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STONE DEVELOPMENT THROUGH NON-TRADITIONAL TECHNIQUES:

A PEDAGOGICAL RESOURCE FOR TROMBONISTS

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STONE DEVELOPMENT THROUGH NON-TRADITIONAL TECHNIQUES:  
A PEDAGOGICAL RESOURCE FOR TROMBONISTS

A DOCUMENT APPROVED FOR THE  
SCHOOL OF MUSIC

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To Shelley and Mina

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## **Abstract**

Sound development is arguably the most important aspect of trombone pedagogy. Over time, most brass players arrive at a daily routine of exercises specifically focused on improving sound; however, certain exercises straying from traditional trombone performance—which are referred to as non-traditional in this document—have become or are becoming an important part of pedagogy. This study identifies these exercises, catalogs them into a pedagogical resource, and ascertains the prevalence of their use within the trombone community.

Delineated into four categories, this research explores the use of vocal techniques, external devices, buzzing in its various forms, and false tones/pitch bends. This document provides a detailed explanation and analysis of each technique discussed within the four categories. Analysis includes comparing the exercises to traditional tone studies and exploring their intended benefits to tone development. Trombone pedagogues continuously search for fresh ways to explain and demonstrate different aspects of playing to students; non-traditional techniques may potentially add a new branch of resources to the low brass pedagogical toolbox.

# Chapter 1: Introduction

## Background

Traditional technique cannot be ignored, since it is mandatory in order to learn and master new techniques; learning and mastering new techniques enhance and define more clearly traditional techniques. The old and the new, so seemingly separate, are actually inseparable and, in the long run, complementary, even if in the short run this seems not to be the case.

—Stuart Dempster, *The Modern Trombone*

Traditional techniques of developing tone on the trombone are firmly rooted in the iconic method books of the field. Pedagogical works by Emory Remington, Robert Marsteller, Max Schlossberg, and Jean-Baptiste Arban are revered to an almost biblical extent and represent mainstays within trombone literature.<sup>1</sup> While the long tones and lip slurs advocated by the preeminent pedagogues of the twentieth-century will always exist at the foundation of low brass playing, numerous innovative *non-traditional* tactics remain largely undiscovered and underappreciated, yet hold tremendous potential for pedagogical exploration.<sup>2</sup>

While non-traditional or extended techniques elude succinct definition from even standard music resources<sup>3</sup>—the generally accepted definition articulates that

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<sup>1</sup> Authoritative method books include the following, among others: Emory Remington's *Warm-up Exercises for Trombone*, Robert Marsteller's *Basic Routines for Trombone*, Max Schlossberg's *Daily Drills and Technical Studies for Trombone*, and Jean-Baptiste Arban's *Complete Method for Trombone and Euphonium*, the last of which is described as the "Bible" of brass pedagogy" in the *Encyclopedia of American Gospel Music*. William K. McNeil, *Encyclopedia of American Gospel Music* (New York: Routledge, 2005), 403.

<sup>2</sup> In his *Practical Hints on Playing the Trombone*, Paul Tanner articulates the generally accepted standard remedy for improving sound and its prominence asserting, "All instructors seem to agree that the best exercise for improvement of the tone is one of the oldest exercises even invented—long tones." Paul Tanner, *Practical Hints on Playing the Trombone* (Melville, NY: Belwin Mills, 1983), 22.

<sup>3</sup> Rather than assigning an all encompassing definition, the *Grove Dictionary of Music* describes extended techniques as a linear process, or evolution of performers and composers approaching existing instruments in experimental ways. Hugh Davies, "Instrument Modifications and Extended Performing

extended techniques, "...require the performer to use an instrument in a manner outside of traditionally standard norms."<sup>4</sup> The "standard norm" as limited within this study, is the performance of a trombone fully assembled, using a traditional tone—no multiphonics, flutter tongue, or other oral alterations—and with no external devices attached or used in conjunction with the trombone. The term non-traditional is expanded to encompass atypical tone exercises that incorporate external devices such as mutes, pin wheels, and other commercially available products. Unfortunately, evidence suggests that a stigma accompanying non-traditional techniques can cause artists and teachers to push them aside, but by excluding these methods, trombonists may inadvertently eliminate valuable resources for musical growth.<sup>5</sup>

While the non-traditional techniques in this study are centrally focused on improving tone, they additionally hold the potential to diagnose fundamental performance issues, unlock greater efficiency, embouchure control (flexibility, sensitivity, etc.), projection, sense of pitch, consistency, and other aspects of playing relating to sound. From a pedagogical standpoint, the sound one creates is not a singular entity but a complex combination of factors that add up to a final product; non-traditional techniques can simplify many of these factors by isolating key fundamentals and circumventing complex instructions.

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Techniques," *Grove Music Online*, accessed March 9, 2016, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/47629>.

<sup>4</sup> Matthew Burtner, "Making Noise: Extended Techniques after Experimentalism," *New Music Box* 71, vol. 6, no. 11 (2005): 1, accessed March 1, 2016, <http://www.newmusicbox.org/articles/making-noise-extended-techniques-after-experimentalism/>.

<sup>5</sup> Jazz trombonist and pedagogue David Baker comments on the negative connotations accompanying extended techniques in the foreword of his method series, *Contemporary Techniques for the Trombone*, noting that if an awareness of non-traditional techniques and contemporary music exists it, "...is accompanied by apathy, ill disguised tolerance or open hostility toward the music and the musician who plays it." David Baker, foreword to *David N. Baker's Contemporary Techniques for the Trombone* (New York: Charles Colin Music, 1974), 2.

## **Purpose**

Developing a beautiful sound is arguably the most important aspect of trombone pedagogy; over time, most brass players arrive at a regiment of sound-focused warm-up exercises. For most, achieving a pure tone—free of stuffiness, airiness, or extraneous noise—as efficiently and effortlessly as possible is the ultimate goal. The purpose of this study is to identify and analyze non-traditional exercises focusing on tone development, catalogue them into a pedagogical resource, and ascertain the prevalence of these techniques within the trombone community. This research collects and categorizes exercises of accomplished pedagogues from around the world into a single user-friendly document available to assist low brass players of all ages and abilities in their quest for a resonant and vibrant sound.

## **Need for the Study**

Trombone pedagogues continuously search for fresh ways to explain and demonstrate different aspects of playing to students; explanations or exercises that work for one student may leave other individuals still grasping. Non-traditional techniques may potentially add a new branch of resources to the low brass pedagogical toolbox. Additionally, in pursuit of the optimal sound, performers and teachers inevitably encounter abstract topics that evade concrete explanation. For example, instructions to play with an “open throat” or to “use more air” often frustrate students who lack an understanding and means of practicing these intangible concepts. Non-traditional techniques like singing and playing simultaneously, offer an accessible pathway towards achieving lasting developments in these conceptual areas.

Numerous resources explore the technical means of producing various extended techniques, yet few documents address the utility of these techniques within sound production. Of the few documents that discuss the advantages of extended techniques for sound development, the benefits of these techniques are simply mentioned in passing, with no further exploration of the pedagogical possibilities. Additionally, while numerous warm-up routines and methods include non-traditional techniques, these documents are largely unpublished and inaccessible to the greater trombone community.

### **Scope and Limitations**

This study focuses on techniques that fall into four categories: vocal, external devices, buzzing, and false tones/pitch bends. In the vocal category, the following topics are explored: vowels, singing and playing in unison, multiphonics, alternating between singing and playing, and flutter tonguing. The external device category explores the incorporation of independent devices or tools used either in tandem with the instrument or solitarily, aimed at developing a better tone. Topics covered include: the use of mutes, and the use of other apparatuses targeting sound, including embouchure and tongue devices, and the use of a pinwheel. The buzzing category investigates the benefits and applications of: mouthpiece buzzing, buzzing with finger resistance, hand buzzing, buzzing with a “cut out” mouthpiece/visualizer, rim buzzing, free buzzing, buzzing/playing through the inner slide only (without an outer slide), and buzzing with an external device. Finally, the fourth category delves into false tones and pitch bends. Trombonists often employ false tones to improve low register sound, but this document

will further discuss the application of this approach across the full range of the instrument.<sup>6</sup>

This document provides a detailed explanation of each technique explored within the four categories. Additionally, each discussion of a specific technique explores applications to sound development and analyzes example exercises collected from research. Analysis includes comparing the exercises to traditional tone studies and exploring their intended benefits to tone development.

### **Methodology**

This study is comprised of two phases; the first phase explores documents already available through traditional methods of research, such as databases, libraries, and websites. The second phase of research seeks to discover the prevalence and methodology of non-traditional techniques being used for sound development by professional trombonists, through an online questionnaire approved by the Institutional Review Board.

### *Research*

This document investigates and compiles non-traditional exercises from all resources available, including etude and method books, warm-up routines, published journal articles, master classes (both transcribed and recorded), and online resources such as audio/video interviews, podcasts, and blogs. If physical musical examples of the exercises are not available and only described—as in the case of an audio interview—then the exercise will be transcribed and included in this document. These examples

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<sup>6</sup> Paul Tanner, introduction to *Practice with the Experts: Twenty-Five Favorite Exercises for Trombone* (New York: Leeds Music Corp, 1960), 2.

will be organized into the four categories outlined in the scope and limitations section, where their purpose will be defined and analyzed.

### *Questionnaire*

The second phase of research gathers data from a questionnaire (q.v., Appendix A) to explore the prevalence and application of non-traditional tone exercises and identify trombonists most engaged in their use. The questionnaire was distributed to professional performers in orchestral, military band, and commercial positions, as well as respected university and conservatory pedagogues within the trombone community (q.v., Appendix B).

### **Related Literature**

While the topic of sound is mentioned in many brass method books, a document dedicated wholly to non-traditional sound development for trombone does not exist. Much of the literature that explores the non-traditional techniques discussed in this study (vocal techniques, external devices, buzzing, and false tones/pitch bends) serve only in an instructional capacity. Performance guides focusing on extended techniques within specific solo literature exist, yet rarely discuss the benefits of these exercises for sound development.<sup>7</sup>

Despite this gap within trombone literature, resources in other wind instruments focusing on tone development using non-traditional or extended techniques are available, and can be useful as a model for low brass. Robert Dick, contemporary flutist and advocate of extended technique sound development, offers many pedagogical ideas

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<sup>7</sup> Examples include: Milton Stevens, “New Techniques Required to Perform Recent Music for the Trombone” (DMA doc., Boston University, 1976); Cason A. Duke, “A Performer’s Guide to Theatrical Elements in Selected Trombone Literature” (DMA doc., Louisiana State University, 2001).

for the flute that are equally applicable to the trombone. Published in 1999, Dick's *Tone Development through Extended Techniques* quickly became a standard text within flute pedagogy, and demonstrates the potential impact of extended technique tone pedagogy within a specific instrumental discipline.<sup>8</sup>

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<sup>8</sup> Robert Dick, *Tone Development through Extended Techniques* (St. Louis: MMB Music, 1986).



## Chapter 2: Concept of Tone

Tone quality is your most important attribute as a trombonist. If your tone is inferior, nothing else will matter...

—David Vining, *What Every Trombonist Needs to Know about the Body*

Sound is the most important aspect of performing on a musical instrument. It is what listeners hear first and what will stay in their minds.

—Charles Vernon, *The Singing Trombone*

Anyone who has worked intensively in this field knows that tone quality is not primarily dictated by a certain brand of instrument or mouthpiece, but by the instrumentalist himself; a very complex procedure involving a lot of different components.

—Heinz Fadle, *Looking for the Natural Way*

The topic of tone or sound—used interchangeably in this study—is discussed in numerous trombone pedagogical resources. The quotes of Vining and Vernon at the head of this chapter are just two among a myriad of statements that identify sound as the most important aspect of playing the trombone. Intangible in nature, tone alludes succinct definition; this chapter explores, discusses, and defines the concept of tone as described in contemporary and historical trombone literature.

What constitutes a good or bad trombone sound is largely subjective and situational. While individuals may value different aspects of tone more than others, most professional trombonists agree on the basic tenets or characteristics that comprise a favorable sound. In a recent interview, Peter Ellefson, of Indiana University, was asked to describe the sound of his teacher and mentor, long time second trombonist of the Chicago Symphony Orchestra, Frank Crisafulli:

His sound was like no other I have ever encountered. Compact yet wide and very “meaty.” His sound was full, pure, direct and filled with overtones. He

played relatively small equipment (by today's trend) but he had a huge sound. I like to describe the ideal trombone sound as narrow and deep rather than wide and shallow (a la baritone horn). I believe that the narrow and deep sound is what projects and he certainly projected with apparent ease.<sup>9</sup>

Aural images such as these can motivate and inspire students and professionals alike, but also underscore the inherent abstractness that characterizes descriptions of trombone tone. For example, it's difficult to quantify what precisely constitutes a "narrow and deep" sound.

Arthur Lehman, in *The ART of Euphonium Playing*, provides a visual representation of the composition of various kinds of tone:

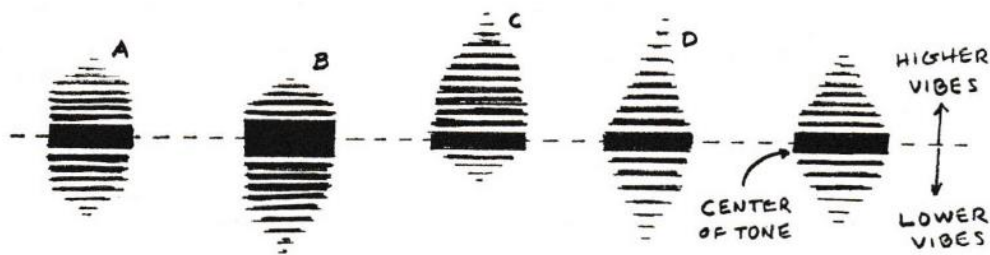


Figure 1. Tone Construction. Lehman provides four types of tones: *a*, normal tone, balanced good center; *b*, dark tone, rich, lots of core; *c*, light tone; *d*, broad/airy tone. Arthur Lehman, *The Art of Euphonium Playing*, vol. 2 (Poughkeepsie, NY: Bob Hoe, 1977), 26.

While Lehman expresses a preference for a "centered tone," with a balance of overtones and undertones, he recognizes that each of these types of tones can be appropriate for different types of work or performing situations.<sup>10</sup>

Similarly, influential hornist Fred Fox, in his *Essentials of Brass Playing*, also advocates for a centered sound that balances "highs and lows" within the tone. He

<sup>9</sup> Peter Ellefson, interview by David Brubeck, "A Trombonist's Tale... '1385' Features Master Teacher Peter Ellefson," July 18, 2016, accessed June 1, 2017, <http://www.davidbrubeck.com/2016/07/a-trombonists-tale-1385-tm-features-master-teacher-peter-ellefson/>.

<sup>10</sup> Arthur Lehman, *The Art of Euphonium Playing*, vol. 2 (Poughkeepsie, NY: Bob Hoe, 1977), 26.

suggests “tuning” the instrument sound as one would adjust the lows and highs on a high-fidelity stereo system:

If you turn off all the highs the sound will be dull and tubby. If you turn off all the lows, leaving only the extreme highs, the same sound will be thin and edgy. A mixture containing both highs and lows gives a more satisfactory sound...Some players may prefer a few more highs or lows...but there should never be an extreme imbalance in either direction.<sup>11</sup>

Milt Stevens, the late former principal trombone of the National Symphony Orchestra, provides another description of sound in his thought-provoking diagram, “Characterizing Tone Quality.”<sup>12</sup> Stevens begins by posing a question: asking “Is Your Sound.....?” He then lists 27 words commonly used to describe a beautiful sound; descriptors include words like, pure, rich, resonant, centered, etc. The “Characterizing Tone Quality” diagram then advances with, “Or Is Your Sound.....?” and then lists 30 descriptors of a poor trombone sound—fuzzy, narrow, pinched, raspy, etc. To demonstrate that different sounds are appropriate depending on the situation, he poses the final question, “Depending on the musical context, can your sound sometimes be.....?” and then lists 42 descriptors of situational sounds such as, bright, feminine, grotesque, hot, etc. Through this series of questions and descriptive prompts, Stevens suggests that trombone tone is a result of the individual player and represents a complex amalgamation of numerous characteristics. A jazz trombonist and a classical trombonist, for example, might very likely select different aspects of a “good” tone to describe their ideal sound. Trumpet pedagogue Louis Maggio restates this same concept in the *Original Louis Maggio System for Brass*, but adds a set of qualifications:

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<sup>11</sup> Fred Fox, *Essentials of Brass Playing: An Explicit, Logical Approach to Important Basic Factors that Contribute to Superior Brass Instrument Performance* (Van Nuys, CA: Alfred Publishing, 1974), 11.

<sup>12</sup> Milt Stevens, “Characterizing Tone Quality,” accessed June 1, 2017, <http://www.miltstevens.com/htmlpages/Characterizing%20Tone%20Quality.doc>.

We all have an idea of the sound we would like to have on our instrument. It may differ from student to student according to individual taste.

Yet, there is the natural free sound of the instrument that is always there...Once we have the rich, clear, raw sound of the instrument played by these principles, then we can develop a particular sound to fit the type of music we want to play.<sup>13</sup>

Maggio underscores the idea that while subtle differences in concepts of sound exist, some aspects are universal, regardless of performance medium. Maggio then proceeds to describe the requisites of a good sound, using the typical descriptors, “rich and big, dense core, centered pitch, relaxed, and fully controlled in all registers at all volumes.”<sup>14</sup> Despite subtle differences in concept of sound preferences, a “good” sound can clearly be approximated and described with some similarity between instrumentalists.

### **A Singing Style**

How then does one create a “good” sound on the trombone? Though the operation seems relatively simple, achieving the *highest* quality sound on the trombone can be more elusive. Many of the top performers in the trombone field describe a close connection between the way they play the instrument and singing. This singing style is often associated with the teachings of the late Chicago Symphony Orchestra tubist Arnold Jacobs, but most likely stems from brass playing traditions from even earlier. In United States Army Band trombonist William F. Raymond’s *The Trombone and its Player: A Theoretical and Practical Treatise on Both* dating from 1937, he discusses a singing style at length, stating, “When you start a tone you must make every effort

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<sup>13</sup> While originally designed for trumpet Louis Maggio’s method was later adapted by Carlton MacBeth for all brass instruments. Carlton MacBeth and Louis Maggio, *The Original Louis Maggio System for Brass* (North Hollywood, CA: Maggio Music Press, 1968), 16.

<sup>14</sup> *Ibid.*

possible to think you are singing the tone.”<sup>15</sup> Similarly, Deanna Swoboda, Assistant Professor of Tuba and Euphonium at Arizona State University further describes this concept in *The Brass Player’s Cookbook*, “We must continually remind our students that we are first singer and then instrumentalists. The instrument is merely an extension of our voices.”<sup>16</sup> Countless other references to singing within brass playing exist. Regardless of the origins of this concept, this singing approach pervades trombone pedagogy, as illustrated by its visibility within method books and literature.

Bass trombonist of the Chicago Symphony Orchestra, Charlie Vernon titled his method book, *A “Singing” Approach to Playing the Trombone (and other Brass)*, and suggests, “singing with the lips as if they were vocal cords.”<sup>17</sup> Similarly, trombonist and author David Vining in *What Every Trombonist Needs to Know about the Body* also reinforces this concept, adding that by “treating the lips as vocal cords...the trombone itself becomes an extension of what we are hearing in our heads.”<sup>18</sup> Mark Lawrence, retired principal trombone of the San Francisco Symphony describes the sound of the trombone in a video for the San Francisco Conservatory stating, “It’s a very earthy sound. It can be very powerful, it can be very sweet, it can be very mournful; it’s very much like the human voice, and the really good players on the instrument make it sound like the human voice.”<sup>19</sup> Performer, pedagogue, and author of several method books,

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<sup>15</sup> William F. Raymond, *The Trombone and its Player: A Theoretical and Practical Treatise on Both* (Cincinnati: Fillmore Music House, 1937), 9.

<sup>16</sup> Deanna Swoboda, “Spice Up Your Musicality: Dynamic Flavoring for Low Brass Players,” in *The Brass Player’s Cookbook*, edited by Kenneth Amis (Galesville, MD: Meredith Music Publications, 2006), 108.

<sup>17</sup> Charles Vernon, *A “Singing” Approach to the Trombone (and Other Brass)* (Atlanta: Atlanta Brass Society Press, 2009), 1.

<sup>18</sup> David Vining, *What Every Trombonist Needs to Know About the Body* (Flagstaff, AZ: Mountain Peak Music, 2010), 63.

<sup>19</sup> Mark Lawrence, “Mark Lawrence, Trombone” (video), posted January 8, 2017, accessed June 1, 2017, <https://sfc.edu/faculty/mark-lawrence>.

Dr. Brad Edwards in *Simply Singing for Winds: A Wellspring of Melodies for Building Tone and Technique* offers the advice that, “The essential thing when you play any instrument is to keep your “singing mind” awake. As Arnold Jacobs put it, be a great singer in your mind and let your instrument reflect this.”<sup>20</sup>

Another key aspect of the singing style of playing/sound centers on the development of a clear aural image of the music to be performed, or hearing the pitches in one’s head while playing. Vining elaborates on the concept by comparing the act of singing to playing the trombone. He parallels a singer’s imagination being translated to sound by the action of vocal cords with a trombonist’s aural concept being translated by the embouchure, referring to the air flow, lips, jaw, tongue, and facial muscles.<sup>21</sup>

In this study’s questionnaire, Edward Zadrozny, retired professor of trombone of the University of Akron, indicated that he utilizes singing to improve trombone tone, but specified, “I sing, but not in the traditional sense. My singing is all done internally. I merely want my performance to be a mirror of what I am singing internally.”<sup>22</sup> The concept of an “inner voice” can also be defined as *audiation*. A term coined by music theorist Edwin Gordon in the 1970s, audiation is defined as hearing or comprehending music for which the sound is no longer or may never be physically present. Gordon posits that, “Through audiation we interiorize singing and movement psychologically before we actually sing or move physically.”<sup>23</sup>

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<sup>20</sup> Brad Edwards, *Simply Singing for Winds: A Wellspring of Melodies for Building Tone and Technique* (n.p.: Brad Edwards, 2009), 31.

