Louisiana Music Educators Association

Simplifying the Bassoon: It is Not as Difficult as You Think

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9:00am-9:50am

I. Acoustic properties of the bassoon.

A. Like oboe and saxophone, the bassoon is a straight sided cone.

B. Like other woodwind instruments, opening and closing holes lengthens and shortens the tube.

C. XXX XXX is the note G2. XXX XXO is A2 for example.

D. Before Boehm, accidentals were played with "cross" fingerings. XOX OOO is Eb for example.

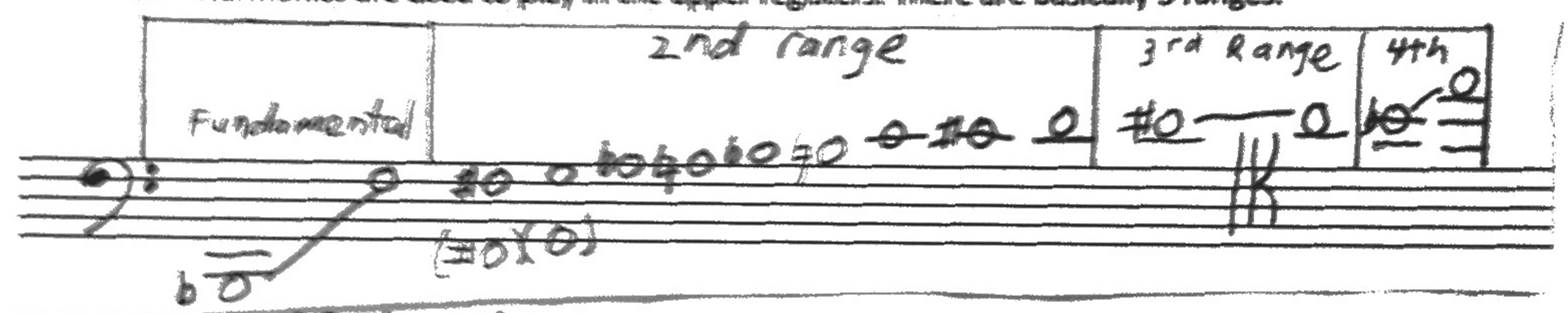
E. All "cross" fingerings have an unstable pitch. We close or open additional holes to stabilize them.

F. Keys were invented to either lengthen the reach of the human hand, or to avoid "cross" fingerings.

G. 2 types of keys, they have opposite purposes.

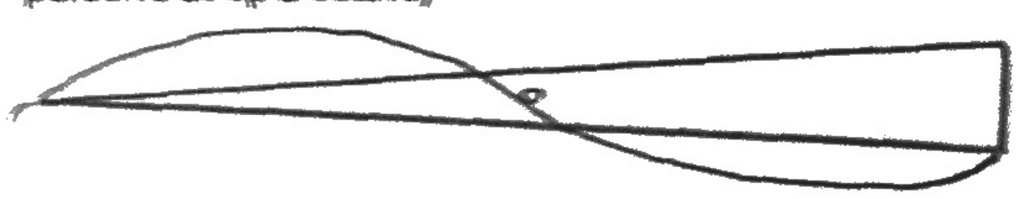
1. Statically open keys when pushed lengthen the tube
2. Statically closed keys when pushed shorten the tube.
3. Keep in mind that some closed keys have the purpose of facilitating trills. Many trill keys avoid trilling over the "break."

H. Harmonics are used to play in the upper registers. There are basically 3 ranges.



1. Fundamental range

2. 2nd range(1st set of harmonics) breaks air column in 2s causing frequency to double (we perceive as up 1 octave)



(The bassoon is the only woodwind instrument that still uses the left hand 1st finger to vent harmonics).

3. 3rd range (2nd set of harmonics) breaks air column in 3s causing frequency to triple (we perceive as up 1 octave plus a perfect 5th).

