10 FACTORS AFFECTING TONE IN BANDS

by Anthony Susi 4-28-26 www.SusiMusic.net

1. "SNIFFERS" - students unable to provide maximum breath support because they are only inhaling through their nose. A few suggestions to correct this habit:

a.) Have a long tone contest to compare how many beats the students can sustain a note by only breathing through their nostrils versus breathing through their mouth.

b.) Say "Hoe" backwards while placing a hand on their stomach to feel the desired sensation of the expansion of their organs below the lungs to make room for air. They can also try resting their forearms on their laps while doing this to experience the need to sit tall when playing for maximum air capacity.

c.) Ask them to inhale slow for 2 beats and hold. Then "sip" 2 more beats and hold. Continue doing this until they can't take in anymore to experience their lung capacity.

d.) Stand to pull an imaginary bow & arrow back slowly while they inhale through their mouth to fill their lungs.

e.) Sequentially inhale through the mouth for 4 beats and exhale for 4 while hissing to simulate mouthpiece resistance and hear if airstream is steady/constant. Then exponentially inhale for 3, exhale for 6; inhale for 2, exhale for 8; etc.

f.) With mouthpiece only in place, practice exercise "b" above thru corners of the mouth.
(Flute headjoints remain in contact with lower lip)
(Reed players top teeth and lower lip remain in contact)
(Brass mouthpiece remains in contact with lips)

2. POSTURE - Students tend to adjust their body to the instrument rather than reverse.

a.) Individual Holding Positions
Flutes: Keep R. arm up so embouchure plate remains parallel to lips with head straight.
Clarinets: Do not rest forearms on lap or support bell with knees. 35-40 degree angle.
Oboe: Keep chin up parallel to the floor and instrument angle approx. 45 degree angle.
Saxes: Turn mouthpiece so your head/torso is not tilted and don't rest instr. on R. thigh.
Trumpets & Trombones: Keep your elbows off of your torso.
Fr. Horn: Lead pipe should angle about 45 and don't rest bell on your lap (hunching)
Euphonium & Tuba: Don't lay bell across your lap causing you to bend & dip your chin.

b.) Elongated Torso: While holding their instruments in the correct position, challange the students to stand up from their chair and then sit back down "at attention". This places them in the desired postion with backs off of chair and feet on the floor.

3. EMBOUCHURE - There are details for each instrument but here are some general ones to address:
a.) For All Winds - No air pockets/puffy cheeks. Firm corners of mouth can prevent this.

b.) Reeds - Top teeth in contact with m.p., lower lip not rolled outward to cushion bottom

4.) MOUTHPIECE & LIGATURE - Shape and Material directly affect Tone.

a.) Brass - The size and shape of the cup impact a player's ability to produce different registers and articulations. Larger mouthpieces are played for lower registers, while smaller mouthpieces are used for the higher registers.

Mouthpieces with a larger cup depth provide more lip vibrations, which results in a fuller and more resonant sound. These models encourage better lip control and endurance. Larger deep cups produce lower, darker sounds, while mouthpieces with small or shallow cups allow producing the brightest sounds.

A large rim diameter provides more surface area for the lips to distribute pressure. Players with larger lips or those who seek more endurance may prefer larger rim sizes. A smaller rim diameter provides more precision and control, so they are suitable for players with smaller lips or those who like a more focused sound.

When it comes to cup shapes, U/Bowl cups produce a powerful sound, V/Conical cups create a mild sound. Mouthpieces with U cups are used for trumpet and trombone mouthpieces, while slightly U and V cups fit horns. (KGUmusic.com)

b.) Reeds - The mouthpiece lay (or facing length) and tip opening dictate how the reed vibrates, directly affecting tone, resistance, and playability. A longer lay with a wider tip typically produces a broader, louder, and darker tone, while a shorter lay with a narrower tip provides a more focused, brighter, and easier-to-control sound.
Ligature Material - Metal provides a bright, focused, and free-blowing sound, while fabric/leather creates a warmer, darker, and more intimate tone. (MusicArts.com)

c.) Flutes - A gold embouchure plate (lip plate) can subtly affect a flute's tone, typically adding warmth, depth, and a more colorful, "darker" sound compared to silver. While the riser—the part connecting the lip plate to the headjoint tube—has a more significant impact on sound than the plate itself, the denser gold material generally produces a mellower, more responsive tone. (Rachel Taylor Geier)

5.) PLACEMENT - Critical factor, especially for Reeds!

a.) Brass - ½ upper lip and ½ lower lip with the exception of Fr. Horn ⅔ upper, ⅓ lower. Wet lips, maintain space between top & bottom teeth and reduce mouthpiece pressure.

b.) Reeds -Strength, Quality, Moistness, & Placement are all important factors.
Strength: The higher the number, the thicker/stiffer the reed requiring more air to vibrate
Reed Test - should be able to play softly in your full range. Flat=too soft, Sharp+too hard
Placement: Tip should not protrude above the rail, nor should there be a gap. Strive for a thin black line (rail) showing. *The Ligature needs to be below the shaved part of the reed with the top screw just firm enough to keep reed from shifting once aligned.
Teeth: Top teeth should make contact on m.p. at the point the reed touches the lay (hold up sideways to a light to see). Too much/ too little reed in mouth = squawks & squeeks.