<sup>21</sup> Vining, *What Every Trombonist Needs to Know About the Body*, 63.

<sup>22</sup> Edward Zadrozny, Appendix C, 95.

<sup>23</sup> Edwin Gordon, “Audiation: A Theoretical and Practical Explanation,” *Koday Envoy* 20, no. 2 (Winter 1994): 12.

Many trombonists report an ease and efficiency that come hand in hand with the singing style sound. Vining defines this as, “Embouchure Equilibrium,” and Edwards equates it to finding a “point of resonance” for each note.<sup>24</sup> Edwards points out that the resonance of an instrument is optimized when the minimum effort produces the most vibration. If the air is forced less resonance results.<sup>25</sup> Influential pedagogue Reginald H. Fink provides a visual representation of this concept in *The Trombonist’s Handbook* (see figure 2), stating that, “A balanced combination of lip tension and breath pressure which is near the middle point of the line will result in a centered tone.”<sup>26</sup>

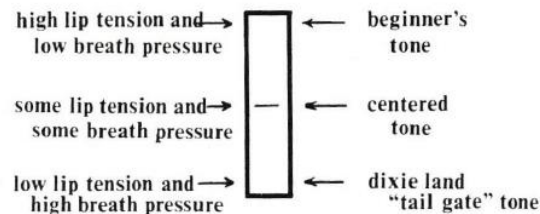


Figure 2. Anatomy of a Trombone Tone – Quality Variation. Reginald Fink, *The Trombonist’s Handbook: A Complete Guide to Playing and Teaching the Trombone* (Athens, OH: Accura Music, 1977), figure 21.

Like Vining, Fink describes an optimal resonance on the instrument that can be gained by developing a sensitivity to the various parts of the embouchure system working together, stating, “When your body is adjusted to the proper resonance, you can almost feel the tone of the instrument coming back up the mouthpiece pipe and resonating in

<sup>24</sup> Vining, *What Every Trombonist Needs to Know About the Body*, 69-75.

<sup>25</sup> Edwards offers a physical test to experience and understand resonance, “To experience resonance, try blowing warm air across the opening of a jug (or a straight mute), making it vibrate. Notice that if you force the air you get less resonance, not more. The lips are the same; they have a “point of resonance” for each note.” Brad Edwards, *Lip Slurs: Progressive Exercises for Building Tone and Technique* (Ithaca, NY: Ensemble Publications, 2006), 3.

<sup>26</sup> Reginald Fink, *The Trombonist’s Handbook: A Complete Guide to Playing and Teaching the Trombone* (Athens, OH: Accura Music, 1977), 17.

your oral cavities.”<sup>27</sup> Michael Mulcahy, second trombone of the Chicago Symphony Orchestra commented on the paradoxical nature of achieving an optimal balance of structure and breath in a 2014 interview, “If you listen to a great player play, you'll hear beautiful, clear, pure sound, that sounds effortless...” and later adds that, “...when you’re doing it right, it's quite close to doing nothing.”<sup>28</sup>

From a pedagogical standpoint, learning to sing with the lips, audiate, and achieve an air/embouchure equilibrium are incredibly complex topics. While poetic in concept, these ideas can be perplexing to master and perhaps even more difficult to teach.<sup>29</sup> The goal of this document is not to over-complicate sound production, but to explain a complex operation and provide insight on an idea that is difficult to conceptualize. A 1911 entry in *Grove’s Dictionary of Music and Musicians* states, “The trombone is a very simple instrument,” and while the assertion may seem naive, over-thinking and over-analyzing can be the bane of a budding trombonist. In the words of Metropolitan Opera trombonist Weston Sprott, “Obsessing over this type of thing can sometimes create more trouble than it's worth. For the most part, you can just hear the pitch in your head, try to sing it out of the instrument, and a lot of these...issues will naturally fall into place.”<sup>30</sup> An effortless singing style sound is something that can be

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<sup>27</sup> Fink, *The Trombonist’s Handbook*, 110.

<sup>28</sup> Michael Mulcahy, interview by Sarah Willis, "Mick Mulcahy Live from Chicago: Trombone, Music and Chicago Legends" (video), Sarah's Live Horn Hangouts, posted June 28, 2013, accessed October 28, 2014, <https://m.youtube.com/watch?v=Dsaz-2pIR2o>.

<sup>29</sup> Empire Brass tubist Kenneth Amis in an essay for *The Brass Player’s Cookbook* notes that, “When brass students are told to sing with their instrument or to bring out the music, they often simply play louder and with more vibrato.” Kenneth Amis, *The Brass Player’s Cookbook*, 4.

<sup>30</sup> Weston Sprott, “How Tongue Placement Relates to Range” Weston Sprott – Trombone – The Met Opera, accessed June 1, 2017, <https://westonsprott.com/articles/blog/how-tongue-placement-relates-to-range>.



learned and ultimately become an automatic operation; *non-traditional* tone development techniques may offer key advantages in developing this style sound.

## Chapter 3: Vocal Techniques

### Vowels

“Vowel sounds are special because they bring attention to mouth shape; one can gain increasing sensitivity to mouth shapes working with vowels.”

—Stuart Dempster, Appendix C

“Resonance is formed by vowel singing.”

—Chas Colin, *Advanced Lip Flexibilities*

As preeminent avantgarde trombonist Stuart Dempster in the quote above alludes, the experimentation of vowel usage while playing the trombone can be beneficial in improving one’s sound.<sup>31</sup> Dr. Donald Appert in *A Progressive Study of Multiphonics on the Trombone* brands this technique “phonetization,”<sup>32</sup> Benny Sluchin in a *Practical Introduction to Contemporary Trombone Techniques* describes it as “vocalisation [sic],”<sup>33</sup> Giancarlo Schiaffini in *The Trombone: Increasing its Technical and Expressive Capacities* terms it as “vowel distortion,”<sup>34</sup> but all authors are essentially referring to the same vowel usage described by Dempster at the opening of this chapter and by extension within his influential writing, *The Modern Trombone: A Definition of its Idioms*. While many applications of vowels to trombone performance

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<sup>31</sup> The first quote at the head of this chapter was a response from Stuart Dempster extracted from this study’s questionnaire. The response was given in answer to the query, “Are there any other non-traditional methods of tone development that you utilize that have not been mentioned in this questionnaire? If so, please describe.” Dempster’s response spurred the inclusion of vowels in this section of the document.

<sup>32</sup> Donald Appert, *A Progressive Study of Multiphonics on the Trombone* (West Springfield, MA: Trombone Association Publishing, 1978), 22.

<sup>33</sup> Benny Sluchin, *Practical Introduction to Contemporary Trombone Techniques: 20<sup>th</sup> Century Excerpts* (Paris: Editions Musicales Européennes, 1995), 17.

<sup>34</sup> Giancarlo Schiaffini, *The Trombone: Increasing its Technical and Expressive Capacities* (Milano: Ricordi, 1982), 21.

exist, this section focuses on standard buzzed vowels and buzzed lip vowel harmonics, which result from the slow movement between different vowels.<sup>35</sup> Sluchin provides a comprehensive definition stating, “this technique consists of changing the mouth cavity while playing, thus obtaining a sound with varied spectral components. In this way, one hears the main pitch (fundamental) and the harmonics that are reinforced because of the corresponding resonance of the mouth.”<sup>36</sup>

Dempster gives a rudimentary introduction to the production of vowels in the *The Modern Trombone*, noting that the first step is to learn to produce standard vowel shapes on the trombone: “a (ah), i (ee), e (ā), o (ō or Oh), u (ōō)...”<sup>37</sup> Both Dempster and Sluchin mention that the ideal range for harmonic production lies between B-flat and F. As no extensive exercises exploring this idea are included in the previously mentioned texts, the principle has been organized into a very basic exercise in figure 3:

Figure 3. Vowel Exercise

(A) (E) (I) (O) (U)

Vowel Shape: ah-----ā-----ee-----oh-----ōō----- ah-----ā-----ee-----oh-----ōō-----

ah-----ā-----ee-----oh-----ōō----- ah-----ā-----ee-----oh-----ōō-----

ah-----ā-----ee-----oh-----ōō----- ah-----ā-----ee-----oh-----ōō-----

<sup>35</sup> Dempster categorizes the use of vowels into the following types: buzzed vowels, vowel harmonics, vocal vowels, and buzzed lip and muted vowel harmonics. Stuart Dempster, *The Modern Trombone: A Definition of its Idioms* (Rochester, NY: Accura Music, 1994), 14.

<sup>36</sup> Sluchin, *Practical Introduction to Contemporary Trombone Techniques*, 17.

<sup>37</sup> Dempster, *The Modern Trombone*, 13.

Many method books advocate playing with an open oral cavity and throat. Some pedagogues view lip slurs—typically regarded as a very *traditional* method of sound development—as improving sound by encouraging the opening or expansion of the oral cavity.<sup>38</sup> Non-traditional exercises such as figure 3, expand on this idea by encouraging students and performers to reach new levels of openness and resonance in the oral cavity through stretching and experimentation.

While active alteration and shifting between vowels is discussed in contemporary and extended technique texts, the use of vowels, or syllables that promote vowel shape is seen prevalently in many *traditional* trombone method books. Paul Tanner in *Practical Hints on Playing the Trombone* mentions, “there is always a great deal of discussion about what syllables to use... The main objective for a player to keep in mind concerning these syllables is that his oral cavity (actually a resonating chamber) should be kept as open as possible.”<sup>39</sup> As Tanner indicates, trombonists adopt many different approaches and techniques in applying vowel syllables to playing; perhaps the most prevalent strategy includes the use of an “Ah” syllable in the low range, “Oh” in the mid range and “Ee” in the upper range.<sup>40</sup> Ben van Dijk, bass trombonist of the Rotterdam Philharmonic Orchestra, comments on this concept in his own method book stating, “The low notes require a greater volume of air to produce a great tone. Imagine making an ‘ah’ sound in your mouth and directing the air into a large tube... The high

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<sup>38</sup> Clarence Sawhill explains the benefits of lip slurs in *Practice with the Experts*: “The main object of this work is a good basic sound. The exercise is constructed in such a way as to open not only the facial cavities but the entire resonance chamber.” Clarence Sawhill, as collected by Paul Tanner in *Practice with the Experts*. Tanner, *Practice with the Experts*, 36.

<sup>39</sup> Tanner, *Practical Hints on Playing the Trombone*, 14.

<sup>40</sup> This strategy or some variation of it can be found many texts—a select few in example include: Brad Edward’s *Trombone Craft*, Donald Reinhardt’s *Pivot System for Trombone*, Louis Maggio’s *Original Louis Maggio System for Brass*, and Chas Colin’s *Advanced Lip Flexibilities*.

notes require fast air. Imagine saying an ‘e’ sound in your mouth and directing the air super fast into a small straw!”<sup>41</sup> In *Essentials of Brass Playing*, Fred Fox encourages players to experiment with bringing notes into focus, explaining, “as you sustain the note vary the tongue position from “ee” to “aw” and find a position midway between the extremes that sounds best to you. The note is now in focus.”<sup>42</sup>

Retired University of Northern Colorado trombone professor Buddy Baker takes this notion of “note focus” even further, claiming in his *Tenor Trombone Handbook*, that, “...there is a different oral cavity (resonating cavity) for every pitch on the trombone. The correct oral cavity for a given note will produce the most warmth and vibrancy for that pitch.”<sup>43</sup> This concept is inherently related to the singing style trombone sound discussed in the previous chapter, and has parallels to Vining’s idea of “embouchure equilibrium” and Edward’s claim of a “point of resonance” for every note. William F. Raymond, in *The Trombone and its Player* comments on this idea as well, suggesting that internally singing can be used to control vowel usage, and other aspects of the vocal tract:

You will note...that the tongue after starting a sustained tone withdraws itself from the roof as far as possible thus causing the throat to open. This is the identical condition when one sings the tone. If you do this properly you will make a resonator of the throat.

If you will open your mouth and sing a resonant “ah” in the lower staff, you will note that your throat seems to be stretching itself open.... Nothing must retard the smooth flow of air from the lungs to the lips. When you start a tone you must make every effort possible to think you are singing the tone.<sup>44</sup>

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<sup>41</sup> Ben van Dijk, *Ben’s Basics: for Bass/Tenor Trombone + F Attachment* (Den Haag, The Netherlands: BVD Music Productions, 2004), 54.

<sup>42</sup> Fox, *Essentials of Brass Playing*, 11.

<sup>43</sup> Buddy Baker, *Tenor Trombone Method: An Approach to Trombone Basics, Warm-Up, and Daily Routine for Tenor Trombone with or without F-Attachment* (Miami: Warner Bros. Publications, 1983), 19.

<sup>44</sup> Raymond, *The Trombone and its Player*, 9.

Schiaffini also discusses how the vocal tract is paramount in determining the quality of trombone sound and emphasizes the importance of a player, “pitching the tone before it reaches the instrument...” Though conveyed differently, these concepts separated by expanses of time, geographic location, and language, all arrive at a style of trombone performance informed by singing.<sup>45</sup> While this style of vowel usage is clearly a traditional trombone technique, it is mentioned here in detail, as this document explores other vocal techniques that can be used to enhance, remind, and expand on this idea, such as the previously mentioned vowel studies.

### *Throat Tuning and Vocal Tract Resonance*

Robert Dick, contemporary flutist and advocate of extended technique use in tone development, offers many concepts in his *Tone Development Through Extended Techniques* that are universally applicable to a variety of instruments, including the trombone. What Dick calls “throat tuning” is intimately connected to the concepts of oral cavity resonance and vowel usage discussed in the previous sections. A complex phenomenon, Dick offers the following explanation:

If one looks under the bars of a vibraphone, a resonator tube is found beneath each bar. Each of these tubes is of the correct length to amplify its note, and the throat can function in a similar, but far more sophisticated manner. In order for this to happen, the vocal chords are held in the same position they would be if one were preparing to sing the note about to be played.<sup>46</sup>

To accomplish throat tuning, Dick suggests that a performer silently sing along with themselves as they play.<sup>47</sup> The acoustic science community has attempted to test this

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<sup>45</sup> American trombonist William Raymond’s *The Trombone and its Player* was published in 1937, while Italian trombonist Giancarlo Schiaffini’s *The Trombone* was published in 1982 in Italian with English translation.

<sup>46</sup> Dick, *Tone Development Through Extended Techniques*, 9.

<sup>47</sup> Robert Dick, “Throat Tuning Part 1” (video). August 9, 2009, accessed June 1, 2017, <https://www.youtube.com/watch?v=FCxXc5p96YA>.

theory, labeling it “vocal tract resonance.” Their findings may suggest that players actively or subconsciously alter the oral cavity while playing, and that the most efficient method of playing is one in which the oral cavity is shaped to the resonant frequency of the note being played.<sup>48</sup> Throat tuning and vocal tract resonance are mentioned here because the primary method that Dick uses to cultivate throat tuning is through singing and playing in unison; a non-traditional technique discussed in the subsequent section.

### **Singing and Playing in Unison**

Singing and playing in unison is a technique in which a trombonist sings while playing the same pitch on the instrument. This technique is mentioned in several contemporary technique books such as Dempster’s *The Modern Trombone*, Appert’s *A Progressive Study of Multiphonics*, and Jen Baker’s *Hooked on Multiphonics*. These manuals provide thorough explanations of singing and playing and rudimentary exercises for developing the singing and playing in unison technique. Singing and playing in unison is often used as the first step in teaching multiphonics.

While these resources thoroughly explore contemporary techniques, they do not fully examine or apply these techniques to tone development. In research, no instance of unison singing and playing being used for tone improvement was found, however, the results of this study’s questionnaire indicated that 35% of participants used this technique to improve their tone on the trombone. Because no examples were provided by participants, an application of this technique applied to the most common tone development exercise (long tones) is shown in figure 4:

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<sup>48</sup> Vincent Fréour et al, “In-Vitro and Numerical Investigations of the Influence of a Vocal-Tract Resonance on Lip Auto-Oscillations in Trombone Performance,” *Acta Acustica United with Acustica* 101, no. 2, (March / April 2015): 256-69.

Figure 4. Sing and Play in Unison Long Tone Exercise. This exercise is based on the first long tone exercise found in Max Schlossberg's *Daily Drills and Technical Studies for Trombone*.

= Sing and Play Simultaneously

**Very Slow** ,

*mf* 1----- , 2----- , 3----- , 4----- , 5----- , 6----- , 7-----

*mf* 1----- 2----- 3----- 4----- 5----- 6----- 7-----

*mf* 1----- 2----- 3----- 4----- 5----- 6----- 7-----

The effectiveness of singing and playing in unison for improving the overall traditional trombone tone may stem from the vocal connections previously mentioned in the concept of sound chapter; if a player seeks to develop an inner singing voice in one's mind, singing and playing in unison is a logical stepping point between singing, singing in one's head, and actually playing. Additionally, this practice may help establish a connection between oral cavity shape and the pitch being played through the instrument, by encouraging the performer to form the correct oral cavity for each pitch.

### Multiphonics

Multiphonics are a technique whereby a player produces two or more pitches at the same time. The trombone is capable of producing several distinct styles of multiphonics; Dempster, in *The Modern Trombone* mentions many, including varying the oral cavity by shifting vowel shape, using a wa-wa mute to produce multiphonics, split tone multiphonics, and of course the most widely accepted definition of



multiphonics in the brass idiom, singing and playing the trombone simultaneously.<sup>49</sup>

Complex combinations of many of these techniques, such as varying the oral cavity while singing and playing are possible and add additional depth to multiphonic study.

Questionnaire results indicated that just under 20% of participants utilize multiphonics as a method to improve their overall tone. Similarly to singing and playing in unison, the use of multiphonics for developing traditional sound is virtually nonexistent in traditional method books and literature. However, multiple participants noted that multiphonics can aid in the formation and resetting of traditional embouchure placement, resulting in a better sound.<sup>50</sup>

Despite the lack of tone studies utilizing multiphonics in traditional literature, one exemplary example exists in the form of a 1991 interview published in the *Online Trombone Journal*. In the interview, jazz trombonist Dick Griffin discusses the benefits of multiphonics to alleviate a “pinched sound,” and advocates the use of multiphonics in conjunction with long tones as part of his daily warm-up routine.<sup>51</sup> While a notated example of this routine was not included in the interview, the following exercises are representative of the application of multiphonics to long tones:

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<sup>49</sup> Dempster, *The Modern Trombone*, 5-12.

<sup>50</sup> Both James Decker and Jen Baker commented on this aspect in the questionnaire. See Appendix C, 96.

<sup>51</sup> Dick Griffin, interview by Bob Bernotas, “Masterclass with Dick Griffin: Multiphonics on the Trombone.” *Online Trombone Journal* 1991; revised 1999, accessed March 1, 2016, <http://trombone.org/articles/library/viewarticles.asp?ArtID=85>.

Figure 5. Multiphonic Long Tone Exercise, Perfect Fifth

-Sing Upper Diamond Note  
-Play Bottom Note

Figure 6. Multiphonic Long Tone Exercise, Major Tenth

-Sing Upper Diamond Note  
-Play Bottom Note

Figure 5 utilizes the multiphonic interval of a perfect fifth and figure 6 the major tenth. Perfect fifths and major tenths were selected based on the comments of Dempster in this study's questionnaire. Dempster highlighted that these resonant intervals—the perfect fifth and the major tenth—work particularly well in relaxing a player's throat.<sup>52</sup>

Multiphonics inherently carry with them the limitations of the performing trombonist's voice range. Performer's should take care not to strain the vocal cords

<sup>52</sup> Stuart Dempster, Appendix C, 96.

while attempting these exercises.<sup>53</sup> Figures 5 and 6 were designed to fall in a singing range applicable for most male and female trombonists. Players should start in a range that is comfortable for his or her voice, and only over longer periods of time attempt to expand their range of singing.

The use of multiphonics are beneficial in improving tone, in that they require a performer to commit to a continuous stream of air while playing. Multiphonics also encourage an expansion of the vocal tract and inclusion of other overtones (both above and below the fundamental). Appert confirms this idea in *A Progressive Study of Multiphonics on the Trombone*, advising performers to use more air than normal for multiphonics, and that, “Singing a pitch adds vibrations (or waves) to the sound that you will not be accustomed to hearing.”<sup>54</sup> Striving for a balance of overtones within trombone sound is mentioned in several important trombone texts, most prominently Edward Kleinhammer’s, *The Art of Trombone Playing*:

The science of acoustics proves that a tone is composed of two or more elements called partials. The lowest and the most predominant one determines the pitch of the sound, and is called the *fundamental*. The quality of a tone is determined by the number and intensity of overtones or partials present in the sound in addition to the fundamental. In other words, the more overtones, the richer the sound.<sup>55</sup>

While trombonists often take for granted the importance of overtones within the sound, these overtones are integral to beautiful tone. Ben van Dijk voices his frustration in his own method book commenting, “I think a big mistake many bass players make is that in their effort to make the sound big they forget to keep some higher overtones in their

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<sup>53</sup> Jen Baker in *Hooked on Multiphonics* emphasizes the importance of vocal cord health, and spends a full two pages discussing endurance, optimal vocal care, and strategies to avoid vocal strain. Jen Baker, *Hooked on Multiphonics: Multiphonics and other Extended Techniques Demystified* (Raleigh, NC: Lulu Publishing Services, 2016) 12-13.