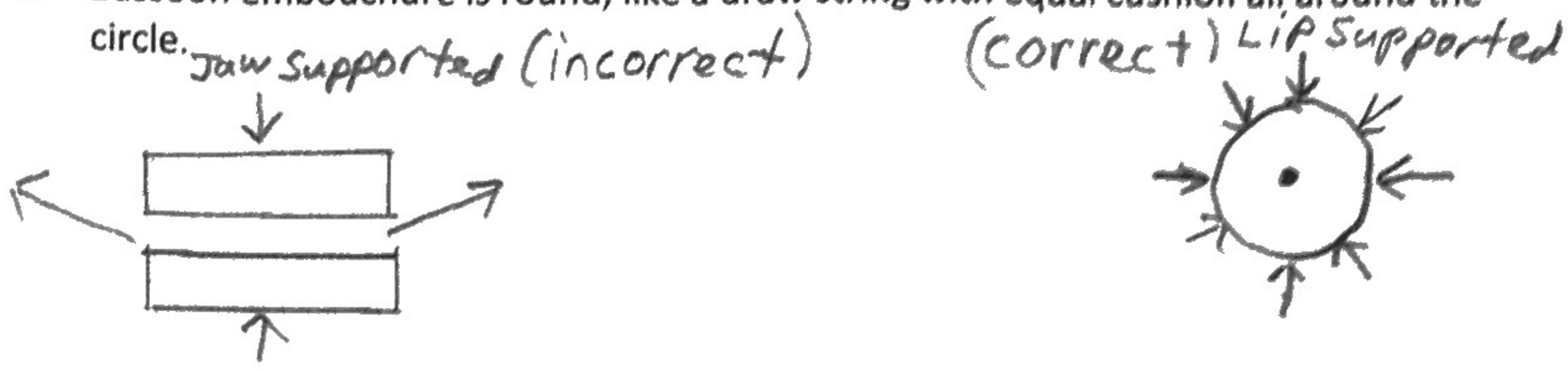
(The overtones are sharp on the bassoon. Thus, all of the fingerings for the 3rd mode are fingered down a half step)

II. Embouchure Formation. Producing the "Crow"

A. The purpose of the embouchure.

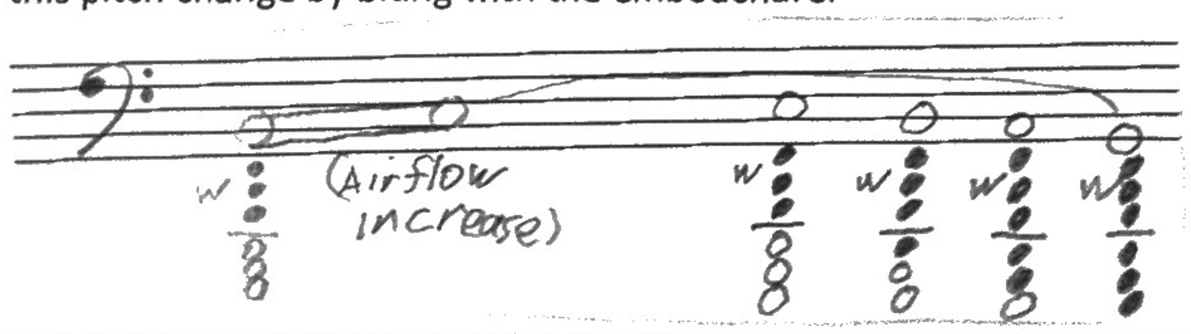
1. To control pitch, loudness, and timbre by damping the reed.
2. Area of lips that cushions the reed is called the vermillion zone (cushiest part of the lips).

3. Bassoon embouchure is round, like a draw string with equal cushion all around the circle.



B. Yawn to experience the jaw's motion as it pivots down and away from the maxillary hinge.
C. Take a deep breath, insert the blades of the reed into the mouth while holding the reed tube with the fingers of the right hand.
D. Close the lips like a draw string around the reed. Move the air with the intercostal muscles and lower abdomen through the reed to create the "crow." Like blowing up a balloon or blowing out the candles on a cake.
E. The goal is to create a free, vibrant, multiphonic reed "CROW."
F. If unsuccessful after several attempts, try one or more of the following:
    1. Forcefully hold the jaw down and back with thumb pressure to prevent it being used in a hard, jaw supported, double bite embouchure.
    2. In extreme cases where previous established embouchure patterns are deeply ingrained (usually clarinetists) temporarily allow the cheeks to puff. This will prevent an involuntary pulling back of the corners of the mouth into a smile position.
    3. Move the reed slightly in and out of the mouth to find the optimum insertion depth for production of the "CROW."
    4. Tip the binding end of the reed slightly up and down to change the angle of incidence formed between embouchure and reed (should normally be approximately 90 degrees to the vertical axis of the head.)
    5. Do not proceed beyond this point until consistent production of the crow is mastered, for the ability to crow the reed is basic to all subsequent tone production procedures.

