*mf* *mf* *mf*

(Continue into upper/lower register if desired.)

**Exercise 3. Stopped/Open Horn Coordination and Upper Register Practice**

open (F-2 or T-23) open (T-1) open

(T-0) open (T-23) open (T-3)

**Exercise 4. Low Register Practice**

**Exercise 5. Developing Musicality** Yes, stopped horn can be musical! Practice this well known tune on open horn first, then stopped horn. Strive to create as "beautiful" a stopped horn sound as possible, with all the correct phrasing and nuances required by the music.

**VI. Tips for Using Horn Mutes**

Fortunately, mutes present much less of a problem than hand stopping. The major issue with younger players is having access to a quality mute and understanding a few basic concepts of muted horn technique.

**Equipment Recommendations**

Humes and Berg "Stonelined" straight mute Model 121--average retail price \$20 (decent in the middle range, but difficult to control in the low range)

Humes and Berg "Stonelined" straight tunable mute Model 134--average retail price \$40 (a much better buy, and you won't be disappointed if your horn players ever need mutes)

If you are interested in investing more in a mute, the following makes are more expensive, but of a truly professional quality.

- |                |            |          |
|----------------|------------|----------|
| Trumcor        | Lewis      | Engemman |
| Ion Balu Mutes | Denis Wick |          |

### **Some Basics of Mute Technique**

- 1) Avoid seating the mute too tightly in the bell of the horn. The mute only needs to be snug; shoving the mute too far into the bell can cause all sorts of articulation and intonation difficulties; an overly-tight mute also makes mute changes more difficult.
- 2) As with stopped horn, students simply need to become more comfortable with the sound of a muted horn. All of the above stopped horn exercises can easily be adapted to muted horn practice.
- 3) For quick mute changes, a wrist strap is extremely helpful. If the mutes your students are using don't come with a wrist strap, you can easily make one using an eye hook and some sturdy string.
- 4) In circumstances where extremely fast mute changes are requested, the mute itself can be left far enough out of the bell that it approximates an open horn sound. In effect the mute is performing the same function as the hand. When the muted section is reached, the mute can be easily inserted into the bell without having to scramble.

### **VIII. Selected Additional Resources**

- Ericson, John. "Suggested Horns, Mouthpieces, and Mutes." *Horn Articles Online*.  
<[http://www.public.asu.edu/~jqerics/sug\\_hnmp.htm](http://www.public.asu.edu/~jqerics/sug_hnmp.htm)>.
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- Matlick, Eldon. "Solving Horn Mysteries." *The Instrumentalist* 48, no. 9 (April 1994): 34-49.
- Reynolds, Verne. *The Horn Handbook*. Portland, OR: Amadeus Press, 1997.
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