<sup>54</sup> Appert, *A Progressive Study of Multiphonics*, 1.

<sup>55</sup> Edward Kleinhammer, *The Art of Trombone Playing* (Evanston, IL: Summy-Birchard, 1963), 36.

sound. Their sound becomes unfocused, very dull, and not easy to play with for either tuba players or tenor trombonists. I like to think of a pyramid sound with a wide bottom and a rich top to it.”<sup>56</sup> Dijk’s comments are reminiscent of Art Lehman’s visual representation of tone described in Chapter 2, and reinforce the importance of a balance of overtones in the production of an ideal sound.

Exposure to multiphonics can expand a trombonist’s tonal palate by revealing previously unknown overtone possibilities. Additionally, maintaining a steady in-tune pitch of both voice and tone during multiphonics requires a higher level of concentration and may aid in the discovery of an optimal “point of resonance” for each note as discussed in the concept of tone chapter.

### **Alternating between Singing and Playing**

Alternating between singing and playing is the immediate alternation between singing vocally (not through the instrument as in multiphonics) and playing the instrument. While certainly not a new technique, interesting variations exist, that bear mentioning here. Players often sing a phrase, and immediately repeat the same phrase with the instrument, however, alternating between singing and playing is not restricted to this alone. Another strategy utilizing this technique is to follow a “play a measure, sing a measure” pattern, though the duration of playing/singing is certainly not limited to one measure increments.

David Vining presents this idea at length in *Ear Training for Trombone*. Vining’s publication begins with very basic exercises consisting of slow alternation of playing a pitch then singing the same pitch and gradually adds complexity over the

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<sup>56</sup> Dijk, *Ben’s Basics*, 80.

course of the book. The final exercises consist of alternating randomized advanced intervals and the alternation of longer phrases of more complicated melodies such as orchestral excerpts, like the *Tuba mirum* from Mozart's *Requiem* and selected melodious etudes by Bordogni.<sup>57</sup>

The questionnaire revealed that over 70% of participants utilized alternating singing and playing and an even larger 85% used singing in some form to improve their overall trombone tone. References to the technique aiding in the acquisition of a singing style sound were prevalent in the comments of the questionnaire. James Decker of Texas Tech University, commented that he used this strategy to draw comparisons between singing and playing and to “emulate the natural musicality of singing into the playing.”<sup>58</sup> John Marcellus, retired professor of trombone at Eastman School of Music, recognizes the benefits of integrating performing and singing in the foreword to Vining's *Ear Training for Trombone*, commenting that the alternation of singing and playing enables, “the student to internalize the music in his mind.” Marcellus later writes that the internalization of intervals results in more consistent and reliable tone and intonation.<sup>59</sup>

#### *Sing, Buzz, Play, and Other Variations*

Similar to alternating singing and playing, several performers and teachers add the intermediary step of buzzing between singing and playing.<sup>60</sup> Brad Edward's *Trombone Craft* features an extensive appendix section entitled, “Flow Exercises (sing,

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<sup>57</sup> David Vining, *Ear Training for Trombone* (New York: Carl Fischer, 2008).

<sup>58</sup> James Decker, Appendix C, 96.

<sup>59</sup> John Marcellus, foreword to *Ear Training for Trombone*, 3.

<sup>60</sup> While several variations of buzzing exist as outlined in the “Buzzing” chapter of this document (see chapter 5), buzzing in this section refers, but is not restricted to standard mouthpiece buzzing.

buzz, play),” where he explains, “By going back and forth between your instrument and singing/buzzing, you can develop a more natural singing approach without focusing too much on mechanics.”<sup>61</sup> Edwards recommends applying this technique to simple melodies. The “sing, buzz, play” word combination is not unique to Edwards however; Frank Williams in *Trombone Chops*, includes the instructions to, “Sing, Buzz, Play!”<sup>62</sup> as an exercise for the warm-up of the embouchure and ears. Dr. Bruce Faske, Artist/Instructor of Trombone at Arkansas State University, expands on the concept of sing, buzz, play, in a presentation entitled, “Sing your Way to Better Trombone Playing.” Nicknamed a “Practice Circle,” Faske loops the sequence of “play, sing, buzz, sing, play,” asserting that the approach develops the ear, a centered tone, and requires the student to avoid using the instrument as a “pitch approximator.”<sup>63</sup> The combination of singing, buzzing, then playing, as well as other variations of this basic combination, offer many of the same benefits as singing and playing.

### **Flutter Tongue**

Flutter tonguing is a non-traditional technique produced by rolling the tongue in the vocal fashion of an Italian ‘R’ while playing through the trombone. Though not typically categorized as a “vocal” technique, flutter tonguing involves adjustments to the oral cavity similar to the other vocal techniques discussed in this chapter. Many trombonists mention using flutter tonguing to improve tone production. Dayton Philharmonic Orchestra trombonist Richard Begel uses flutter tonguing to enhance

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<sup>61</sup> Brad Edwards, *Trombone Craft: A Musical Approach to Building Tone and Technique* (n.p.: Brad Edwards, 2012), 162.

<sup>62</sup> Frank Williams, *Trombone Chops: The Ultimate Guide to Building Tone, Technique and Flexibility* (New York: Carl Fischer, 2012), 11.

<sup>63</sup> Bruce Faske, “Sing your Way to Better Trombone Playing” (clinic presented at the Arkansas Music Conference, February 17, 2017), 2-3, accessed June 7, 2017, <http://www.faskemusic.com/uploads/1/2/3/8/12387959/singyourwaytobettertromboneplaying.pdf>.

airflow and tone quality. Described in detail in his book, *A Modern Guide for Trombonists and Other Musicians*, Begel comments on the efficiency of flutter tonguing as a pedagogical tool to improve tone due to the increased resistance the technique creates.<sup>64</sup> This resistance in turn encourages an increase in support, resulting in better sound once the flutter tongue is removed.

Just under half the questionnaire participants from this study indicated that they utilized flutter tonguing for the development of tone. Many commented on the technique's utility in stimulating air support and addressing air problems. Dr. Irvin Wagner, of the University of Oklahoma, described the value of flutter tonguing succinctly stating, "I frequently use this to help the student understand that one has to keep the air going constantly when playing, and flutter tonguing is a great way to get this across to students. It is understood that a flutter tongue will not happen unless the air is moving, and this is a super "eye opener" for students."<sup>65</sup> While no specific exercises involving flutter tonguing and tone production were provided by survey participants, logically this technique may be applied to basic warm-up exercises such as long tones and lip slurs or similar etudes.

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<sup>64</sup> Richard Begel, *A Modern Guide for Trombonists and Other Musicians* (Dayton: Richard Begel/Wealthy Dog Productions, 2002).

<sup>65</sup> Irvin Wagner, Appendix C, 97.

## Chapter 4: External Devices

### Mutes

Get into the habit of playing the first five minutes of your earliest daily sessions with a mute. Your tone production will be the better for it.

—Jeff Reynolds, *A Comprehensive Workbook*

Designed to fit inside or around the trombone bell, mutes dampen and alter the trombone timbre. Various types of mutes exist, each exhibiting a unique character. Though not originally intended as a tone production aid, as the Reynolds quote at the head of this chapter suggests, many trombonists attest to the usefulness of mutes in refining tone quality.

In a 1992 article in the *International Trombone Association Journal* entitled, “A Practical Aid to a Beautiful Sound,” retired London Symphony Orchestra trombonist, Denis Wick, comments on the importance of playing with an open throat and describes several mute exercises trombonists can do to achieve an open throat and open sound. The exercises rely on the use of a mute to condition the trombonist into playing with an open throat. Wick claims that over time the optimal open throat playing position can be remembered and replicated on the trombone without the use of a mute.<sup>66</sup>

Approximately 45% of questionnaire participants who used external devices, utilized mutes to improve their tone on the trombone.<sup>67</sup> Several participants commented that using a mute aided in what they described as the expansion of their throat, or in the

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<sup>66</sup> Denis Wick, “A Practical Aid to a Beautiful Sound,” *ITA Journal* 20, no. 2 (Spring 1992): 36, accessed September 23, 2014, <http://www.trombone.net/members/journal/1992/april/index.cfm?>.

<sup>67</sup> This percentage was adjusted down for participants that commented that they did not use mutes specifically for the improvement of their sound.



opening up their sound. Trombone soloist Brett Baker makes similar remarks on his website, advocating the use of mutes to, “open the glottis and increase sound.”<sup>68</sup> On the questionnaire, James Decker observed that the use of a metal practice mute resulted in “greater resonance on the open horn.”<sup>69</sup>

Notably, the only type of mute explicitly cited for tone development was the practice mute. A type of mute designed to drastically dampen trombone sound, practice mutes are ideal for situations where one cannot play the instrument openly, such as a hotel room or backstage during a performance. Interestingly, several participants noted that a Denis Wick brand practice mute specifically was well suited for this type of exercise.

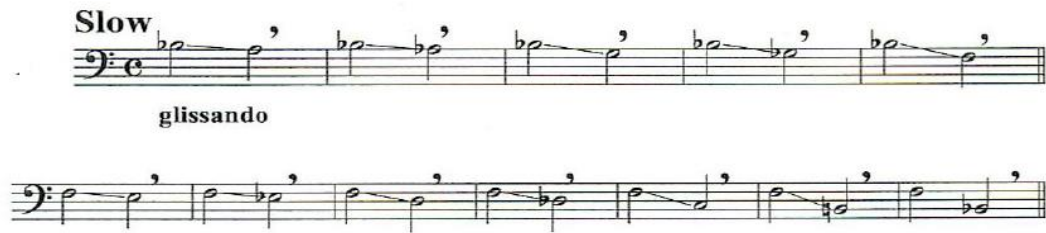
Further research uncovered additional examples of mutes being used for sound development. In a warm-up routine for the 2010 International Trombone Festival, Brent Phillips of Baylor University includes a glissando long tone exercise that calls for the use of a practice mute (see figure 7). He directs trombonists to play the exercise first with a practice mute and then open.

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<sup>68</sup> Brett Baker, “Workshop Notes/Hints,” Brett Baker, 2012, accessed June 1, 2017, <http://www.brettbaker.co.uk/practice-studio/workshop-notes-hints>.

<sup>69</sup> James Decker, Appendix C, 92.

Figure 7. Practice Mute Playing. Sample of exercise, see Brent Phillips, “Daily Warm Up and Conditioning Routine” (lecture presented at the International Trombone Festival, 2010), 3-4, accessed June 1, 2017, [http://baylortrumpets.weebly.com/uploads/1/4/5/0/14502268/daily\\_warm\\_up\\_and\\_conditioning\\_routine-2.docx](http://baylortrumpets.weebly.com/uploads/1/4/5/0/14502268/daily_warm_up_and_conditioning_routine-2.docx).



Dr. Brad Edwards includes the practice mute in a pair of exercises entitled, “Opening Up the Sound” in the tone and tuning appendix of his *Trombone Craft*. Like Phillips, Edward’s exercises utilize glissandos and focus on developing projection through an emphasis on the louder dynamic range (*forte* or louder). His instructions explain, “The mute provides resistance. Breathe deeply and play very loudly into the mute (metal practice mutes often get a raspy, buzzing sound at louder dynamics). Then, remove the mute and just play big without forcing.”<sup>70</sup> Questionnaire participants described similar experiences regarding mutes; Dr. Irvin Wagner wrote, “This assists in striving to get a rich, full tone because one has to blow more air when using the practice mute.”<sup>71</sup> Dr. Natalie Mannix, of The University of North Texas, similarly adds that a, “practice mute can improve tone by making air more immediate.”<sup>72</sup> By adding resistance and encouraging an open throat and proper air flow, mutes are helpful in developing trombone tone and represent the most common external device used for tone production.

<sup>70</sup> Edwards, *Trombone Craft*, 141.

<sup>71</sup> Irvin Wagner, Appendix C, 92.

<sup>72</sup> Natalie Mannix, Appendix C, 92.

## Other Apparatuses Targeting Sound

Numerous commercially available devices claim to improve sound by strengthening and developing the embouchure. The questionnaire revealed that approximately 12% of participants used these types of devices and only the Warburton P.E.T.E (Personal Embouchure Trainer Exerciser) was explicitly cited as being utilized. Accordingly, few discussions of these apparatuses appear within trombone literature. This section describes many of the devices available and explores the exercises associated with each.

The Warburton P.E.T.E. is a device that isometrically exercises the embouchure. After placing the P.E.T.E. in the mouth between the lips and front teeth, the user simply pulls on one end of the device, effectively initiating a “tug of war” between the embouchure muscles and the force applied away from the face. The P.E.T.E. has two different sides which reportedly exercise the embouchure muscles in slightly different ways.<sup>73</sup> Chop-Sticks Advance Embouchure Training System adopts a similar approach to the P.E.T.E. and is advertised as an advanced version of Donald Reinhardt’s “pencil routine.”<sup>74</sup> To use this strengthener, the player inserts the Chop-Sticks into one’s mouth and attempts to hold the device horizontally for durations of time using only the strength of their embouchure. Chop-Sticks utilizes a system of increasing weights to condition the embouchure in this fashion.<sup>75</sup>

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<sup>73</sup> “P.E.T.E. - Personal Embouchure Training Exerciser,” Warburton, 2013, accessed June 1, 2017. <http://www.warburton-usa.com/index.php/products/accessories/36-accessories/190-PETE>.

<sup>74</sup> Donald S. Reinhardt, *Encyclopedia of the Pivot System: for All Cupped Mouthpiece Brass Instruments*, (New York: Charles Colin, 1973), A-43.

<sup>75</sup> “How the Chop-Sticks Program Works,” Liemartech, 2001, accessed June 1, 2017, <http://www.liemartech.com/Chop-Sticks/>.

Several anti-mouthpiece pressure devices exist as well. Designed to teach trombonists to use less force while playing, two examples include the Stratos Embouchure Trainer Set and the Stolzel Methodic Practice Adapter.<sup>76</sup> Both devices are used in conjunction with the instrument and effectively work by closing off airflow to the horn if too much mouthpiece pressure is used.

Staccator allows wind players to practice articulation without the instrument. The device's creator, Chris Cigolea, further claims that using the Staccator holds the additional benefit of improving sound production.<sup>77</sup> The device is essentially a flat hard piece of plastic with a bendable loop of plastic attached to it that player's use to direct the airstream and articulation at. If done correctly the staccato makes an audible "tap" as it rebounds off the hard plastic.

Despite the pinwheel's close association with childhood, this simple toy has been cited by numerous trombonists as an effective method of improving tone. A pinwheel is generally constructed of two parts: a thin rod typically made of plastic or wood that serves as the handle, and a windmill or fan shaped wheel attached to the rod. The wheel is activated and spins when air is directed at it, typically by a user blowing into it or moving the pinwheel forcefully through the air. M. Dee Stewart of Indiana University frequently utilizes pinwheels for instruction and development of a better trombone tone. Stewart employs several different types of pinwheels to target different aspects of playing. For example, he uses a multi-branched pinwheel for the teaching of

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<sup>76</sup> "Stozel Methodic Practice Adapter," Thomann, accessed May 1, 2017, [https://www.thomann.de/be/stoelzel\\_methodischer\\_uebungsadapter\\_pos.htm](https://www.thomann.de/be/stoelzel_methodischer_uebungsadapter_pos.htm), <http://www.warburton-usa.com/index.php/accessories/344-stratos-embouchure-training-system>.

<sup>77</sup> Chris Cigolea, "About the Staccator," Easy Choice Music, accessed May 1, 2017, <http://www.easychoicemusic.com/about/>.

low notes that requires the user to send a larger, wider stream of air to initiate movement on each pinwheel.

Stewart commonly asks students to stand with the trombone in the left hand and a pinwheel in the right. In the exercise, a player holds a pinwheel while in the standard trombone playing position, takes two full breaths on the pin wheel at arm's length away, then drops the pinwheel, and after a third breath sends the same type of efficient air/breath cultivated by pinwheel usage through the trombone. As no actual notated version of this exercise was given, figure 8 seeks to apply this approach in a systematic way.

Figure 8. Pinwheel Exercise. Based on the exercise described by M. Dee Stewart in an instruction video entitled, "Pinwheel Pedagogy: Introduction." M. Dee Stewart, "Pinwheel Pedagogy: Introduction," (video), accessed May 1, 2017, <http://www.banddirector.com/videodirect/m-dee-stewart/pinwheel-pedagogy-introduction/>.

♫ = Blow Pinwheel  
↓ = Drop Pinwheel

The musical notation is in bass clef, 4/4 time, and key of B-flat. It consists of three measures. The first measure contains a quarter rest followed by a quarter note with a pinwheel symbol. The second measure contains a quarter rest followed by a quarter note with a pinwheel symbol. The third measure contains a quarter rest followed by a quarter note with a pinwheel symbol, then a downward arrow, a quarter rest, and a quarter note with a pinwheel symbol. The word "Play" is written above the final note.

In an interview with NPR reporter Annie Corrigan, Stewart commented on the importance of mental preparation in successful trombone performance, reflecting that players often get carried away, causing problems and overcomplicating the simple

process of breathing and blowing.<sup>78</sup> In this way, the effectiveness of using a pinwheel lies in its simplicity. Stewart describes the process as almost tricking the user into breathing and blowing without thinking about it. With an overarching aim at efficient tone production, Stewart, describes the pinwheel phenomenon:

The amount of air we use on the pinwheel is more than what we use on the trombone. But what I want you to carry over from the pinwheel to the trombone is that ease and that flow going without any resistance...and that's the way I want to play the trombone. The horn is an open tube and air goes right through it. I know horns respond differently, but in terms of holding back the air, it doesn't really hold back the air. So if we can play with that same free blowing, then the embouchure has a chance to vibrate. If you're getting that air to flow through the lips freely, then they've really got a chance to vibrate efficiently, and that's where your resonance comes from.<sup>79</sup>

A true testament to Stewart's impact within the trombone community, a surprising 34.48% of participants that utilized external devices used a pinwheel as a teaching tool or for personal development. Pinwheels were selected here over other breathing devices such as spirometers, because they are primarily used for sound production rather than lung capacity. As previously discussed, tone is a complex amalgam of many factors that merge to form a finished product. Breathing and the development of a "good" breath is certainly an important aspect of tone production, and is discussed in countless resources. While the quality of a player's inhalation no doubt impacts exhalation, and therefore sound production, the many breathing devices and stretching routines available extend beyond the scope of this document.

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<sup>78</sup> M. Dee Stewart, interview by Annie Corrigan, "Dee Stewart: Sports, Pinwheels, and Bass Trombone," Indiana Public Media, July 27, 2010, accessed May 1, 2017, <http://indianapublicmedia.org/arts/dee-stewart-sports-pinwheels-bass-trombone/>.

<sup>79</sup> This statement comes from a 2011 lesson that was recorded as part of a treatise on the pedagogy of Stewart. M. Dee Stewart, as recorded by Graydon McGrannahan, "The Pedagogical Contributions of M. Dee Stewart to the Study of Trombone," (DM treatise, Florida State University, 2011), 32.

## Chapter 5: Buzzing

The quickest way to a golden tone is through mouthpiece buzzing.

—Mike Roylance, *The Brass Player's Cookbook*

There are myriad ways to buzz your lips. Many are radically different from anything you'd want to do to play a brass instrument, so your first task is to be sure that what you're doing functions with the mouthpiece and with the horn.

—Sam Burtis, *The American Trombone*

Buzzing is a generalized term that, in the trombone idiom, refers to the act of buzzing or vibrating one's lips on a mouthpiece while the mouthpiece is detached from the instrument. By removing the distraction of the instrument and practicing the mouthpiece solitarily, players and teachers are often able to detect and remedy fundamental performance issues with greater ease.<sup>80</sup> However, buzzing is not without its critics; the debate over buzzing is perhaps the most embroiled topic of disagreement among trombonists. While some express concerns for the potential harm this technique may cause, others swear by its effectiveness.

This study's questionnaire revealed that 89.47% of participants buzzed their mouthpiece in some compacity. Dr. David Begnoche of Texas Christian University commented that he uses buzzing but also recognizes the importance of moderation, writing: "I use mouthpiece buzzing myself and with my students regularly but sparingly (in specifically targeted ways) 'all things in moderation'. Indeed, even healthy things done to excess or used/performed improperly can be problematic..."<sup>81</sup> Oklahoma State

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<sup>80</sup> This concept is mentioned and expanded on in at chapter entitled, "Mouthpiece Practice," in Edward Kleinhammer's monumental text, *The Art of Trombone Playing*. Kleinhammer, *The Art of Trombone Playing*, 31.

<sup>81</sup> David Begnoche, Appendix C, 85.

University professor Paul Compton, similarly called for moderation and addressed the debate more directly expressing, “I think the recent battles between those who buzz and those who don't is excessive. Moderation is the key.”<sup>82</sup> The argument over to buzz or not to buzz aside, if this questionnaire is any indication, mouthpiece buzzing is quite prevalent among the top performers and pedagogues in the field and warrants further discussion and exploration.

As the quote from Mike Roylance at the head of this chapter suggests, mouthpiece buzzing is frequently regarded as the foundation of creating a beautiful sound on a brass instrument. Predictably, numerous resources reference buzzing, to the extent that it could be the sole topic of a major research project. This section begins with a brief overview of buzzing theory and presents some of the more traditional exercises associated with mouthpiece buzzing such as embouchure solfege, glissando sirens, and removing/reinserting the mouthpiece while playing. Rather than focusing on the most basic and traditional manner of buzzing, this chapter continues with lesser known *alternative* methods of buzzing, including: variations on mouthpiece buzzing (the use of cut out mouthpieces/visualizers, and rim buzzing), resistance added by finger and hand, buzzing/playing the inner slide tube of the trombone, and free buzzing. Finally, buzzing with the supplementation of external devices will be surveyed, including the use of plastic tubing and other commercially available products.