III. Producing the first tone
    A. "Crow" reed several times
    B. Place reed on the bocal alone and by using the necessary embouchure manipulation produce a 4 semitone range from B-D
        1. B represents the low register embouchure.
        2. C represents the primary register embouchure.
        3. C# represents the second register (2nd mode) embouchure
        4. D represents the high register embouchure.
    C. Place reed in mouth, insert bocal into instrument, "crow" the reed one more time, place reed on bocal, finger 2nd space C, and blow <u>exactly</u> the way the crow was produced <u>no matter how bad it sounds!</u>
        1. With the correct, relaxed, soft, lip supported embouchure the sound will be very raucous and <u>should be exactly ½ step flat!</u>
        2. When a stable B can be consistently produced on the bassoon with the C fingering, drive the sound up to C with additional AIR FLOW and BREATH SUPPORT. DO NOT accomplish this pitch change by biting with the embouchure.



        3. IT IS IMPORTANT TO RECOGNIZE THAT THE PITCH LEVEL ON BASSOON IS PRIIMARILY MAINTAIND BY AIR FLOW AND BREATH SUPPORT, NOT EMOUCHRE PRESSURE!! (In actuality the above approach somewhat exaggerates the breath embouchure relationship by using a low register embouchure to produce the primary register: however, this distortion is pedagogically sound as it tends to compensate for the natural tendency to use excessive embouchure pressure without enough breath support).

IV. Reed Compatibility
    A. The reed, when blown with a proper embouchure, should crow:

1. A dominant pitch of Eb for use on a #2 bocal
2. A dominant pitch of D for use on a #1 bocal
3. A dominant pitch of E for use on a #3 bocal.

B. The reed plus bocal, when blown with a primary register embouchure, should produce a slightly flatted middle C.

C. When the embouchure is relaxed and the reed allowed to "balloon" to its largest interior volume the pitch of reed plus bocal should drop to a stable B.

D. Attempts to lower the pitch of the reed plus bocal beneath B should result in an octave B "crow". The lower octave is added by an internally generated difference tone.

E. The Reed, when blown alone, must have a minimum range of one octave:

1. Melodies of one octave or less can be played on the reed alone.
   a. The playing of such melodies on the reed alone should be an integral part of first and subsequent lesson assignments.
   b. The mobility inherent in such performance is indicative of the flexibility necessary in embouchure, oral cavity and reed while playing the bassoon.

V. The oral cavity resonator ("voicing")

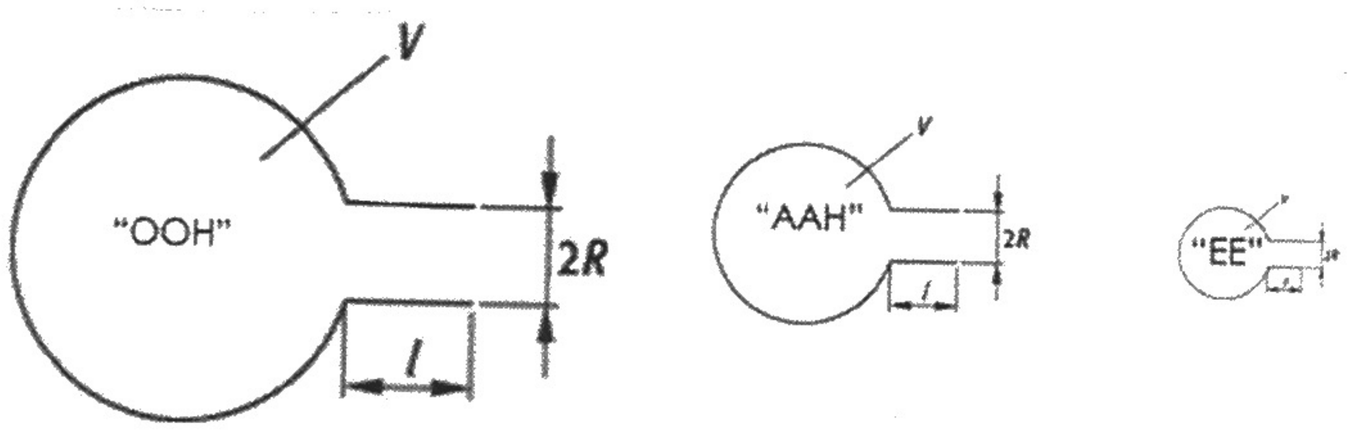
A. All wind instruments use the vocal tract to regulate intonation and timbre.

