



YAMAHA CORPORATION OF AMERICA • BAND & ORCHESTRAL DIVISION

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Obtaining Premium Sound from Your Saxophonists

By Dr. Kenneth Tse

There are basically two principle areas when we approach the study of musical sounds: aesthetics and acoustics. Aesthetics (or esthetics) is a branch of philosophy dealing with the nature of beauty. The aesthetics in sound is normally associated with the subject of psychoacoustics—the internal realization of the listener. Two of the important elements of aesthetics in music are resonance and color.

Acoustics, on the other hand, is the observation of how sound is produced, whether they are the differences between various kinds of sound or between musical tone and noise. It is the study of external manifestation of sound. Studying the acoustics of an instrument enables one to appreciate more readily where the manufacturer's responsibility ends and where the player takes over.

The saxophone has many unique acoustical qualities. It has a conical bore that is much larger than other woodwind instruments' (both even and odd number harmonics are amplified) and can create fundamentals more easily. The conical tip (good mouthpiece) facilitates evenness of timbre and the extension to altissimo register. Because of the larger bore, the player, assuming he/she has the proper equipment, needs to have the ability to control a great range of volume, flexibility of intonation, and have a considerable influence on tone quality. One must aim for the best tone possible, not settle for mere sound production.

When it comes to **the aesthetics (psychological element) of saxophone tone production**, there are some questions one must ask: Do I have a concept of what a good saxophone sound/tone is? Do I know what saxophonists should NOT sound like? Your saxophonists must be able to differentiate between good and bad sound. **It is very important to note that a good saxophone sound should not be defined by any school of method or personal preference. Rather, it is what best represents the acoustical essence of the instrument.**

What is the essence of the saxophone sound? By design, the saxophone bore can create some of the most colorful sound in any wind instrument. A good sound should have the best resonance. Resonance is the key word and is defined here as sound with all the harmonics sounded in their fullest capacity. Each register on the instrument has its own color and each note has its own resonance profile. It is, therefore, the responsibility of the player to bring out the best of each note. Similar to playing the piano, different finger technique and touch bring out different tones from the instrument. A saxophonist controls his sound by altering the tongue position and shape of the oral cavity.

Obviously, it is extremely difficult to explain an external experience in words. Therefore, it is vital that young players listen to good saxophone recordings in order to learn aurally. Students can also attend local saxophone recitals to observe more variety of tone colors. Ultimately, one must be able to define what a good sound is, and most importantly, how to achieve it. It is the author's experience that sometimes a student is able to create his ideal sound by controlling his physical aspects translated from his aural concept.

Besides the concept of a good sound, **the acoustics (physical elements) of saxophone tone production** are crucial elements that affect tone quality and must be dealt with carefully.



1) Reed

- **The general quality of a reed has a direct correlation to its price.**
 - Personal recommendation: Vandoren, which is most consistent
- Choose the right strength: 2-2 1/2 for beginners and 3-3 1/2 for intermediate to advanced students.
- It needs to have a yellowish-brown or golden color with no green (too young) or brown discolorations (too old or moldy) in the vamp.
- Reeds need to be soaked thoroughly with water before playing and dried properly afterward. *Most of the time, prolonged soaking can help a warped reed (tip and body)
- Reeds need to be stored in reed guards or other commercial holders. I find that a wooden box (a cigar box for example), with its relatively constant humidity, is one of the best containers for reeds in reed guards.
- Always use a mouthpiece cap when not playing.
- Rotate at least four reeds and discard old, chipped or moldy reeds.
- Make sure the reed is positioned securely and properly on the mouthpiece.
- For other details, please see the author's article on reeds.

Problems and Remedies:

Reed too soft?

- Move it up slightly beyond the tip rail but not too much
- Clip the tip of the reed with a commercial reed trimmer (not guaranteed to work)
- Make sure the strength of the reed is correct for the level of the player

Reed too hard?