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<sup>82</sup> Paul Compton, Appendix C, 101.



## Mouthpiece Buzzing

The buzz is to brass players what vocal cords are to singers, so mouthpiece practice requires thinking in tune. It also creates a vibration for every note, just as a singer has a syllable for every note. For these reasons, buzzing usually results in a richer more resonant sound, better accuracy, and better intonation.

—Richard Begel, *A Modern Guide for Trombonists and Other Musicians*

Mouthpiece buzzing in the most traditional sense is simply buzzing using the mouthpiece alone apart from the instrument. This method is the most frequently cited manner of buzzing and appears in many warm-up routines. Many of the questionnaire participants described the benefit of buzzing as its ability to connect the mind, to the lips, to the trombone. Peter Ellefson underscored this idea, noting: “Buzzing connects the brain and the vibrating tissue...the chops,” he goes on to add, “Merely buzzing doesn't necessarily help. Buzzing with attention to pitch and air enhances both sound and accuracy.”<sup>83</sup> Dr. Natalie Mannix describes a similar benefit:

Buzzing aids in connecting the pitch in the brain to the trombone, ensuring a centered tone. Buzzing also ensures the air is projecting well past the embouchure. I also find that people have a better, more correct embouchure when they buzz. This helps train the embouchure to be efficient when playing. It can also address bad mouthpiece pressure habits.<sup>84</sup>

Begnoche articulates this same idea in a slightly different way stating, “To me the greatest benefit is the increased relationship between the ear and embouchure and reinforcing our imagination process to produce an optimum tone. It should be an artistic event focused on the beauty and vibrancy/resonance of the sound you aspire to produce.”<sup>85</sup> These statements support the use of buzzing particularly in acquiring a

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<sup>83</sup> Peter Ellefson, Appendix C, 86.

<sup>84</sup> Natalie Mannix, Appendix C, 86.

<sup>85</sup> David Begnoche, Appendix C, 85.

singing style sound as described in Chapter 2. It stands to reason that buzzing practice exists at a critical junction point in connecting the inner voice or song in one's head (audiation) to one's embouchure, before continuing through the instrument.

Much of the debate around buzzing relates to the idea that buzzing the mouthpiece is a different activity than actually playing the instrument. Ralph Sauer, retired principal trombonist of the Los Angeles Philharmonic, makes this argument in the opening statement of an article in the *International Trombone Journal* stating, "My biggest objection to mouthpiece practice is that the lips don't seem to work in the same way as when playing. Placing the finger partially over the end of the mouthpiece helps somewhat, but the low register never seems to respond unless I drastically change the way I would normally play."<sup>86</sup> San Diego Symphony trombonist Logan Chopyk, also commented on this disconnect via this study's questionnaire:

People who buzz are under the impression that the instrument is an amplifier of a buzz. It is in fact not the case. Air inside a long tube is resonated. The lips must be present, but an actively manufactured buzz is not required. I'm much more interested in moving air through the tube than I am with buzzing the lips. Buzzing does require the player to audiate pitch, etc. so I admit it has use. However, this usefulness does not exceed that of singing.<sup>87</sup>

Questionnaire participant Martin Schippers, of the Royal Concertgebouw Orchestra, further addressed this concept in his response, writing: "Of course buzzing isn't exactly the same as playing the trombone but it helps a lot to find the focus and the precision of the buzz."<sup>88</sup> Like many trombonists, Schippers recognizes the differences

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<sup>86</sup> Ralph Sauer, "Make Your Own Practice Pipe," *International Trombone Journal* 16 no. 4 (Fall 1988): 37.

<sup>87</sup> Logan Chopyk, Appendix C, 86.

<sup>88</sup> Martin Schippers, Appendix C, 84.

between buzzing and playing the instrument, but contends that the benefits outweigh the risks.

Many mouthpiece buzzing exercises exist; one standard exercise requires the player to accurately pick out notes, striving for perfect intonation, or what Edward Kleinhammer labels, “embouchure solfege.”<sup>89</sup> Denis Wick describes similar exercises and aims of buzzing in his *Trombone Technique*, writing, “Many trombonists play in somewhat inefficient ways and often tend to ‘buzz’ with the embouchure a slightly different pitch from the one which the slide position would give.” Wick continues by giving the advice that, “By practicing the *exact* pitches on the mouthpiece, the ‘centering’ of the sounds on the instrument can be very much improved.”<sup>90</sup> Participants in this study’s questionnaire also mentioned this idea of “centering the sound.” Edward Zadrozny indicated he used buzzing, enthusiastically reflecting, “Absolutely! I have found that a good sound is obtained by blowing through the “core” of the note. Buzzing high or low on a given pitch not only will affect intonation, but it will also affect tone quality.”<sup>91</sup> “Embouchure solfege” represents just one type of standard buzzing exercise, yet clearly is valued by many trombonists.

Another common type of mouthpiece buzzing exercise, glissando “sirens,” were cited by several participants. Stephen Lange of the Boston Symphony incorporates several of these style exercises in his daily routine/warm-up (see figure 9), which he describes as a “buzz stretch.”

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<sup>89</sup> Kleinhammer, *The Art of Trombone Playing*, 31.

<sup>90</sup> Denis Wick, *Trombone Technique*, (London: Oxford University Press, 1975), 28.

<sup>91</sup> Edward Zadrozny, Appendix C, 86.

Figure 9. Buzz Stretch. Sample of exercise, see Stephen Lange, “Daily Routine/Warm-Up,” Stephen Lange, accessed May 1, 2017, <http://www.langebone.com/downloads/>.

## BUZZ STRETCH

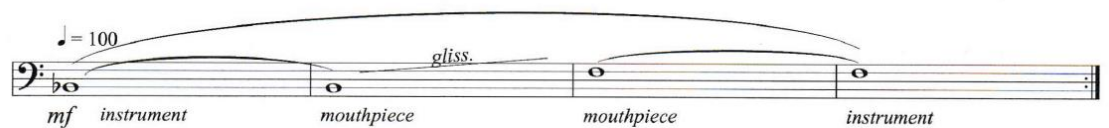


Similar to Lange’s buzz stretches, many participants of the questionnaire mentioned buzzing simple melodies and scales or arpeggios, remarking that they glissed between all notes. Participants noted that after buzzing a melody they often repeated the melody on the instrument in an effort to solidify the connection between buzzing and playing.

Dijk blurs the barrier between playing and buzzing even further in his, “mouthpiece exercise in first position.” An excerpt is shown in figure 10.

Figure 10. Mouthpiece Exercise in First Position. Sample of exercise, see Dijk, *Ben’s Basics*, 22, exercise no. 4.

exercise no.4



Dijk instructs the player to begin by playing a *B-flat*; while holding the note, the player removes the mouthpiece, but continues to buzz and slowly glissandos up to an *f*. The player then reinserts the mouthpiece, activating the trombone—keeping the sound going throughout. The exercise continues upward in this manner to *b-flat*<sup>1</sup>.

Dijk encourages players to experiment and invent similar exercises in this vein of practice, and variations on this basic exercise most likely exist. Note that many of the

exercises described in this standard mouthpiece buzzing section can and are utilized while buzzing in the *alternative* methods described in the subsequent sections.

### *Finger Resistance*

Perhaps the most obvious variation of traditional mouthpiece buzzing is the addition of finger or hand resistance. This additional resistance makes the technique more accessible for inexperienced buzzers; even so, experienced players utilize finger resistance as well.<sup>92</sup> Buzzing with added finger resistance may also be helpful in reaching lower range notes.<sup>93</sup> In example, Dijk, in *Ben's Basics*, states, "If you have to study something in the low register you can either put your finger halfway over the small end of the mouthpiece or use a garden hose to get a bit of resistance which will make the low notes speak better."<sup>94</sup>

### *Hand Buzzing*

Atlanta Symphony Orchestra bass trombonist, Brian Hecht, expands on finger resistance by using a cupping technique he calls hand buzzing. In a masterclass at the 2015 American Trombone Workshop, Hecht related his frustrations with buzzing early on, communicating that, as a younger player, he found it difficult to actually produce a buzz.<sup>95</sup> He developed hand buzzing as a solution—essentially cupping both hand around the end of the mouthpiece creating a resonant chamber.

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<sup>92</sup> Approximately 30% of questionnaire participants indicated that they utilized finger or hand resistance while buzzing. For data statistics see Appendix C, 88.

<sup>93</sup> This idea was articulated on the questionnaire by Swedish trombonist Svenne Larsson. Svenne Larsson, Appendix C, 90.

<sup>94</sup> Dijk, *Ben's Basics*, 85.

<sup>95</sup> Brian Hecht, "Brian Hecht Masterclass" (video of masterclass, American Trombone Workshop 2015, The United States Army Band "Pershing's Own," March 20, 2015), accessed December 14, 2016, <https://www.youtube.com/watch?v=7fqcn6CHxw>.

### *“Cut Out” Mouthpiece/Visualizer*

Another variation on buzzing, the “cut out” mouthpiece, is a mouthpiece that has had part of the cup removed. Just under 40% of participants that buzzed indicated they utilized this type of tool, many of which specifically noted using the “cut out” mouthpiece to check mouthpiece placement and aperture size for students. The “cut out” mouthpiece typically uses the same standard buzzing exercises as described in the “mouthpiece buzzing” section. In example, Brent Phillips in his “Daily Warm Up and Conditioning Routine” requests that players use the “cut away” mouthpiece (or a rim) to buzz a simple two line Jaroslav Cimerá melody.<sup>96</sup> Scott Hartman, of Yale University, also mentions using a “cut out” mouthpiece in a 2007 handout on buzzing.<sup>97</sup> Both participants and Hartman point out that buzzing with a “cut out” mouthpiece in the horn and practicing scales or technical exercises can reveal how the motion of the slide may impact the buzz. This awareness can help the performer adjust their technique to minimize embouchure disruption, resulting in a better overall sound.

### *Rim Buzzing*

Yet another method of buzzing—rim buzzing—consists of buzzing a mouthpiece rim without a cup or shank attached. Boston Symphony Orchestra principal trombonist Toby Oft recently posted several YouTube videos advocating rim buzzing. In a 2016 livestream entitled, “Rim Buzzing Techniques,” Oft describes how he came to use and prefer rim buzzing over traditional mouthpiece buzzing, suggesting that it’s

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<sup>96</sup> Brent Phillips, “Daily Warm Up and Conditioning Routine” (lecture presented at the International Trombone Festival, 2010), 1, accessed June 1, 2017, [http://baylortrombones.weebly.com/uploads/1/4/5/0/14502268/daily\\_warm\\_up\\_and\\_conditioning\\_routine-2.docx1](http://baylortrombones.weebly.com/uploads/1/4/5/0/14502268/daily_warm_up_and_conditioning_routine-2.docx1).

<sup>97</sup> Scott Hartman, “Buzzing,” Scott Hartman, August 2007, 2-3, accessed June 1, 2017, <http://www.slushpump.com/wordpressInstall/wp-content/uploads/2014/02/BUZZING.pdf>.

easier to hear quality of sound while rim buzzing.<sup>98</sup> Oft demonstrates the use of rim buzzing by buzzing and playing legato phrases in alternation, a technique very traditional for standard mouthpiece buzzing as well.

### *Free Buzzing*

Free buzzing is the technique of buzzing one's lips without a mouthpiece. Just under 40% of the participants in this study's questionnaire indicated that they utilized free buzzing to improve their tone. New York City freelancer and free buzzing advocate, Sam Burtis, discusses the technique in great detail in his method, *The American Trombone*. He reports the following benefits gained uniquely from free buzzing, "Free buzzing has the added properties of building the musculature of the embouchure without reliance on what is essentially the artificial musculature and support of the mouthpiece rim..."<sup>99</sup> Scott Hartman reports similar benefits, first qualifying that "the embouchure is symmetrical in terms of muscle structure – though not necessarily tooth structure, to be most efficient, it should work symmetrically." He then continues, with an inference similar to Burtis's, "If we remove the external framework of our embouchure – the mouthpiece – we can teach the muscles to work more efficiently."<sup>100</sup> Hartman provides descriptions of an exercise very similar in concept to that of Dijk's, "mouthpiece exercise in first position," wherein the performer plays a note, slowly pulls the entire instrument away from the face while keeping the free buzz going, glisses to a new pitch, and then brings the instrument back to the lips, all the while maintaining a constant lip buzz.

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<sup>98</sup> Toby Oft, "Rim Buzzing Techniques – LIVE STREAM" (video), posted October 26, 2016, accessed June 1, 2017, <https://www.youtube.com/watch?v=FMUVCh2L-4g>.

<sup>99</sup> Sam Burtis, *The American Trombone* (New York?: Sam Burtis, 2001), 89.

<sup>100</sup> Hartman, "Buzzing," 4.

Free buzzing, however, is not without its opponents. Several participants observed that many players and teachers avoid free buzzing since they view the act as too far removed from playing the instrument. Burtis himself, gives several warnings regarding the dangers of free buzzing stating,

Free buzzing also offers this added danger...the player who free buzzes without making sure that what he is doing will work on the mouthpiece and the horn can form an embouchure that doesn't function well when coupled with the mouthpiece rim. Extensive free buzzing, if not done carefully, can seriously harm a brass musician's playing embouchure.<sup>101</sup>

Similar warnings can and do exist for all other types of buzzing though. In fact, the great Reginald Fink concludes the mouthpiece buzzing chapter of *The Trombonist's Handbook* with the defending comments for free buzzing:

This method of building the embouchure has been criticized by those who only buzz using the mouthpiece. They contend that the work is unnatural and doesn't give the lips the feeling of the mouthpiece. Though their criticisms may be valid, I must repeat that the system works. In moderation, the practice will build a secure middle and upper register.<sup>102</sup>

While free buzzing may be hotly debated amongst players, it's clear that some trombonists have found it beneficial in improving tone. Moderation seems to be an important theme that consistently resurfaces amongst brass player advice.

#### *Buzzing/Playing the Inner Slide*

Buzzing through the inner trombone slide is a technique whereby a player with a fully assembled instrument removes the outer slide of the trombone and proceeds to play/buzz through the mouthpiece and first section of inner slide tubing. While not truly buzzing in the same manner as buzzing the mouthpiece, playing the inner slide is most commonly referred to by trombonists as such. Further, the technique gives a similar

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<sup>101</sup> Burtis, *The American Trombone*, 87.

<sup>102</sup> Fink, *The Trombonist's Handbook*, 72.



sensation to that of buzzing and can be viewed as bridging the gap between buzzing and playing. Questionnaire participant Logan Chopyk commented on this aspect, citing that inner slide buzzing, "...provides a long enough tube to easily create a standing wave without forcing the lips to buzz and is a good tool to prove to students and myself that the lips do not need to be actively buzzed to create tone."<sup>103</sup>

While the origins of this technique are unclear, inner slide buzzing appears in several professional trombonists' warm-up routines. Brent Phillip's exercise labeled "slide tube buzzing" consists of glissed descending major scales, starting *d-flat* and chromatically descending as low as possible.<sup>104</sup> Likewise, Dr. Jonathan Whitaker, of the University of Alabama includes a buzzing through the inner slide exercise based on descending major scales in a 2012 revision of his "Daily Concepts and Fundamentals of Trombone Playing."<sup>105</sup> In a presentation handout for the 2014 Big XII Trombone Conference, Dr. Bruce Faske, of Arkansas State University, describes the benefits of inner slide buzzing, noting that the process, "relaxes the entire sound producing system." He concludes with the confirmation, "You cannot play this way with a tense, tight airstream."<sup>106</sup>

Participants of the questionnaire noted this technique's utility in improving, centering, and reinforcing the lower "trigger" range sound, however, a relatively low percentage of participants—23.68%—indicated that they utilized the technique. As no

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<sup>103</sup> Logan Chopyk, Appendix C, 90.

<sup>104</sup> Phillips, "Daily Warm Up and Conditioning Routine," 2.

<sup>105</sup> Jonathan Whitaker, "Daily Concepts and Fundamentals of Trombone Playing," The University of Alabama Trombone Studio, last modified July 2013, accessed October 1, 2014, <http://www.rollslide.com/assets/whitaker-warmup-f13.pdf>.

<sup>106</sup> Bruce Faske, "The Importance of the Tenor Trombonist's Low Register," (lecture presented at the Big XII Trombone Conference, Texas Tech University, February 1, 2014), 6, accessed June 1, 2017, [http://www.faskemusic.com/uploads/1/2/3/8/12387959/big\\_xii\\_low\\_register\\_lecture\\_-\\_revised.pdf](http://www.faskemusic.com/uploads/1/2/3/8/12387959/big_xii_low_register_lecture_-_revised.pdf).

notated examples were provided by the participants, a representation of slide buzzing based on their descriptions has been provided in figure 11.

Figure 11. Inner Slide Buzz

Remove your outer slide and buzz/play these exercises through the mouthpiece still in the inner slide/leadpipe. Hold the lowest note out as long as possible and take a quick breath in time with the metronome. You may gliss between notes if necessary. Choose either A or B, then slide buzz C last. Play at a *mf* dynamic or louder. Feel free to start in a lower key.

A)

B)

C)

...continue descending

...continue descending

### Mouthpiece Buzzing with an External Device

This portion of the document covers the use of external devices while buzzing; rather than categorizing these devices in the previous external device chapter, they appear here since they are only used in the context of buzzing. Many commercial buzzing products exist to facilitate buzzing – a short list includes: the Berp, the Buzzard, the BuzzMaster, the Brass Short Cut, the Buzz-R, the UpSound, the K&G

Mouthpiece Buzzer and the Ape. Several of these devices share similar characteristics, including shape, material and claims.

The Berp consists of a short plastic tube that ends with a screw dial to adjust resistance; it is clamped onto the receiver of the instrument, allowing for slide practice while buzzing. Designed by Terry Warburton, The Buzzard: Buzz Enhancer for Brass Players, consists of a plastic tube shaped like a chess piece and claims to replicate a resistance similar to the instrument while promoting the proper playing angle.<sup>107</sup> The BuzzMaster by David O’Neill is a metallic device available in different alloys that claims to simulate the exact resistance of the instrument.<sup>108</sup> Advertised as an embouchure builder, the Jo-Ral Brass Short Cut is a device constructed of a short copper tube with two holes ending in a small bell flair.<sup>109</sup> The Marcus Arnold Buzz-R and the Bernd Hoffman Embouchure Builder are two buzzing devices made of wood, both equipped with mechanisms to adjust resistance to replicate that of an instrument.<sup>110</sup> The UpSound is a buzzing aid produced by Stomvi USA, that claims to create a buzzing chamber that, “simulates the backpressure of the instrument.”<sup>111</sup> The Kurun and Gilbert (K&G) mouthpiece company offers a mouthpiece buzzer of their own namesake as well. The K&G mouthpiece buzzer fits inside leadpipe of an instrument, allowing users

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<sup>107</sup> “The Buzzard, Buzz Enhancer for Brass Players,” Warburton, accessed May 1, 2017, <http://www.warburton-usa.com/index.php/the-buzzard>.

<sup>108</sup> David O’Neill, “Buzzmaster Tutorial,” David O’Neill, accessed May 1, 2017, <http://www.buzzmaster.com/>.

<sup>109</sup> “3510 Trumpet Brass Short Cut,” Jo-Ral, accessed May 1, 2017. <http://jo-ral.com/mute/jo-ral-3510-trumpet-brass-short-cut-standard/>.

<sup>110</sup> The Buzz-R is equipped with two holes while the Embouchure Builder has an adjustable screw dial. Markus Arnold, “Buzz-R,” accessed May 1, 2017, <http://wp1009782.server-he.de/mawp/wp-content/uploads/2016/04/FlyerA6-Ru%CC%88ckseite.jpg>., “Bernd Hoffmann Embouchure Builder,” accessed May 1, 2017, [https://www.thomannmusic.com/bernd\\_hoffmann\\_ansatztrainer\\_fuer\\_posaune\\_3.htm](https://www.thomannmusic.com/bernd_hoffmann_ansatztrainer_fuer_posaune_3.htm).

<sup>111</sup> “UpSound,” Stomvi-USA, accessed May 1, 2017, <http://stomvi-usa.com/shop/upsound/>.

to buzz in the normal playing position.<sup>112</sup> The Warburton Ape, an acronym for Anti-Pressure Exerciser, was designed by Dean Psarakis as a buzzing device that teaches the user to buzz using as little pressure as possible.<sup>113</sup> Designed to cease working if the player uses too much pressure, this device shares similarities with the anti-pressure devices mentioned in the external device chapter of this document.

While a comprehensive list of buzzing devices exceeds the scope and purpose of this research, the devices selected for discussion within this section are representative of the types of tools on the market today. Unfortunately, there is little written about most of these devices, so it is difficult to assess their relevance and impact within modern performance and pedagogy. 31.58 % of participants in this study's questionnaire indicated that they utilized a "Berp or similar device" to buzz, yet no participants specified any other device other than the Berp.

The Berp is one of the few devices mentioned in documents other than marketing materials. An acronym for Buzz Extension Resistance Piece, trumpeter Mario Guarneri created the Berp in 1986.<sup>114</sup> The Berp creator offers the following explanation of the benefits on the Berp's product website FAQ:

Buzzing the mouthpiece exposes what you're doing or not doing with your air and embouchure. A good buzz on the berp translates into a great sound on the instrument. The berp makes buzzing efficient and relevant by recreating the resistance of the instrument and allowing you to finger the valves or move the slide to the pitch you're buzzing. The berp exposes sound production problems before the sound is amplified by the mouthpiece and instrument.<sup>115</sup>

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<sup>112</sup> "K&G Accessories," Kurun and Gilbert Mouthpieces, accessed May 1, 2017, <http://kandgmouthpieces.com/products-page/mouthpieces/kg-accessories/>.