B. It shapes the quantity, speed and direction of the air flow.

C. Wind players have 2 resonators. The tube of the instrument and the oral cavity.

D. It consist of the Glottal Aperture up to the mouth/reed aperture.

E. The slower the frequency the larger the oral cavity resonator.



VI. Posture.

A. Instrument balanced, not be held by the fingers.

B. Left thumb perpendicular to the instrument on the whisper key and slightly touching the low D key.

C. Left hand 1st finger covers hole slightly on the side to accommodate the venting the 2nd range (half-hole).

VII. Instrument hold and hand position

A. Instrument should be balanced, natural and relaxed!! Tension is the enemy!!!

B. Contact fingers to keys, holes; with pads of the fingers.

C. Wrist should be naturally straight.

D. Fingers should be naturally curved.

E. Fingers move from 1 joint. The first knuckle (Metacarpophalangeal joint).

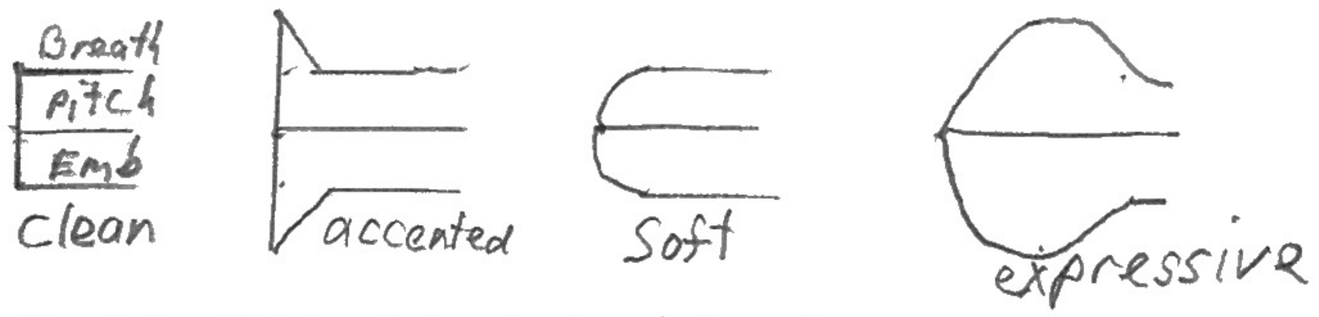
F. Lift fingers only as high as needed.

VIII. Articulation

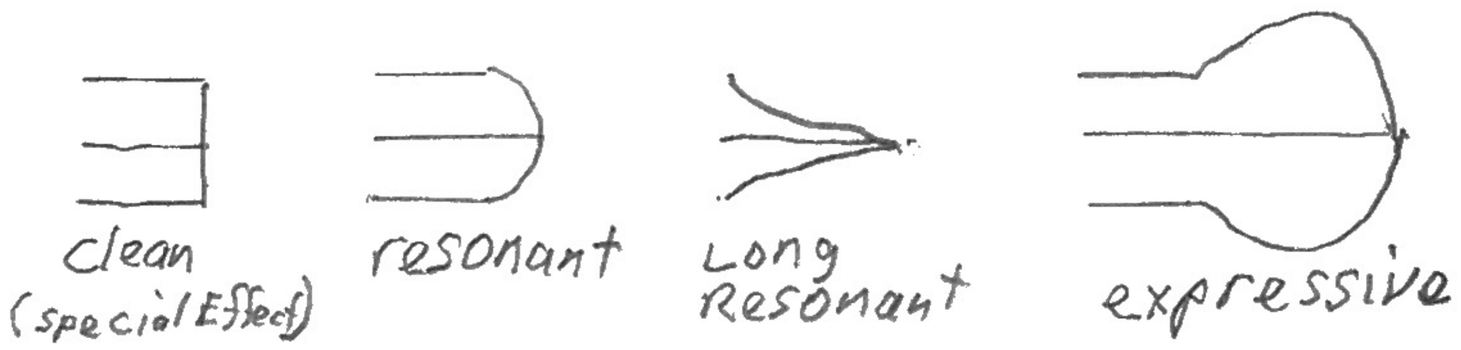
A. Shaped mostly by the tongue.

B. Tongue acts as a valve.

C. Arthur Weisburg's Initiations (attacks)



D. Arthur Weisburg's Terminations (releases)



E. Pedagogical approach to articulation should be to focus on the air flow not the tongue.

IX. Intonation

A. Precursors to good intonation.
    1. Consistent steady state musical tone.
    2. Compatible reed.
B. Internally, the instrument is designed to play in tune at the temperature of the breath. Thus, warm-up is essential.
C. Temperature's effect: Flat when cold sharp when hot.
D. Making Pitch Adjustments
    1. . Embouchure and vocal tract (oral cavity resonator).
    2. Simple reed adjustments
        a. Basic tools: needle nose pliers, waterproof sand paper (300-600grain), reed plaque (a guitar pick is better than nothing).
        b. More advanced tools for finer adjustment: Reed knife, holding mandrel, reed file, bassoon reed reamer.

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