6.) CONDITION - The condition of the mouthpiece, reed and/or instrument is significant.

a.) Woodwinds: Leaky pads/keys will cause squeeks and affect tone/intonation.

b.) Reeds: A discolored, worn and/or chipped reed should be replaced. Recommend students alternate playing between every other day between 2 reeds.
A dry or saturated reed will not vibrate freely. Moisten in mouth while assembling

instrument.
A chip on the rail will cause air to leak resulting in squeeks and a thing sound.

c.) Flutes: - A dented headjoint will affect airstream direction impacting pitch and tone.

d.) Brass: - Likewise, dents on brass bends/slides especially impact pitch and tone.
An old water-key cork will leak air, causing a thin sound.

7. VOWEL SHAPE - Matching the vowel to the instrument's register is crucial; an inappropriate shape can result in sharp or flat notes. Shifting vowel shapes helps with navigating register breaks and controlling the stability of sound.
"E" (ee): Bright, focused, used for high notes.
"**A" or "O" (ah/oh):** Dark, open, used for low notes/fullness.
"Oo": Used for tuning adjustments and smoothing tone. (DANSR, Inc.)

8. BALANCE - If one section plays too loud, other sections are forced to play louder to hear themselves, resulting in distorted tone and intonation issues.

Reed Instruments (Clar./Sax.): Higher volume often results in a flatter pitch because higher pressure causes the reed to vibrate with greater amplitude, increasing its moving mass and reducing vibration frequency. Conversely, a softer, more controlled sound can sharpen the pitch.

Flutes & Brass: These intsruments typcially behave in the opposite manner; higher volume and pressure require more focused air, which generally leads to a sharper pitch. (Woodwind Forum)

9. AMP & PICKUP SETTINGS - Considerations for Jazz Guitar and Electric Bass.

Electric Bass: Use a Bass Amp, not guitar or keyboard amp, as the frequency response/tone will be different.
Use less lows, more treble with tone control to simulate Upright Bass (more definition).
Recommend using a Foot Pedal for volume control with an amplified bass.
For upright bass, best place to pluck the string for most definition and resonance is near the bottom of the fingerboard.

Electric Guitar: Steps to simulate a hollow body guitar using a solid body elec. Guitar.
a.-Select the "neck" pickup (located closest to the fingerboard). Never use the "bridge"
b.-Heavier String guages provide a desired warmer, darker sound and better intonation.
c.-A clean sound without distortion effect should be used.
d.-Strum with a medium thick pick, not thumb.
e.-A cabinet with one 12" or 10" speaker is sufficient with a minimum for 20 watts to a max of 60.
f.-Place the amp behind them so the whole rhythm section can hear it and also use their body as a buffer to prevent feedback between the amp and guitar pickups.
h.-Do not use a Bass amp as the frequency response and tone quality will be different.
i.-Turn volume and all tone controls on the amp down (barely audible, no more than 3).
j.-Turn up the volume control on the guitar up.
k.-For jazz style, use more low and mid on the amp tone settings, less treble for

mellower sound.
l.-A mellow and sweet sound can be produced strumming at the end of the fingerboard

10.) PERC. CHOICE OF MALLET & STRIKING SPOT - Critical to get desired sound!

Timpani: Experiment striking 3 - 4" from the rim to find the most resonant spot. Use harder mallets for more rhythmic definition & accents; softer mallets for mellower tone.

Bass Drum: Avoid the dead center (too thuddy) and the extreme edge (too thin). Using a heavy soft felt mallet, strike about 6' off-center using a "J-stroke". Stand with 1 foot on a support rail to allow the knee to touch the drumhead for damping. For faster, more articulate passages, move closer to the center, or use harder mallet. (Perc. Arts Soc.)

Suspended Cymbal Rolls: Use yarn mallets and strike 0.5-1" from edge at the 3 & 9 o'clock positions using a glancing "U-shaped" stroke for a smooth, blooming sound.

Triangle: Strike the side opposite the open corner with a thin beater for clearest tone. For rolls, rapidly strike sides near inner top corner. (Vic Firth Corp.)

Tambourine: Holding it at 45-degree angle, use finger taps near the rim for soft passages, knuckles strikes for loud, accented passages. Use a "Pac-Man" hand shape for articulate playing. For a drier sound, hold it flatter. (Black Swamp Perc.)

Mallets: Play in the center of bars over the resonators, not the posts.
Bells - use hard plastic for general use, metal for extreme brilliance, and rubber or acrylic for softer, warmer tones. Marimba - use yarn wrapped mallets with rubber core. Vibes - use cord-wrapped mallets (mushroom or round) on rattan shafts for better articulation on metal bars. Xylo. -Hard plastic heads provide a bright, sharp attack for fast passages, while rubber or soft synthetic heads offer a warmer, more muted tone. (Yamaha Corp.)