<sup>113</sup> "A.P.E. - Anti Pressure Exerciser" Warburton, accessed May 1, 2017, <http://www.warburton-usa.com/index.php/ape>.

<sup>114</sup> Mario Guarneri, "Birth of the BERP," Berp and Company, accessed February 1, 2017, <https://berp.com/product/berp/>.

<sup>115</sup> "FAQ's about Berping," Berp and Company, accessed February 1, 2017, <https://berp.com/shop/faqs/#faqsberping>.

Similar to using “cut-out” mouthpieces, the Berp reveals how slide motion can disturb the embouchure setup. In a handout on buzzing, Scott Hartman, highlights this similarity, but concludes, “The B.E.R.P. causes the trombone to be held in a slightly different position than normal. For this reason, I prefer using a cutaway mouthpiece.”<sup>116</sup> The Berp can be utilized for all standard mouthpiece buzzing exercises, and is mentioned by name in several method books.<sup>117</sup> Further, the manufacturer also sells an instructional CD and manual entitled, *Brass Basics and the Berp*.<sup>118</sup>

While many commercial external devices are available to aid in buzzing, a relatively small percentage of participants utilized commercially purchased external buzzing devices and instead favored a simple homemade device cut from plastic tubing known as a F.A.R.T., an acronym for Forced Air Resistance Tube. 31.58% of participants indicated they use a Berp-like device versus 47.37% noted that they buzzed with a plastic tube. Buzzing the mouthpiece with a length of tubing attached to the shank is explored in several sources, including Edward Kleinhammer and Douglas Yeo’s *Mastering the Trombone*, Jeff Reynold’s *A Comprehensive Workbook for Bass Trombone and Tenor Trombone with F-attachment*, Ben van Dijk’s *Ben’s Basics*, and a journal article by Ralph Sauer entitled, “Make Your Own Practice Pipe.”

The unpolished term, F.A.R.T., has an interesting history shrouded in some mystery, that recently had some light shed upon it. In a 2004 essay, retired tubist Roger Bobo of the Los Angeles Philharmonic explained how the name originated:

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<sup>116</sup> Hartman, “Buzzing,” 3.

<sup>117</sup> These include but are not limited to Klaus Bruschke’s *Trombone Fundamentals: Breathing – Embouchure – Technique*, and Frank T. William’s *Trombone Chops*

<sup>118</sup> “Brass Basics,” Berp and Company, accessed February 1, 2017, <https://berp.com/product/brass-basics/>.

Once in Los Angeles when we were very unoccupied and needed a creative outlet, the back row created an evil prank. One of our trumpet players had developed a wonderful practice product called the B.E.R.P. (Buzzing Extension and Resistance Piece), which enabled brass players to buzz on the mouthpiece while it was in the horn. It works, and many of my students use it. But the combination of creativity and free time the back row led to the low brass running an ad in the international trombone magazine for a F.A.R.T. (forced air resistance tube)! Everyone found this quite humorous... apart from the producer of the B.E.R.P., who made it very clear to us that we were never to make that joke again, so that was the end of it!<sup>119</sup>

It appears this story has truth to it; after some searching, an article in a 1987 issue of the *International Trombone Journal* was discovered entitled, “Make your own Practice Pipe,” by Sauer. In the article, Sauer gives instructions regarding the making of the F.A.R.T.: “Materials needed are 10 inches of plastic tubing (half-inch inside diameter), a sharp knife, and an electric drill. One inch from one end of the pipe, drill a 1/8-inch hole through *ONE* side of the tube. THAT’S IT!”<sup>120</sup> He also provides a schematic of the F.A.R.T. as seen in figure 12.

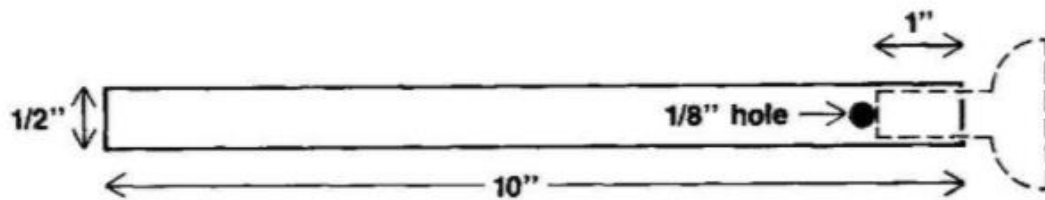


Figure 12. Practice Pipe (a.k.a. F.A.R.T.) Schematic. Sauer, “Make Your Own Practice Pipe,” 37.

Sauer explains that the F.A.R.T. was designed to work for buzzing both the low range and the high range. The longer length of tubing is fully engaged when a player

<sup>119</sup> Roger Bobo, “A View from the Back Row,” Roger Bobo, October 17, 2004, accessed February 1, 2017, [http://www.rogerbobo.com/narratives/a\\_view\\_from\\_the\\_back\\_row.shtml](http://www.rogerbobo.com/narratives/a_view_from_the_back_row.shtml).

<sup>120</sup> Sauer, “Make Your Own Practice Pipe,” 37.

plugs the hole drilled in the tubing with a finger, yet, the higher range is accessible by releasing the hole. Sauer explains that with this configuration, “The lips now ‘see’ the long tube when playing the low notes. For the upper notes, they “see” only the length of the mouthpiece.”<sup>121</sup> Sauer suggests experimenting with different lengths of tubing to find the optimal balance between high and low buzzing.

Kleinhammer and Yeo as well as Reynolds also provide construction instructions for the buzzing device. *Mastering the Trombone* instructs that the tube should be approximately eight inches of one-half inch diameter plastic tubing and acknowledges the device’s nickname, attributing Ralph Sauer.<sup>122</sup> Reynolds labels the device a “Tube Extension,” and gives even more detailed specifications:

For horn, trombone, euphonium and tuba players, it’s best to fit your mouthpiece with a plastic hose, maybe with a reducer hose inside, to create a smaller bore size than your mouthpiece bore... Trombonists can use ½” or 7/16 inch hose with a reducer inside, about 4 inches long, to make the bore at some point smaller than the bore on your mouthpiece.<sup>123</sup>

He notes that shorter tubes are better because they do not create their own overtone series. Additionally, Reynolds warns against buzzing the mouthpiece without a tube, explaining, “Your embouchure tends to sphincter toward the center of your aperture to find support against the lack of back pressure on the air column. You wind up with muscle bound chops that are difficult to move easily or supply any kind of acceptable tone.”<sup>124</sup> Reynolds advocates the buzzing of medium to low register melodies at softer

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<sup>121</sup> Sauer, “Make Your Own Practice Pipe,” 37.

<sup>122</sup> Edward Kleinhammer and Douglas Yeo, *Mastering the Trombone*, 2nd ed. (Hayward, WI: EMKO Publications, 2000), 33.

<sup>123</sup> Jeff Reynolds, *A Comprehensive Workbook for Bass Trombone and Tenor Trombone with F-attachment* (Vancouver: Cherry Classics Music, 2013), 2.

<sup>124</sup> Ibid.

dynamics (*mezzo piano* and softer) and for no longer than three minutes. He affirms that buzzing in this fashion increases the “vibrating potential” of an embouchure.<sup>125</sup>

As evidenced by the variation of techniques highlighted in this chapter, there are countless ways to buzz the mouthpiece. There will be defenders and critics of every tactic, but as suggested by the quote by Sam Burtis at the beginning of this chapter, it’s important that each individual find what works for him or herself.

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<sup>125</sup> Reynolds, *A Comprehensive Workbook*, 2.



## Chapter 6: False Tones and Pitch Bends

False tones and pitch bends are two intimately related techniques, whereby the performer primarily relies on their lips to raise or lower the pitch of a note rather than the slide. False tones consequently could be labeled a static pitch bend of sorts.

### False Tones

False tones are referred to by many names including fake notes, false positions, pitches outside the natural range, half overtones, and missing notes. In his text, *The Trombone*, Giancarlo Schiaffini explains that false tones can be produced by, “forcing the air vibrations,” and that, “to do this, the body movement used in breath emission must be exaggerated, pushing the jaw down and forcing the air into the lower part of the mouthpiece. This involves acting, so to speak “against” the instrument...”<sup>126</sup> Ben van Dijk gives a similar explanation of the production of false tones in his method, *Ben’s Basics*, “Fake-notes are notes played in a wrong position and more or less forced by your embouchure to sound in the desired pitch.”

While most associated with the lower range of trombone (from *E-flat* to *BB*), false tones can be produced across the range of the instrument. This “missing range” lacks true harmonics on a standard B-flat trombone without an f-attachment engaged. As mentioned in the opening paragraph, false tones are typically produced by altering the lip buzz, and playing in a slightly different position than normal, though the latter is not necessarily required. The notes from *E-flat* to *BB* are typically played in the same position they would fall in if the f-attachment were engaged, however this is only a rough estimate. Variations between instruments and individual production methods

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<sup>126</sup> Schiaffini, *The Trombone*, 15.

requires experimentation to find the optimal resonating position for each false tone.<sup>127</sup>

Paul Tanner, in *Practice with the Experts: Twenty-Five Favorite Exercises for*

*Trombone*, explains, “The lips must be loosened, but not as much as for pedal tones,

and the slide should be placed one position lower than is normal for the particular

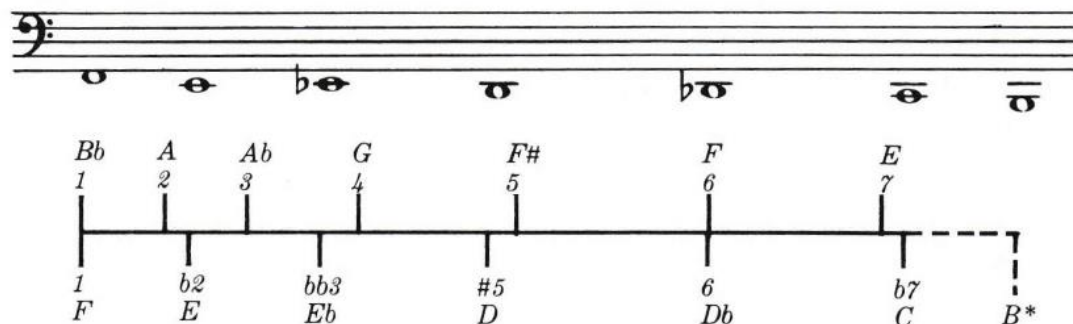
note.”<sup>128</sup> Bill Watrous and Alan Raph’s method *Trombonisms* also offers a diagram of

false tone positions (figure 13) that indicates an approximate tuning/position guide for

finding false tones in relation to standard positions. Watrous and Raph advocate playing

false tones in the same position as f-attachment positions.

Figure 13. False Tone Position Diagram. Bill Watrous and Alan Raph, *Trombonisms: An Extension of Standard Trombone Techniques and an Introduction to Some New Ones* (New York: Carl Fischer, 2002) 32, example 118.



\*B is played by re-tuning the F attachment (“bE” tuning). \*\* Without the F attachment, it requires flattening (or lipping down) the C. This is done by opening the mouth wider and allowing the pitch to fall.

The F-attachment positions are shown in relation to the normal Bb trombone slide positions, (i.e. #5 = sharp 5th position and bb3 = very flat 3rd position).

Of important interest to this study, several sources report that the practice of false tones can improve sound across the range of the instrument. In the first volume of

<sup>127</sup> Sam Burtis notes this phenomenon, see Burtis, *The American Trombone*, 211.

<sup>128</sup> Tanner, *Practice with the Experts*, 2.

the *Contemporary Techniques for the Trombone* series, Jazz trombonist David Baker notes, “It is the author’s experience that with diligent practice those missing notes are as practical and accessible as they would be on bass trombone. In addition, the flexibility and relaxation gained from playing in this register strengthens the middle and top register of the tenor trombone.”<sup>129</sup> Baker gives three full pages of intensive false tone exercises, several of which bridge the gap between false tones and pitch bending.

As previously discussed this chapter Tanner’s *Practice with the Experts*, discusses false tones numerous times throughout the text. In the notes from the editor he upholds, “Practicing these tones (which will feel like false notes at first) will facilitate the production of the more frequently used tones.”<sup>130</sup> Later, he reaffirms, “Keep in mind that if a good logical tone can be produced on these notes, the lips will be stronger and the more ordinarily used notes will be ever so much easier.”<sup>131</sup> In a supplement to *Practice with the Experts*, he underscores this idea, adding, “I take this opportunity to work in the tones from low E on down. If these are new to you, let me point out that work in this range area not only strengthens the embouchure but makes a good open sound much easier in the more normal registers.”<sup>132</sup> In a testament to his confidence in the utility and effectiveness of false tones on playing and improving sound, Tanner provides an “Editor’s Special Exercise,” (a sample seen in figure 14) which is representative of a very standard false tone etude.

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<sup>129</sup> Baker, *Contemporary Techniques*, 17.

<sup>130</sup> Tanner, *Practice with the Experts*, 2.

<sup>131</sup> *Ibid.*, 7.

<sup>132</sup> Paul Tanner, *How to Practice with the Experts* (New York: Leeds Music, 1962) 4.

Figure 14. False Tone Exercise. Sample of exercise, see Tanner, *Practice with the Experts*, 7.



Comparing false tones, and by extension, pitch bends, to an athletic stretch, Ed Neumeister’s *Trombone Technique “through Music”* asserts the importance of these exercises for tone development. He proposes that by stretching and loosening the embouchure muscles through these techniques, a performer can, “expedite the building and strengthening process, building stamina, while helping to avoid injury.”<sup>133</sup>

Nuemeister expands the arpeggiated approach of Tanner’s “Special Exercise” into a two page “Athletic Stretch” complete with helpful reminders; Neumeister instructs,

“Remember fake all trigger notes, *do not use the trigger*. Make it sound as if you are using the trigger. This will make your trigger notes stronger and more centered if you use one.”<sup>134</sup> Several other methods share Neumeister’s specific instructions to avoid the

f-attachment use in these types of sound exercises. Guy Destanque in *Warm-Up for Trombone Players* provides several false tone exercises, advising:

“In the low register you will have to use false slide positions even if, and especially if the instrument has one or more valves. This technique is difficult at first but it is the key to opening up the sound, thanks to the lip, facial muscle and throat positions that it forces you to adopt. You will find the use and sound of the normal positions better and easier and your technique more complete.”<sup>135</sup>

<sup>133</sup> Ed Neumeister, *Trombone Technique “Through Music,”* (Hilversum, The Netherlands: Dannison Music, 2002), 53.

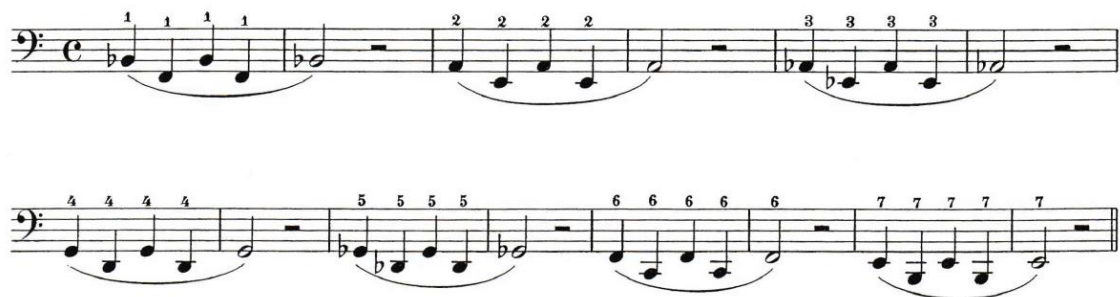
<sup>134</sup> Ibid.

<sup>135</sup> Guy Destanque, *Warm-Up for Trombone Players* (Bulle, Switzerland: Editions Bim, 1987), 6.

Renown soloist Branimir Slokar in his *Warm-Ups and Technical Routines* incorporates a variation of false tone exercises in which there is no slide adjustment for the lower false tones (see figure 15). He explains:

This exercise makes the lips flexible, strengthens the zygomaticus muscles and demands diaphragm control. It is very important here that the note be exactly in tune; this is obtained by the lip position (lower lip slightly advanced). I would like to stress that it is very important to keep to the given positions, not to move the slide and not to use the F valve.<sup>136</sup>

Figure 15. False Tone Exercise with No Slide Adjustment. These are the first two lines of Slokar’s “Exercise 1 with the Instrument.” Branimir Slokar, *Warm-Ups and Technical Routines: Trombone*, 5th ed. (Vuarmarens, Switzerland: Editions Bim, 1998), 6.



### Pitch Bends

Stuart Dempster provides an excellent definition of a bent tone, and by extension pitch bends, in *The Modern Trombone*: “A bent tone is the result of a player taking a given pitch and, while retaining the same length of pipe (not moving the slide), lowering or raising the pitch simply by making the lip buzz lower or higher than the

<sup>136</sup> Branimir Slokar, *Warm-Ups and Technical Routines: Trombone*, 5th ed. (Vuarmarens, Switzerland: Editions Bim, 1998), 6.

pipe will comfortably resonate.” Dempster also mentions that, “There is some sympathetic action of the throat as well.”<sup>137</sup>

Questionnaire results indicate that many performers employ pitch bends to improve tone, with approximately 60% of participants indicating they use this type of exercise.<sup>138</sup> Many participants described using pitch bends to “center” notes. James Decker of Texas Tech University provided additional details, commenting, “I have students bend below the intended pitch and come back to the sound, but not return all the way to their original tone. I do this to help develop and encourage more of a ‘fundamental’ or core to their sound.”<sup>139</sup> From comments such as this, it is logical to infer that pitch bend exercises are helpful in improving sound in that they require a trombonist to precisely control where the pitch of each note is located, rather than depending on the instrument to ‘slot’ each note to the correct pitch. Put in other words, pitch bends effectively teach the embouchure to control the instrument’s pitch, rather than allowing the instrument to, reinforcing the concept that an ideal sound stems from the acoustic properties of the air column being in phase with the pitch to be performed.

Several participants also mentioned doing pitch bend exercises specifically from Jeff Reynold’s *A Comprehensive Workbook*. Reynolds devotes an entire section of the book to the technique, aptly titling it, “Bone on a Bender.” He includes a brief but helpful analysis/reasoning for practicing pitch bends preceding the bending exercises:

Lip benders are exercises in which you ‘bend’ the pitch of the note, or ‘lip down’ a half-step (or greater interval), lower than the center of the harmonic allows. The purpose is to increase the ‘centering’ character of your normal notes, and as a basic embouchure relaxant. Make the best sound you can on the

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<sup>137</sup> Dempster, *The Modern Trombone*, 19.

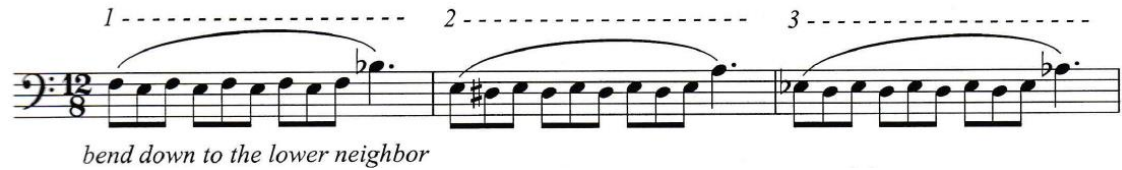
<sup>138</sup> This statistic was adjusted based on comments from participants that utilized pitch bends but did not consider them beneficial for the improvement sound production.

<sup>139</sup> James Decker, Appendix C, 99.

bent notes by dropping the jaw, vibrating your lip mucous membranes, and keeping the best resonance on the bent note as you can.<sup>140</sup>

An example of one of the many pitch bending exercises Reynolds includes is shown in figure 16.

Figure 16. String of Benders. Sample of exercise, see Reynolds, *A Comprehensive Workbook*, 31.



Brad Edwards also includes an example of pitch bends in his *Lip Slurs*, under the heading, “Opening Up the Sound in the Lower Register.”<sup>141</sup> Edwards combines a standard lip slur, (an exercise often associated with improving and opening up the sound) but suggests adding a half step lip bend at the end. Dijk also includes pitch bends his method book; like other authors, he mentions using pitch bends as a “cool down” or “warm-down” exercise—exercises intended for lip recovery and loosening the embouchure after heavy playing. Dijk comments on pitch bends in general, stating that they, “focus the setting of your embouchure and will make your sound more centered and pure.”<sup>142</sup>

It is very possible to combine pitch bends with false tones, as false tones can be understood as static pitch bends, and both Reynolds and Dijk include exercises that do so. Dijk discusses this idea in the instructions included for his first pitch bend exercise (a sample is shown in figure 17), “The exercises also make use of ‘Fake-notes’; again

<sup>140</sup> Reynolds, *A Comprehensive Workbook*, 30.

<sup>141</sup> Edwards, *Lip Slurs*, 8.

<sup>142</sup> Dijk, *Ben's Basics*, 63.

make the repeated note, in its correct position, as centered and vibrating as possible and relax.”<sup>143</sup>

Figure 17. Pitch Bend and False Tone Exercise. Sample of exercise, see Dijk, *Ben's Basics*, 63, exercise no. 16a.