- Find a reed that plays easily on all registers with a good tone
- Collect all the hard reeds and ask a teacher to adjust
- Make sure the strength of the reed is correct for the level of the player
- If the color of the reed is dark, especially in the heart area, the cane is probably dead and will not vibrate correctly

Squeaky reed?

- Check if the reed seals with the mouthpiece; is it warped?
- Check if the tip is chipped or cracked
- Check if the tip rail of the mouthpiece is damaged
- Check if the ligature is broken or too loose
- Does the player have correct embouchure, correct tongue position, or excessively puffed cheeks?

2) Air, Oral Cavity and Tongue Position

- Saxophone is the "tuba" of all woodwind instruments.



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- Think of air as the fuel of the tone
- Use warm air (Misconception: “one needs to open the throat as in yawning”; one should not force the throat to open while playing)
- Besides achieving articulations, the second function of the tongue is to guide the air stream. Different notes on the saxophone have different tongue positions/oral cavity shapes.
- The larger the saxophone, the less air pressure but greater air quantity is required.
- **In order to play musically and expressively, the amount/speed of air MUST follow the inflection of the music.**
 - *Exercise*—Use correct embouchure and blow air through the mouthpiece (with reed) into the instrument but without sound (by relaxing the embouchure “grip” completely) and finger the notes as in actual playing; listen carefully to the loudness AND pitches of the air stream. It should reflect the changes in dynamics and fluency of the music. What one hears in the air WILL reflect in the musical sound.
 - *This exercise is also very beneficial for ensemble warm up*
- Test for embouchure and air balance using the mouthpiece alone. The student should be able to obtain the following notes on the respective instruments: soprano—concert C; alto—concert A; tenor—concert G; baritone—concert D

3) Embouchure

- It should be almost always formed in a forward “O” shape.
- It is much more flexible than that of the clarinet, which has a different shape—“MU”
- Make sure upper front teeth are placed evenly on top of the mouthpiece and lower lip rolled in comfortably, just enough to cover the lower front teeth.
- Corners of the mouth should wrap around the mouthpiece easily without too much tension.
- The chin should NOT be pulled flat and pointed.
- Embouchure in jazz playing is much more flexible but it does not mean without the proper form.

4) Equipment

- Although it is not always possible to have the most expensive and best-made instrument for students, one should try to stay with time- and field-tested brands such as Yamaha, Selmer, Yanagisawa, etc.
- Make sure the pads are not leaking—have the instrument checked regularly
- The mouthpiece is another vital part of the saxophone. Make sure the tip opening is suitable for the level of the player—follow the manufacturer’s recommendations.
 - Recommended brands:
 - Classical—Eugene Rousseau (NC4), Selmer (C*), Vandoren (AL3)
 - Jazz—Meyer, Otto Link, Berg Larson

***Our job as music educators, especially instrumental music, is to reconcile the abstract (aesthetics) with the concrete (physical elements) and be able to communicate the findings to the students.**

For information about the author, please visit:
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Sample Recordings:

Winds of Change

Fred Hemke, saxophone

R. Finney's *Concerto for Alto Saxophone and Winds* (New World Records)

Mixed Company

Michael Jacobson, saxophone

With various artists

(Equilibrium Records)

Saxophone Masterpieces

Eugene Rousseau, saxophone

Jaromir Klepac, piano

(Riax Records, RICA 1001)

An American Exhibition

Kenneth Tse, saxophone

Mami Nagai, piano

(Crystal Records, CD657)

An American Patchwork

Michael Hester, saxophones

(Smooth Stone Productions)

Extravaganza for Saxophone and Orchestra

Debra Richtmeyer, saxophone

(Albany Records, TROY 593)

Saxophone Vocalise

Eugene Rousseau with the Winds of Indiana,

Frederick Fennell, conducting

(Delos 3188)

Lyric Soprano

Kenneth Tse, saxophone

Alan Huckleberry, piano

(Crystal Records, CD658)