**Lento** Take a breath wherever you need it. Always play with full air!

*1st position.....* *2nd position.....*

The musical notation is in bass clef, 4/4 time, and B-flat major. It consists of four measures. The first measure is labeled '1st position.....' and contains a glissando from a middle note to a lower note, with dynamics *mf* and *f*. The second measure is labeled '1' and '2nd pos.' and contains a note with a glissando to a lower note, with dynamics *mf* and *mf*. The third measure is labeled '2nd position.....' and contains a glissando from a middle note to a lower note, with dynamics *mf* and *f*. The fourth measure is labeled '2' and '3rd pos.' and contains a note with a glissando to a lower note, with dynamics *mf* and *mf*.

In figure 17, Dijk articulates that once the player has bent the pitch down a half step and holds it, it becomes a false tone. By bending the pitch down to the false tone, and then repeating the note in the proper position, Dijk reaffirms the concept that by resonating the exact note “on the lips” in addition to having the slide in the right position the best possible tone is produced.

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<sup>143</sup> Dijk, *Ben's Basics*, 63.



## **Chapter 7: Conclusion**

### **Summary of Findings**

Survey results confirmed the prevalence of non-traditional techniques for improving tone, to varying degrees, in each of the categories researched. Most typically, trombonists incorporate these techniques into their daily warm-up routine. Additionally, data suggests that non-traditional techniques are primarily used in tandem with traditional exercises like long tones and lip slurs, and are often based on, or use these classic exercises as a model for variation and expansion. Many of the non-traditional exercises discussed can serve as valuable tools in developing a singing style of sound/playing.

Ninety-eight professional trombonists received invitations to participate in this study; forty trombonists took the questionnaire, yielding an overall response rate of just over 40%. Noted in the applicable sections, the questionnaire produced informative data statistics that ultimately guided the direction of this research. Appendix C shows raw data from the questionnaire. Participant comments, also presented in Appendix C, complement and enhance these statistics by providing additional detail and substance to the study's quantitative findings.

Without question, the majority of professional trombone performers and pedagogues utilize at least some form of non-traditional technique to develop sound for either themselves or their students. In response to the question, "Do you feel non-traditional or extended techniques are useful as pedagogical tools for tone development? Why or why not? Please explain," an overwhelming 82.86% of respondents answered

yes, and while the participant pool represents only a small population, it is appropriate to infer they are representative of an average cross section of trombonists.

Data and performer comments also suggest that most participants utilized and viewed these techniques as *alternative* methods rather than a primary choice for developing sound. Several participants admitted that they tended to gravitate towards traditional methods, while also communicating an attitude of flexibility and a willingness to try new techniques. Retired Boston Symphony Orchestra bass trombonist Douglas Yeo, matter-of-factly commented on this aspect stating, “A person who does not utilize a variety of methods to improve playing is foolish.”<sup>144</sup> Gerry Pagano, St. Louis Symphony Bass Trombonist expanded on this idea, advising:

Sometimes you need to approach an issue from many different directions. Any and all ideas should be considered, at least once, until and unless they should prove detrimental. You never know if something is helpful if you don't try it. But as with anything radically different, it should be done with caution, very thoughtfully, and discarded immediately if it proves either not helpful, or actually hurtful.<sup>145</sup>

Several participants also mentioned the utility of non-traditional techniques in approaching issues from alternative angles and/or bypassing mental obstacles standing in the way of progress. Logan Chopyk, commented on this aspect, providing a nice explanation:

Everyone hits walls in their development on the trombone. Many times it's due to unawareness of the subtle tensions that are preventing success. Or if there is awareness, many are unable to overcome those limitations by intellect alone. Non-traditional techniques can teach the body to do an action that the trombone cannot. Once one gets the feeling of moving air freely through a tube, the body can apply that to the trombone. Our trombone playing tends to be loaded with tons of a baggage. We rely on it for income, social prestige, career success, self-worth, etc. So, taking the risk of playing so easily that you are willing to let the

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<sup>144</sup> Douglas Yeo, Appendix C, 105.

<sup>145</sup> Gerry Pagano, Appendix C, 103.

tone fail is not an easy task. But it is easy if you blow through a straw or at a pinwheel. Those things have zero baggage.<sup>146</sup>

A smaller percentage of participants viewed non-traditional techniques as more of an entirely different soundscape, but still expressed a positive regard toward non-traditional sound development. Jen Baker, author of *Hooked on Multiphonics* explained:

Non traditional techniques increase the envelope of possible sounds. When a person knows more sounds, they have more points of reference for what an optimal sound is in any given situation, be it tone, dynamics, phrasing, etc. Non traditional techniques also provide the opportunity to study what the mouth/embouchure/air does differently, and allows one to create a wider spectrum of comparison between...traditional and non-traditional styles.<sup>147</sup>

As Baker alludes, non-traditional techniques reveal the influence the vocal tract holds within the production of sound. Exercises like shifting between vowels, singing and playing in unison, and multiphonics highlight the influence of oral cavity alterations on efficient production of sound. Additionally, these techniques enhance appreciation and awareness of the composition of trombone tone and the balance of fundamental core to overtones that ultimately comprise the idealized sound.

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<sup>146</sup> Logan Chopyk, Appendix C, 104.

<sup>147</sup> Jen Baker, Appendix C, 104.

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## **Appendix A: Questionnaire**

### **Explanation of Study**

#### **TONE DEVELOPMENT THROUGH NON-TRADITIONAL TECHNIQUES**

The purpose of this study is to identify, assemble, and catalog non-traditional exercises focused on tone development into a pedagogical resource for trombonists. Most trombonists are familiar with traditional methods of tone development such as long tones and lip slurs, and while these familiar methods will always remain at the foundation of playing the trombone, this study seeks to discover innovative new tactics currently used by trombonists.

Many of the non-traditional tone exercises covered in this study utilize extended techniques. Non-traditional or extended techniques are generally accepted as techniques that require a performer to use their instrument in a fashion outside of conventional norms. For the purposes of this study, the incorporation of external devices or tools, used either in tandem with the instrument or solitarily, will also be considered non-traditional. Traditional tone exercises are defined as exercises performed on a fully assembled trombone (without any external devices or attachments) and with a traditional tone (no multiphonics, flutter tongue, false tones, etc.).

The sound one creates is not a singular entity but a complex combination of factors adding up to a final product; this research recognizes that many exercises within this study could also develop other aspects of playing, such as intonation, legato, breathing, etc. If you don't use a technique mentioned particularly for tone development, please comment on the question to clarify how you use the said technique.

Each question may be answered with a "yes" or "no" response, but additional comments/explanation are encouraged and can be submitted in the accompanying text box for each question. If you have examples of your exercises written out (either sketched or fully notated), please attach a copy in the appropriate section or at the end of the questionnaire.

The following questions address specific techniques and their application to developing tone on the trombone. If you don't use a technique mentioned particularly for tone development, please comment on the question to clarify how you use the said technique.

## Buzzing

Do you buzz your mouthpiece? Please describe the experiences or insights that prompted you to either buzz or avoid buzzing.

- Yes
- No

Which of the following techniques, if any, do you utilize to improve your overall tone on the trombone? Please click on all that apply and describe applicable exercises in the accompanying text box.

- Buzz Mouthpiece
- Buzz Mouthpiece with Finger or Hand Resistance
- Buzz Mouthpiece Rim (no cup or shank attached)
- Buzz through the Inner Slide (with the outer slide removed)
- Buzz a Visualizer or "Cut Out" Mouthpiece
- Buzz Mouthpiece with a Plastic Tube Attached to Shank (aka F.A.R.T.)
- Buzz Mouthpiece using a B.E.R.P. or Similar Device
- Free Buzz (buzz lips without a mouthpiece)
- Buzz Mouthpiece in a Manner not Listed

If available, please upload copies of exercises involving buzzing. Most file types are accepted (.pdf, .docx, etc.).

Files may also be uploaded at the end of this survey.

## External Devices

Which of the following devices/techniques, if any, do you utilize to improve your overall tone on the trombone? Please click on all that apply and describe applicable exercises in the accompanying text box.

- Mutes (straight, practice, etc.)
- Inserting a Paperclip, Straw, or Similar Object into the Leadpipe (creating an air leak)
- Toy Pinwheel
- Spirometer or Similar Breathing Device
- Embouchure Strengthening Device (such as P.E.T.E., Chop-Sticks, etc.)
- Another Device not Mentioned here

If available, please upload copies of exercises involving external devices. Most file types are accepted (.pdf, .docx, etc.).

Files may also be uploaded at the end of this survey.

## Vocal Techniques

Which of the following techniques, if any, do you utilize to improve your overall tone on the trombone? Please click on all that apply and describe applicable exercises in the accompanying text box.

- Singing
- Alternating Singing then Playing
- Multiphonics (singing and playing two different notes)\*
- Singing Along while Students Play (to improve student's sound)
- Singing and Playing in Unison (singing the same pitch that is being played in unison or octave)
- Flutter Tonguing

If available, please upload copies of exercises involving vocal techniques. Most file types are accepted (.pdf, .docx, etc.).

Files may also be uploaded at the end of this survey.

\*Though many definitions/types of multiphonics exist, this study defines multiphonics in its more generally accepted term within the trombone community: simply singing and playing two different pitches.

### **False Tones / Pitch Bends**

Which of the following techniques, if any, do you utilize to improve your overall tone on the trombone? Please click on all that apply and describe applicable exercises in the accompanying text box.

False Tones

Pitch Bends

If available, please upload copies of your exercises involving false tones or pitch bends. Most file types are accepted (.pdf, .docx, etc.).

Files may also be uploaded at the end of this survey.

### Concluding Questions

Are there any other non-traditional methods of tone development that you utilize that have not been mentioned in this questionnaire? If so, please describe.

Yes

No

Do you feel there are any negative stigmas toward practicing non-traditional or extended techniques for tone development or other purposes? Please describe.

Yes

No

If you have any thoughts or theories on why non-traditional techniques as a whole are effective or not effective for the development of tone please describe them here:

Do you feel non-traditional or extended techniques are useful as pedagogical tools for tone development? Why or why not? Please explain.

Yes

No

If you have any other comments you would like to make regarding the use of non-traditional techniques to develop tone please do so here:

Were there any questions or topics that you feel should have been asked or covered in this questionnaire that were not? If so, please describe.

Yes

No

Are you aware of any trombonists who frequently use non-traditional techniques to develop sound/tone? If so, please list.

Yes

No

If available, please upload examples of tone exercises you use that incorporate non-traditional techniques. Most file types accepted (.pdf, .docx, etc.).

**TAKE NOTE: THIS IS THE LAST PAGE OF THE QUESTIONNAIRE. IF YOU MOVE FORWARD FROM THIS POINT YOU WILL NOT BE ABLE TO RETURN TO THE PREVIOUS QUESTIONS.**

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## **Thanks**

Thank you for your time, consideration, and participation in this questionnaire.

Your input is greatly appreciated. This study would not be possible without your involvement.

## Appendix B: Proposed Questionnaire Participants

First Name	Last Name	Professional Affiliation
Joseph	Alessi	New York Philharmonic
John	Allen	Oklahoma City Philharmonic
Donald	Appert	Clark College
Thomas	Ashworth	University of Minnesota
Jen	Baker	NYC Freelance Trombonist
Tony	Baker	University of North Texas
Buddy	Baker	University of Northern Colorado
Michel	Becquet	Conservatoire de Lyon
David	Begnoche	Texas Christian University
David	Binder	Detroit Symphony
Norman	Bolter	Boston Symphony Orchestra
Zachary	Bond	Malaysian Philharmonic Orchestra
Ian	Bousfield	Vienna Philharmonic
Nathaniel	Brickens	University of Texas at Austin
Mark	Broschinsky	The Guidonian Hand
George	Butler	Estonia Trombonist
Ruben	Carughi	Organizer of Trombonanza
Stanley	Chen	Hong Kong Trombone Organizer
James	Chesebrough	Keene State College
Logan	Chopyk	San Diego Symphony
Paul	Compton	Oklahoma State University
Terry	Cravens	University of Southern California
Michael	Davidson	University of Kansas
JoDee	Davis	University of Missouri Kansas City
Simone	de Haan	Australian Avant Guard Professional
Michael	Dease	Michigan State University
James	Decker	Texas Tech University
Stuart	Dempster	University of Washington
John	Drew	Florida State University
Joseph	Duchi	The Ohio State University
Brad	Edwards	Arizona State University
Peter	Ellefson	Indiana University
Micah	Everett	University of Mississippi

Pablo	Fenoglio	Buenos Aires Professional
Kirk	Ferguson	Milwaukee Symphony
Stephen	Fissel	Seattle Symphony
Jay	Friedman	Chicago Symphony Orchestra
David	Gier	University of Iowa
Dick	Griffin	Wesleyan University
Randall	Hawes	Detroit Symphony
Brian	Hecht	Atlanta Symphony Orchestra
Mark	Hetzler	University of Wisconsin
Tim	Higgins	San Francisco Symphony
Timothy	Howe	University of Missouri
John	Kenny	Guildhall School of Music
John	Kitzman	Dallas Symphony Orchestra
Massimo	La Rosa	Cleveland Symphony Orchestra
William	Lang	Guidonian Hand
Svenne	Larsson	Swedish Radio Symphony Orchestra
Mark	Lawrence	San Francisco Symphony
Carl	Lenthe	Indiana University
Achilles	Liamakopoulos	Canadian Brass
Don	Lucas	Boston University
Natalie	Mannix	University of North Texas
John	Marcellus	Eastman School of Music
James	Markey	Boston Symphony Orchestra
Steve	Menard	University of North Texas
Michael	Mulcahy	Chicago Symphony Orchestra
Toby	Oft	Boston Symphony Orchestra
Gerry	Pagano	St. Louis Symphony
Peter	Palinkas	Hungarian Trombone Quartet
Sarah	Paradis	Boise State University
Brent	Phillips	Baylor University
Brian	Plitnik	West Virginia University
Denson Paul	Pollard	Metropolitan Opera
Dave	Rey	Swiss Brass
Jemie	Robertson	Eastern Illinois University
Ralph	Sauer	Los Angeles Philharmonic
Giovanni	Scarpetti	Colombian Feelance Player

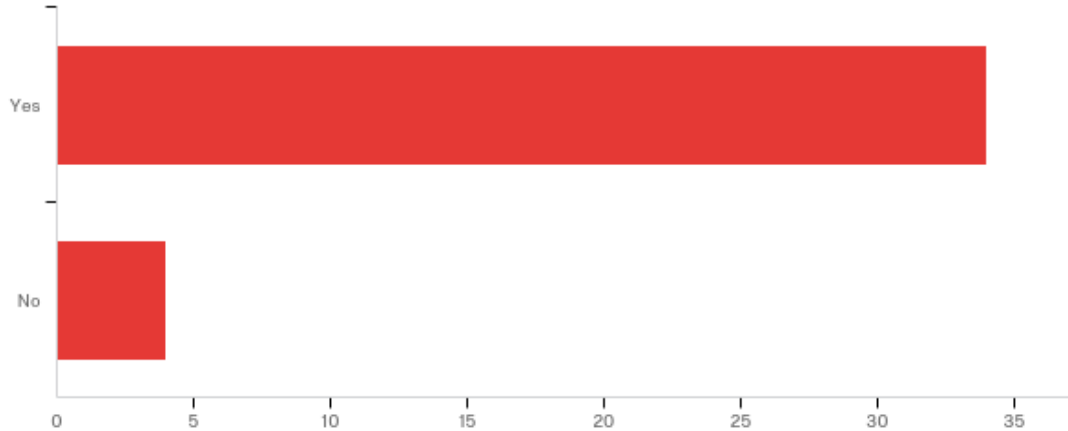
Martin	Schippers	Royal Concertgebouw Orchestra
Stefan	Schulz	Berlin Philharmonic
Deb	Scott	Stephen F. Austin State University
Joey	Sellers	Jazz Artist
Tim	Smith	Buffalo Philharmonic
Weston	Sprott	Metropolitan Opera
Dee	Stewart	Indiana University
David	Stuart	Iowa State University
David	Stuart	Iowa State University
Jason	Sulliman	University of North Alabama
Stolarczyk	Tomasz	Polish Professional and Teacher
Ben	van Dijk	Rotterdam Philharmonic
Jörgen	van Rijen	Royal Concertgebouw Orchestra
Sebastian	Vera	Pittsburg Opera
Charles	Vernon	Chicago Symphony Orchestra
David	Vining	Northern Arizona University
Irvin	Wagner	University of Oklahoma
John	Wasson	Dallas Freelance and Composer
Jonathan	Whitaker	University of Alabama
Denis	Wick	London Symphony Orchestra
Ronald	Wilkins	NYC Freelance Trombonist
Jamie	Williams	Berlin Opera
Phil	Wilson	Berklee College of Music
Jeremy	Wilson	Vanderbilt University
Doug	Yeo	Boston Symphony Orchestra
Edward	Zadrozny	University of Akron
Larry	Zalkind	Eastman School of Music

## Appendix C: Questionnaire Data

**I agree to participate in the research study. I understand the purpose and nature of this study and I am participating voluntarily. I understand that I can withdraw from the study at any time, without any penalty or consequences. I grant permission for the data generated from this questionnaire to be used in the researcher's publications on this topic.**

#	Answer	%	Count
1	Yes, I agree to participate.	100.00%	40
2	No, I do not want to participate.	0.00%	0
	Total	100%	40

**Do you buzz your mouthpiece? Please describe the experiences or insights that prompted you to either buzz or avoid buzzing.**



#	Answer	%	Count
1	Yes	89.47%	34
2	No	10.53%	4
	Total	100%	38

### **Answered Yes Comments:**

Martin Schippers: Of course buzzing isn't exactly the same as playing the trombone but it helps a lot to find the focus and the precision of the buzz. Should never be done

too loud, always with glissando exercises and in combination with playing the trombone. Has great benefits!

---

Stephen Fissel: Buzzing is an indicator of the connection between the musical thought, the action of buzzing, and the product.

---

Deb Scott: I use buzzing in a limited way. It is definitely not the focus of my practice. I find it helpful to create a steady airstream and find the center of the pitch. I recommend that teachers use the term "mouthpiece sounds" to beginning students so as not to create too much tension in the sound.

---

Doug Yeo: I only buzz on my mouthpiece while driving in the car, as a preliminary warm up. I do not use buzzing as a regular part of my daily routine.

---

Paul Compton: I think brief periods of buzzing can help focus the embouchure and it is an excellent ear training exercise.

---

David Stuart: Sometimes alone, sometimes in conjunction with a 6 or 8 inch length of garden hose attached.

---

Randall Hawes: My early teachers showed me that buzzing can clean and clarify the sound; any garbage in the mp buzzing sound is just amplified by the instrument.

---

Gerry Pagano: Yes

---

David Begnoche: I believe buzzing the mouthpiece (when done correctly) can be a very useful tool for developing tone production as it is directly related to aural skills and the accuracy of the embouchure. This practice was used by numerous past teachers of mine including Steven Norrell (Met Opera Orch.), Michael Mulcahy (Chicago Sym.), and Norman Bolter (Boston Sym.). I use mouthpiece buzzing myself and with my students regularly but sparingly (in specifically targeted ways) "all things in moderation". Indeed, even healthy things done to excess or used/performed improperly can be problematic and in some cases mouthpiece buzzing may not be ideal for students working through injury. To me the greatest benefit is the increased relationship between the ear and embouchure and reinforcing our imagination process to produce an optimum tone. It should be an artistic event focused on the beauty and vibrancy/resonance of the sound you aspire to produce. I mostly use melodies when buzzing and rarely more than a phrase at a time on the mouthpiece alone before returning to the instrument. Although the practice of buzzing in glissandos is widely used and may have occasional benefit in working through an uneven range for vibration, I feel it can build inefficiency if used to excess. In fact, I often have students tongue while buzzing to assure they are accurate with intonation. Although this takes a lyrical passage temporarily out of context consistently the ease and beauty and evenness and smoothness of their legato once back on the trombone.

---

David Binder: Large part of my practice. I always go back to achieving a good sound and complete sustain buzz sound while glissing between pitches. I then try to match the sensation of glissando buzzing while playing

---

Don Lucas: Yes

---

Simone de Haan: Better tone

---

Tim Smith: Internal pitch development, pitch centering, independence from trombone for pitch; I've only experienced benefit, no detriment

---

James Decker: When I realized that my tone became more focused and resonant after initially buzzing, I added buzzing to my 'toolbox' and explored other ramifications.

---

Stuart Dempster: Sometimes is more accurate.

---

Natalie Mannix: Buzzing aids in connecting the pitch in the brain to the trombone, ensuring a centered tone. Buzzing also ensures the air is projecting well past the embouchure. I also find that people have a better, more correct embouchure when they buzz. This helps train the embouchure to be efficient when playing. It can also address bad mouthpiece pressure habits.

---

Svenne Larsson: Not very much, sometimes it's is a good way to get the music in the head. It sometimes makes students use too much lip compression though. Actually, pretty often.

---

Joey Sellers: Roy Main...

---

Jen Baker: I buzz every day before I warm up on the instrument. The focus of sound is more instant when I prime my lips with buzzing. It also gives me a chance to check in with pitch accuracy, not only at the beginning of the day, but at any time during practice. In the latter case, I use buzzing to smooth out any impure attacks or pitches.

---

Sarah Paradis: I find that when I buzz a phrase, my resulting playing on the horn tends to have a richer tone with better focus and pitch

---

Ed Zadrozny: Absolutely! I have found that a good sound is obtained by blowing through the "core" of the note. Buzzing high or low on a given pitch not only will affect intonation, but it will also affect tone quality.

---

Peter Ellefson: Buzzing connects the brain and the vibrating tissue...the chops. Merely buzzing doesn't necessarily help. Buzzing with attention to pitch and air enhances both sound and accuracy.

---

### **Answered No Comments:**

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William Lang: <http://www.williamlang.org/blog.php>

---

Irvin Wagner: I have to answer "no" thought I use buzzing to illustrate how to do lips slurs for those having trouble with this issue. I try to have the student get the feel of continuous movement in the lip slur with the buzzing of the mouthpiece. This is a valuable tool, but I do not prolong the exercise. Using buzzing for me is different than actually playing the trombone, and that is why I only use the process for the illustration of concepts. I also use buzzing to assist in the development of high range because the students as well as myself get lost as to what actual pitch is being playing and "trick" themselves into achieving higher notes. I let students utilize buzzing if they find it helpful for other reasons, but generally I feel that buzzing and playing the trombone are two different things. I love the subject, however.

---

Ralph Sauer: My teachers--Emory Remington and Robert Harper never advocated buzzing. I don't even like the word.

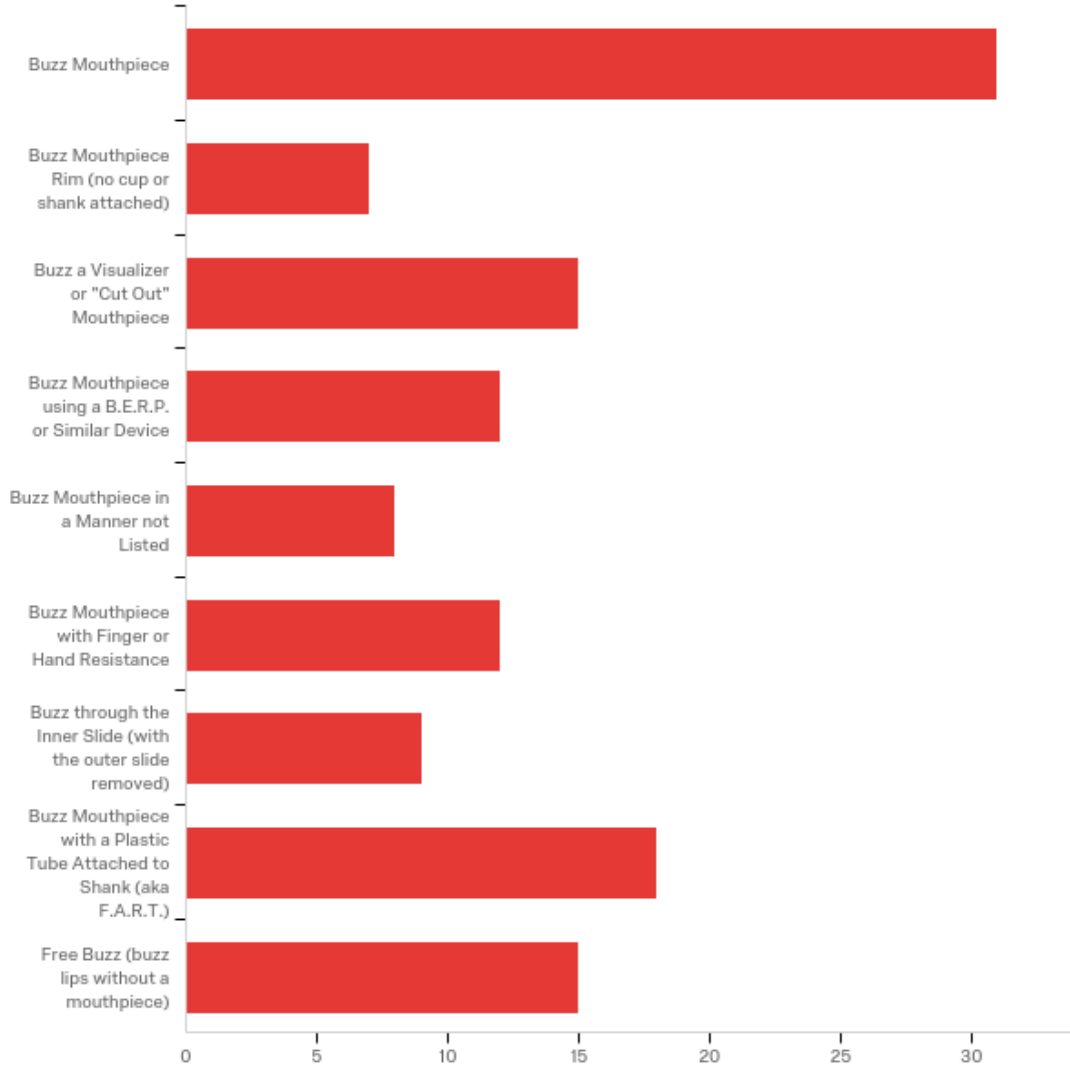
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Logan Chopyk: People who buzz are under the impression that the instrument is an amplifier of a buzz. It is in fact not the case. Air inside a long tube is resonated. The lips must be present, but an actively manufactured buzz is not required. I'm much more interested in moving air through the tube than I am with buzzing the lips.

---

Buzzing does require the player to audiate pitch, etc. so I admit it has use. However, this usefulness does not exceed that of singing.

**Which of the following techniques, if any, do you utilize to improve your overall tone on the trombone? Please click on all that apply and describe applicable exercises in the accompanying text box.**



#	Answer	%	Count
1	Buzz Mouthpiece	81.58%	31
2	Buzz Mouthpiece Rim (no cup or shank attached)	18.42%	7
3	Buzz a Visualizer or "Cut Out" Mouthpiece	39.47%	15
4	Buzz Mouthpiece using a B.E.R.P. or Similar Device	31.58%	12



5	Buzz Mouthpiece in a Manner not Listed	21.05%	8
6	Buzz Mouthpiece with Finger or Hand Resistance	31.58%	12
7	Buzz through the Inner Slide (with the outer slide removed)	23.68%	9
8	Buzz Mouthpiece with a Plastic Tube Attached to Shank (aka F.A.R.T.)	47.37%	18
9	Free Buzz (buzz lips without a mouthpiece)	39.47%	15
	Total	100%	38

### **Buzz Mouthpiece**

Randall Hawes: Not every day, and often with a lead pipe or a short, 6 to 8 inch piece of tubing.

Don Lucas: Yes

James Decker: Detached and slurred exercises as well as buzzing songs and solos

Natalie Mannix: soft scales and slurs at the start of the day

Svenne Larsson: sometimes

Joey Sellers: Roy's two basic routines and Rochut every now and again

Brad Edwards: glisses, simple tunes

Jen Baker: I make up a short phrase, about 8 beats long, and do the same phrase chromatically ascending, and sometimes descending, much like the way a vocalist might do a warm up. I buzz for about 3-5 minutes.

Sarah Paradis: for warm up and also when I am having trouble with a phrase

Edward Zadrozny: The most basic of the mouthpiece buzzing techniques. It works.

Peter Ellefson: Melodies, first sounds of the day.

### **Buzz Mouthpiece Rim (No Cup or Shank Attached)**

David Binder: Focus on making an attractive sound and not over using the tongue

Don Lucas: yes

James Decker: Detached and slurred exercises as well as buzzing songs and solos

Natalie Mannix: for cleaning up a passage that "sticks"

Svenne Larsson: sometimes it works sometimes not

### **Buzz a Visualizer or "Cut Out" Mouthpiece**

Deb Scott: I only use this with students to get a better idea of mouthpiece placement.

Don Lucas: no

James Decker: Lyrical etudes and exercises

Natalie Mannix: To check a student's aperture

David Vining: Cut away in horn to buzz in combo with slide motion

Sarah Paradis: very occasionally

Edward Zadrozny: I like to monitor how the lips are functioning (size of aperture), visually.

### **Buzz Mouthpiece using a B.E.R.P. or Similar Device**

Don Lucas: no

James Decker: All types of music

Natalie Mannix: to link buzzing with actual playing

Svenne Larsson: Used to. not anymore.

Logan Chopyk: I don't use this nowadays, but it can be useful for exposing strange physical tension that arises automatically when playing the trombone. For instance, moving into sixth position may cause young players to do some extraneous motion that has nothing to do with successfully playing the trombone, and they may be unaware of it until they buzz while having the sensation of playing the trombone.

Peter Ellefson: The most valuable as it also allows slide involvement

### **Buzz Mouthpiece in a Manner not Listed**

Ruben Carughi: We always put the free hand to 10cm of the shank to make sure the air is flowing

David Stuart: see above

Brian Hecht: Using lead pipe attached

Don Lucas: no

Tim Smith: I also buzz trumpet and tuba mouthpieces

Svenne Larsson: Very airy, very little compression. Good airflow.

Logan Chopyk: Brian Hecht talks a lot about buzzing his mouthpiece through a leadpipe while listening to pop music so loud that he can't hear himself. The nice

thing about the leadpipe is that it does add a good deal of resistance that can help achieve an unforced buzz. It may be worth reaching out to him about it. He's very original in this method.

Joey Sellers: Dragon/Sellers Buzz through several feet of plastic tubing as part of shtick for show

---

### **Buzz Mouthpiece with Finger or Hand Resistance**

Randall Hawes: often used.

Don Lucas: no

Irvin Wagner: When I buzz I always put either my finger or hand over the shank end of the mouthpiece to get some resistance.

Svenne Larsson: sometimes to get the low range

---

### **Buzz through the Inner Slide (with the Outer Slide Removed)**

Don Lucas: no

James Decker: Downward scales and arpeggios through the second partial for tone reinforcement

Natalie Mannix: for centering and improving the trigger register

Svenne Larsson: very seldom

Logan Chopyk: This provides a long enough tube to easily create a standing wave without forcing the lips to buzz and is a good tool to prove to students and myself that the lips do not need to be actively buzzed to create tone

---

### **Buzz Mouthpiece with a Plastic Tube Attached to Shank (aka F.A.R.T.)**

Martin Schippers: I myself use a lead pipe for buzzing low notes. Especially with bass trombone.

Doug Yeo: I use a 7 inch plastic tube when buzzing; I never buzz on the mouthpiece alone. I buzz scales, arpeggios, etudes and melodies.

Randall Hawes: I use a 6-8 inch hose...I prefer a "soaker" type hose, often with a short piece of quarter inch fuel line tube inside for added resistance.

David Binder: Mouthpiece in tube with the ping pong ball. Visualize the air being consistent by keeping the ball up

Don Lucas: no

Svenne Larsson: sometimes

Joey Sellers: not for buzzing, but for show with Dragon/Sellers band

Edward Zadrozny: In addition to making the buzzing experience seem more lifelike, the attachment facilitates in the playing of notes in the low register.

Peter Ellefson: In the car to keep the drips off of my lap

**Free Buzz (Buzz Lips without a Mouthpiece)**

Randall Hawes: sometimes, but not often.

David Binder: Focusing on no tension

Don Lucas: yes

James Decker: Articulate music to stimulate immediacy of sound

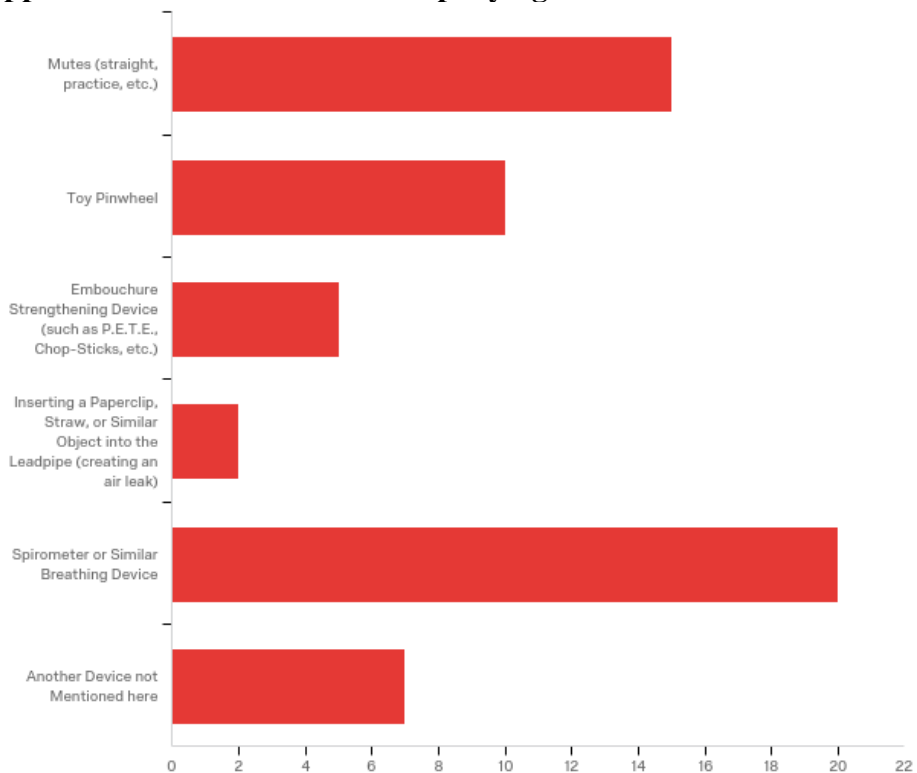
Stuart Dempster: Mostly use this tech, sometimes using isometric on jaw, both front and under jaw

Svenne Larsson: Sometimes, very often student can not do it a good way.

Joey Sellers: mostly while sitting in traffic

Jen Baker: During practice, if a note does not respond with a pure attack, I do a quick free buzz of that note. Free buzzing is usually 20 seconds or less.

**Which of the following devices/techniques, if any, do you utilize to improve your overall tone on the trombone? Please click on all that apply and describe applicable exercises in the accompanying text box.**



#	Answer	%	Count
1	Mutes (straight, practice, etc.)	51.72%	15
2	Toy Pinwheel	34.48%	10
3	Embouchure Strengthening Device (such as P.E.T.E., Chop-Sticks, etc.)	17.24%	5
4	Inserting a Paperclip, Straw, or Similar Object into the Leadpipe (creating an air leak)	6.90%	2
5	Spirometer or Similar Breathing Device	68.97%	20
6	Another Device not Mentioned here	24.14%	7
	Total	100%	29

### **Mutes (straight, practice, etc.)**

Deb Scott: Occasionally a practice mute is used for throat expansion.

Doug Yeo: I practice using various mutes but not specifically to improve tone; I do so in order to become expert in understanding how my mutes respond.

Michael Davidson: I use this sparingly

Don Lucas: Denis Wick (only) Practice Mute, because it has the right resistance, not too tight or loose.

James Decker: Create enhanced vibration on the metal practice mute for greater resonance on the open horn

Irvin Wagner: I do perhaps half of my playing with a Practice Mute. This assists in striving to get a rich, full tone because one has to blow more air when using the Practice Mute. Denis Wick taught me that long ago, and it is extremely useful.

Stuart Dempster: practice mute for improving emb during loud playing. A wine bottle cork in Wa-wa mute works well in lieu of practice mute

Ralph Sauer: Practice mute occasionally.

Natalie Mannix: practice mute can improve tone by making air more immediate

John Drew: Occasionally use a practice mute (played loudly to help open the sound)

Joey Sellers: kazoo, balloon mute -- not necessarily to improve tone but for amusement -- also valuable

Brad Edwards: play loudly into Wick mute (3 reps) then remove

### **Toy Pinwheel**

Randall Hawes: For demonstration purposes.

Don Lucas: Occasionally

Natalie Mannix: for air projection

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Svenne Larsson: Used to.

---

Peter Ellefson: To visualize flow

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**Embouchure Strengthening Device (Such as P.E.T.E., Chop-Sticks, etc.)**

---

Brian Hecht: PETE

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Don Lucas: Seldom

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Svenne Larsson: Used it for a short while. do not like.

---

**Inserting a Paperclip, Straw, or Similar Object into the Leadpipe**

---

Don Lucas: No

---

Svenne Larsson: Used to years ago, not any more.

---

**Spirometer or Similar Breathing Device**

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Deb Scott: Occasionally a spirometer is used to keep track of lung capacity.

---

Randall Hawes: Sometimes.

---

Don Lucas: yes

---

James Decker: Expand upon breathing range, slow down air for pianissimo playing, and insert a mouthpiece into the tube leading into the device for articulation immediacy and tone support

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Natalie Mannix: incentive spirometer for air projection and smoothness in legato

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Svenne Larsson: Used to.

---

Peter Ellefson: To become aware of capacity and encourage greater use of capacity

---

**Another Device not Mentioned here**

---

Martin Schippers: Your imagination!

---

Stephen Fissel: At various times (when I feel the need) I will use a technique that I think of as a "destabilizing" method. For several minutes I will play with absolute minimum mouthpiece pressure, with leaks and unsteady tone occurring, to shift the emphasis of the tone creation onto the embouchure and airstream. Very easy passages from a Bordogni study or a medium speed flexibility exercise.

David Stuart: Breath Builder--not manufactured any more, but i still have my old one from about 20 years ago

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Don Lucas: none

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Logan Chopyk: plastic straw. This is similar in a way to the pinwheel. The pinwheel reacts visually when you blow on it whereas the straw gives aural feedback. The idea is to practice the efficient function of moving air through a tube. I taught a 6th grade student to double tongue in thirty minutes using a straw. And it improved his tone and single tongue as well.

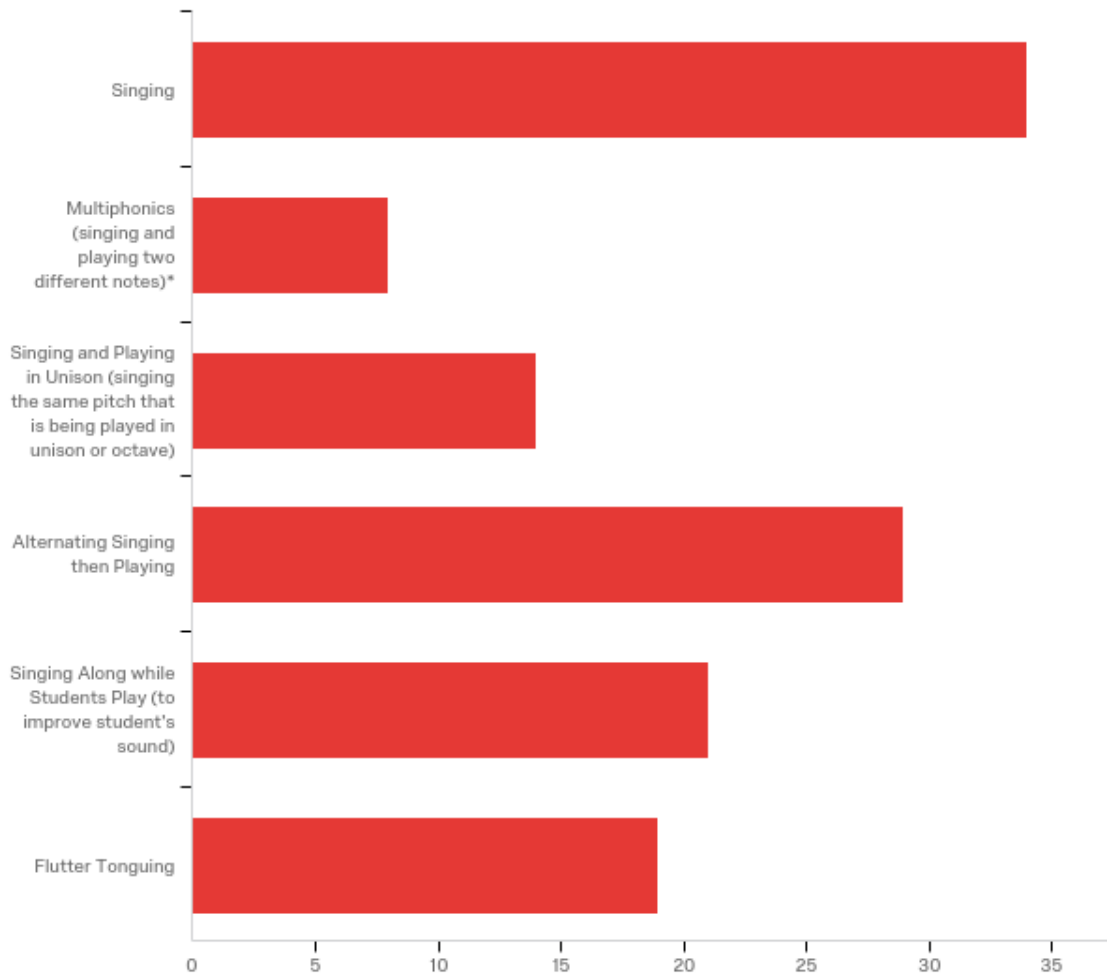
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Joey Sellers: balloon mute with party favor or extra long balloon

---

Jen Baker: No devices, just the trombone and varying air flow to control the tone.

**Which of the following techniques, if any, do you utilize to improve your overall tone on the trombone? Please click on all that apply and describe applicable exercises in the accompanying text box.**



#	Answer	%	Count
1	Singing	87.18%	34
2	Multiphonics (singing and playing two different notes)*	20.51%	8
3	Singing and Playing in Unison (singing the same pitch that is being played in unison or octave)	35.90%	14
4	Alternating Singing then Playing	74.36%	29
5	Singing Along while Students Play (to improve student's sound)	53.85%	21
6	Flutter Tonguing	48.72%	19
	Total	100%	39

### **Singing**

Deb Scott: I find singing infinitely helpful in developing tone and accuracy of pitch among other things.

Doug Yeo: I sing in my church choir, a fine group

Randall Hawes: Mostly singing phrases of music.

David Binder: Yes, always trying to be naturally cantabile on trombone

Don Lucas: Absolutely yes

James Decker: Singing of scales, arpeggios, intervals and music to be played

Irvin Wagner: Singing is an extremely important aspect of playing the trombone. There are several avenues I take: One is to sing a passage or entire piece, then strive to play it. One can accomplish so much with overall musicianship, expressiveness, and accuracy when going back to the trombone. A second aspect is achieving a more musical approach to a piece of music by singing it first, and then try to emulate the same musicianship on the trombone.

Stuart Dempster: singing as separate practice component

John Drew: Encouraged for the student, but not personally applied on a regular basis

Svenne Larsson: Very much.

Joey Sellers: a must

Jen Baker: Not as much now as when I was a student, but I do use singing a passage I'm practicing to improve phrasing and tone.

Edward Zadrozny: I sing, but not in the traditional sense. My singing is all done internally. I merely want my performance to be a mirror of what I am singing internally.



### **Multiphonics (singing and playing two different notes)**

William Lang: i use this technique but not to make my trombone sound better.

James Decker: Have students sing and play simultaneously to form embouchure and to create a greater center of tone in the basic playing

Irvin Wagner: A very useful tool for the development of musicianship and pitch. Good for the mind also in doing more than one task at a time.

Stuart Dempster: resonant fifths and tenths can work well work particularly well in relaxing throat

Svenne Larsson: Sometimes.

Joey Sellers: several etudes to develop independent lines

Jen Baker: Infrequent, but occasionally it helps reset the embouchure to its normal (traditional) place.

### **Singing and Playing in Unison**

Don Lucas: No

Svenne Larsson: Sometimes.

Joey Sellers: trombone quartet #2 uses this for sonic affect

### **Alternating Singing then Playing**

David Binder: Hear it sing it play it

Don Lucas: yes

James Decker: Compare playing with singing to emulate the natural musicality of singing into the playing

Irvin Wagner: I do not do this often, but sometimes I alternate just to get to the heart of the music.

Svenne Larsson: Very much.

Joey Sellers: when transcribing

Jen Baker: same as singing

### **Singing Along while Students Play**

David Stuart: Sometimes so they'll have to play louder and fuller to cover my abysmal singing voice.

Irvin Wagner: This I almost always do. This is an old Remington Technic and a GREAT one. Singing along with the students helps all the technical aspects of the

student including sound, but perhaps more important is the musicianship and expressiveness that can be achieved. In my own case studying with Remington, I soon found out that my best playing was while he was singing, and the rest of the time I was trying to achieve the same results on my own.

Svenne Larsson: Very much

Joey Sellers: always

Edward Zadrozny: I have found this to be extremely beneficial for my students. As I understand it, this was a common practice in lessons with the legendary Emory Remington.

Peter Ellefson: This is more for enhancing musicality which can also lead to a better sound. Also to show timbres and how to pursue a more appropriate sound

### **Flutter Tonguing**

David Binder: Occasionally for faster loud articulate music (Hungarian, William tell e.g.) keeping the air up at all times

Don Lucas: yes

James Decker: Used to stimulate and intensify air support

Irvin Wagner: I frequently use this to help the student understand that one has to keep the air going constantly when playing, and flutter tonguing is a great way to get this across to student. It is understood that a flutter tongue will not happen unless the air is moving, and this is a super "eye opener" for students.

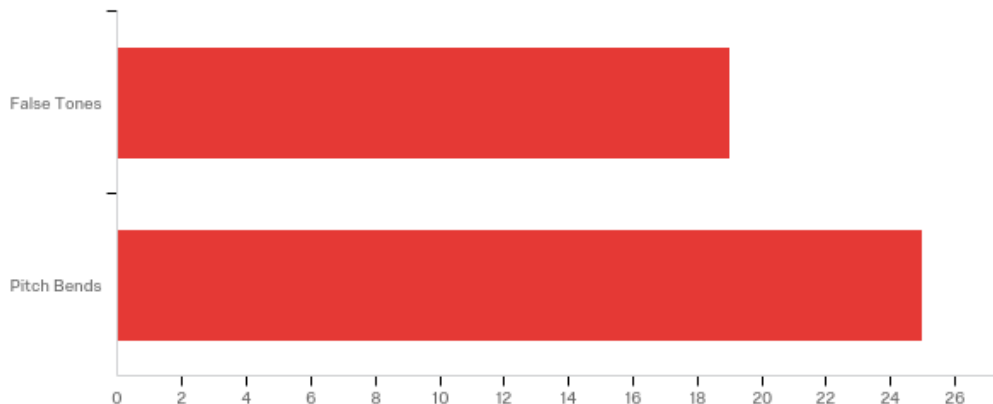
Ralph Sauer: Occasionally to correct air problems.

Svenne Larsson: Sometimes.

Joey Sellers: transcription and trombone quartet #2

Jen Baker: Just a breath length of flutter tongue here and there.

**Which of the following techniques, if any, do you utilize to improve your overall tone on the trombone? Please click on all that apply and describe applicable exercises in the accompanying text box.**



#	Answer	%	Count
1	False Tones	67.86%	19
2	Pitch Bends	89.29%	25
	Total	100%	28

### **False Tones**

Stephen Fissel: Jeff Reynolds exercises

Randall Hawes: Mostly low B natural, below the staff.

David Begnoche: I use some Slokar exercises that pitch bend to false tones for warm down only.

Don Lucas: yes

James Decker: Used in the second partial area to solidify embouchure control in and through the trigger register

Irvin Wagner: False tones are great. This teaches the students to produce a pitch that is not acoustically on the horn which develops the ear and well as the air needed to produce a good tone.

Stuart Dempster: false tones in low range w/o trigger(s) can brighten tone when going back to trigger(s)

John Drew: Use in a variety of contexts--to loosen up, warm down and interspersed with the Caruso exercises

Svenne Larsson: Yes, but only the "one position down"

Joey Sellers: roy main again, and octave and minor 9

Jen Baker: usually F through B, especially B (not on the horn). Maybe once or twice I'll do this in a session, and then play its octave or true tone to compare air flow and tone.

Peter Ellefson: Enhances the valve register

### **Pitch Bends**

Martin Schippers: Can help improving low or high range but has nothing to do with improving tone quality in my view.

Stephen Fissel: Jeff Reynolds exercises

Randall Hawes: Sometimes, while working in Jeff Reynolds book.

David Begnoche: I do use pitch bend but sparingly.

Don Lucas: yes

James Decker: I have students bend below the intended pitch and come back to the sound, but not return all the way to their original tone. I do this to help develop and encourage more of a 'fundamental' or core to their sound.

Irvin Wagner: I do not use this often, but on occasion to teach student to get correct pitches.

Natalie Mannix: Low Bb-A-Bb, Bb-A-Ab-A-Bb in first position, if a student has a pinched sound: bending everything 10c flat.

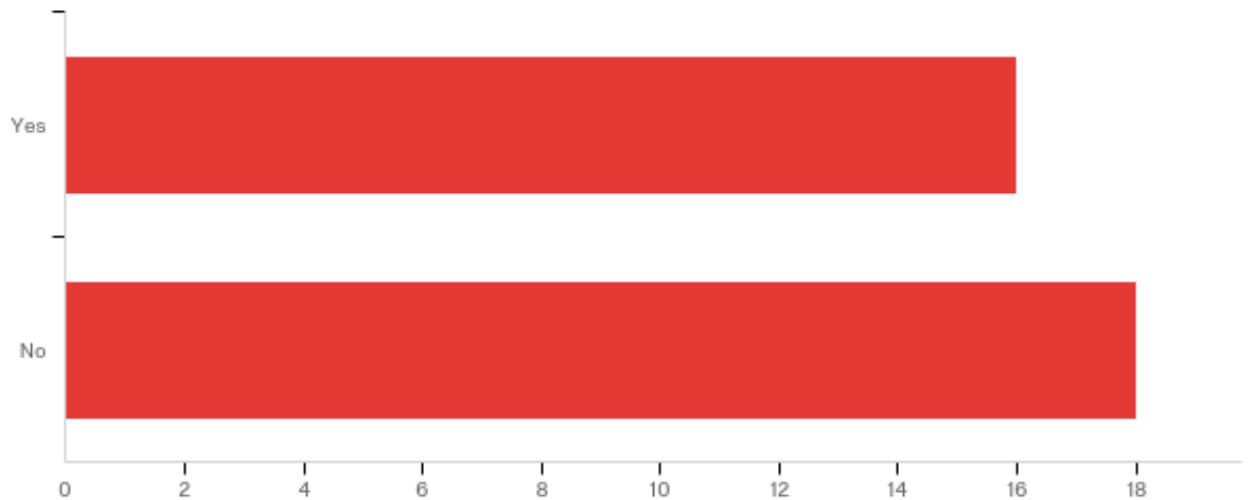
Svenne Larsson: Well, only certain tones. "under privileged tones."

Joey Sellers: I use as a recovery technique following day after hard blow

Jen Baker: Occasionally I'll do a half step down and back up. Helps with response and centered tone.

Peter Ellefson: Helps to center to pitch

**Are there any other non-traditional methods of tone development that you utilize that have not been mentioned in this questionnaire? If so, please describe.**



#	Answer	%	Count
1	Yes	47.06%	16
2	No	52.94%	18
	Total	100%	34

## Yes

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Martin Schippers: Above all methods it's important to have an image in your head of how you want to sound. Also focus on practicing with as less as possible unnecessary tension in your body as possible. Every little bit of tension in your neck, shoulders, arms, chest, back etc. will affect your breathing apparatus and your tone quality.

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Deb Scott: I work with students to slowly drop their jaw until the note "gives out", then we practice stopping the jaw movement right before the note "gives out". This immediately fixes poor tone quality problems particularly with younger students.

---

Paul Compton: This may fall under the category of traditional but I think listening to recordings of great players with great sounds is a vital part of tone improvement at all levels. I have gone so far as to extract single notes or phrases from recordings and used them for modeling and as drones. I believe that drone work, in particular using the cello drones that are available has a significant impact on tone. I also use a method attributed to Tommy Dorsey involving a drinking glass with water and a straw, blowing bubbles of various sizes and amounts. This improves breath control and air movement ultimately improving tone.

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Randall Hawes: With young students, I demonstrate an awful, tight, pinched tone, then explain and demonstrate that I will do the opposite to achieve a beautiful open sound.

---

Brian Hecht: Practicing with ear buds in and getting my sound to vibrate over the music, not with volume but maximizing resonance

---

Don Lucas: NO

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Irvin Wagner: Maybe jogging or physical exercise of any sort. Another aspect towards becoming a better player is listening to other play or recordings.

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Carl Lenthe: Extreme dynamics and range

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Stuart Dempster: Vowel sounds are special because it brings attention to mouth shape; one can gain increasing sensitivity to mouth shapes working with vowels.

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Natalie Mannix: Long note swells: pp-ff-pp

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Mark Lawrence: Listening to recordings

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John Drew: Use of long tones---cresc--decrescendo

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Logan Chopyk: Straw. Moving air through the shank of the mouthpiece.

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Joey Sellers: playing poems and/or "reciting" poems on trombone

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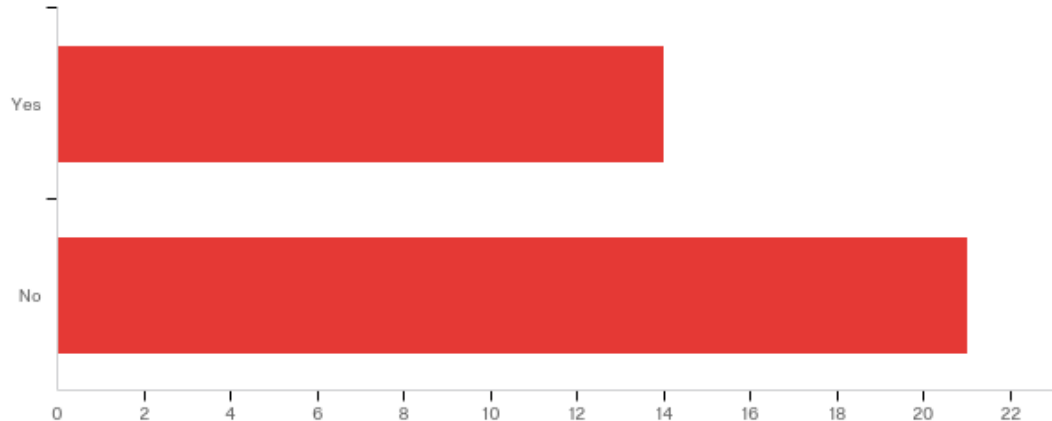
David Vining: low playing

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Brad Edwards: Precede phrase with a 'breath cycle' - full breath in and then blow out through instrument, then breathe normally to play

---

**Do you feel there are any negative stigmas toward practicing non-traditional or extended techniques for tone development or other purposes? Please describe.**



#	Answer	%	Count
1	Yes	40.00%	14
2	No	60.00%	21
	Total	100%	35

**Yes**

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Stephen Fissel: I've not had too much success with starting these sorts of exercises with young or avocational players. The reason is that they are not playing the trombone enough to have the perspective in their playing for it to be effectively utilized. One exception is in teaching the attachment range where I have found false and bent notes to be helpful in getting the student to understand what they need to do to get a resonant tone in that range.

---

Paul Compton: Obviously there will always be a person that thinks exactly opposite anything that exists. I think the recent battles between those who buzz and those who don't is excessive. Moderation is the key.

---

Brian Hecht: Some techniques such as using a practice mute, if done in excess can cause damage to the players sound

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Gerry Pagano: with anything that is different, there can be a back lash against it

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Don Lucas: yes, some teachers object to Mouthpiece Buzzing or free buzzing.

Stuart Dempster: When first practicing multiphonics and/or vowels in can hurt traditional emb until one gets use to it. After that period one's sensitivity to mouth shape is very keen.

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Natalie Mannix: people think that buzzing causes too much tension and/or focal dystonia. I disagree.

---

Svenne Larsson: Yes the problem is that many musicians warn against techniques they don't know.

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Jen Baker: The primary stigma I run up against is the misnomer that contemporary music is somehow easier than traditional music, so trombonists who play contemporary rep do it because they can't play traditional rep at a high enough level. I do both professionally and get different types of enjoyment from each. In traditional playing, it is a relaxing experience - this music is normally a lot easier for me so I don't have to work hard to sound good. With contemporary music, I get the satisfaction of learning new skill sets and applying them to music, which often requires much more focus and practice prep time.

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Sarah Paradis: I feel there is a negative stigma towards free buzzing. I think some people believe it is too different from actually playing the instrument to benefit the player. I've also heard of negative stigmas around embouchure strengthening exercises for similar reasons.

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Peter Ellefson: The most important ingredient in sound production is concept. If a concept is poor, traditional or non-traditional techniques will not help.

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## No

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Randall Hawes: Whatever works.

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David Begnoche: extended technique for the instrument are simply required techniques to be able to play all of our repertoire. Personally I do not see them as extraneous but simply part of our competency/mastery of the instrument. "there's beauty in ugliness" and sometime its necessary so you must have the skills to properly play what the music demands.

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Irvin Wagner: As long as they are used within reason and in order to accomplish a specific technique.

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John Drew: Not necessarily---although I don't think everything works equally for everyone

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Joey Sellers: Do what we do and let the others wither

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## **If you have any thoughts or theories on why non-traditional techniques as a whole are effective or not effective for the development of tone please describe them here:**

Stephen Fissel: For the development of the quality of the sound, there is no substitute for regular long tone practice. That isn't to say that performing nontraditional techniques isn't a tone builder; it clearly is. But I had a good sound on the trombone before I ever practiced non-traditional techniques. As I use them now, non-traditional

techniques help me evaluate the condition of my chops, help my chops "get active" when they feel tired or unresponsive, or help hasten a quick warm-up and get the vibrancy of my chops going, thereby producing a better sound, faster.

---

Deb Scott: My preference is to use non-traditional techniques sparingly, as supplements to traditional practice. I find that it is more important for a player to have the sound of what they want to emulate in their concept by listening to advanced players. However, it is very important to have many different tools to use to be an effective teacher or student.

---

Randall Hawes: I believe a player/teacher has to utilize teaching techniques that fit the particular student. One size does not fit all; we are all so different physically and mentally. And, we learn and absorb information differently.

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Gerry Pagano: Sometimes you need to approach an issue from many different directions. Any and all ideas should be considered, at least once, until and unless they should prove detrimental. You never know if something is helpful if you don't try it. But as with anything radically different, it should be done with caution, very thoughtfully, and discarded immediately if it proves either not helpful, or actually hurtful.

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David Binder: I wouldn't oppose someone using it if they think it helps, but I can't imagine doing something vastly different than your normal playing is going to improve your playing more than just traditional techniques.

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Don Lucas: Depends on the individual student's needs.

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William Lang: to me, non-traditional techniques are their own sound world, and not tools to make the traditional classical trombone sound "better." if I'm speaking honestly this questionnaire seems poorly worded. the development of tone happens through playing, and the development of "non-traditional" techniques occupy their own space and tone colors.

---

Irvin Wagner: They can be very useful for some students, as well as for my own playing, as reminders of proper playing techniques. We all need fundamentals constantly, and some of these techniques are very helpful. I have found that at times, some of these techniques are useful mental exercises.

---

Stuart Dempster: As alluded to above, various new techniques can assist in developing tone quality. I mention multiphonics and vowels in particular but there are other less important techniques that are nevertheless useful such as certain mute use (wa-wa) and the various vibrati. Please consult my book *The Modern Trombone*, available from Accura Music for more details. If you use small quotes from TMT please cite author (Stuart Dempster). For more extensive quotes, please obtain permission from publisher: Accura Music

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Natalie Mannix: Students learn in many different ways. What works for one, may not hit home for another. Casting a wide net, by trying many different approaches, will ensure that something will hit home. Really it is all about air projection, embouchure and internal sound concept/pitch. Finding the right exercise or approach for each student is important.

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Logan Chopyk: Everyone hits walls in their development on the trombone. Many times it's due to unawareness of the subtle tensions that are preventing success. Or if there is awareness, many are unable to overcome those limitations by intellect alone.



Non-traditional techniques can teach the body to do an action that the trombone cannot. Once one gets the feeling of moving air freely through a tube, the body can apply that to the trombone. Our trombone playing tends to be loaded with tons of a baggage. We rely on it for income, social prestige, career success, self-worth, etc. So, taking the risk of playing so easily that you are willing to let the tone fail is not an easy task. But it is easy if you blow through a straw or at a pinwheel. those things have zero baggage.

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Joey Sellers: Anything that deals with sound and creativity is valuable

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Brad Edwards: Some students can't flutter tongue.

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Jen Baker: Non traditional techniques increase the envelope of possible sounds. When a person knows more sounds, they have more points of reference for what an optimal sound is in any given situation, be it tone, dynamics, phrasing, etc. Non traditional techniques also provide the opportunity to study what the mouth/embouchure/air does differently, and allows one to create a wider spectrum of comparison between traditional styles, non-traditional styles, and between traditional and non-traditional styles.

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Sarah Paradis: I think it's useful to approach a problem from various angles, and I think non-traditional techniques can help enrich this process.

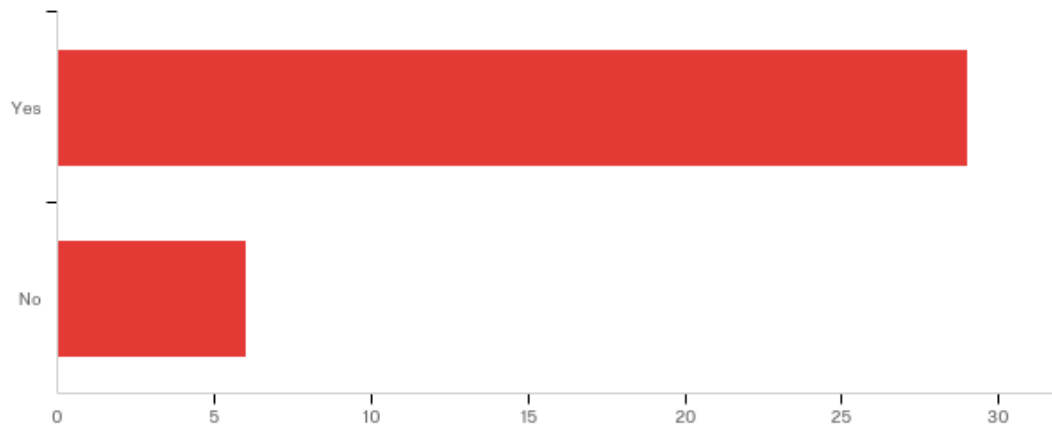
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Edward Zadrozny: Be judicious as to what techniques you choose to employ. Personally, I tend to gravitate to things that seem logical and natural in their approach. If you are doing things that seem unnatural or, worse yet, painful, there is a good chance that those techniques will be detrimental to you or what you are trying to achieve.

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Peter Ellefson: I guess the end justifies the means. If one's sound is improved by using such techniques, then go for it. How is it quantifiable that the same development could not have been achieved by traditional means?

**Do you feel non-traditional or extended techniques are useful as pedagogical tools for tone development? Why or why not? Please explain.**



#	Answer	%	Count
1	Yes	82.86%	29
2	No	17.14%	6
	Total	100%	35

### Yes

Martin Schippers: Any technique that helps someone to improve is useful. But I believe in making the playing as simple as possible, which is often one of the most difficult things to do :-). Good basic position, no unnecessary tension, tone image in your head and a direct connection between what you have in your head and what comes out of the instrument.

Stephen Fissel: Of course, if introduced to the student who has the motivation and time to use and appreciate the methods.

Ruben Carughi: The student should investigate what is best for him / her. We are all different and I do not believe that the same exercise can serve everyone equally.

Doug Yeo: A person who does not utilize a variety of methods to improve playing is foolish.

Randall Hawes: Read answer above.

Don Lucas: yes

James Decker: Any time that one creates a pattern interruption or unfamiliarity this presents the opportunity for new directions that could help break down obstacles for improvement

Irvin Wagner: Even people like me who basically do not get involved in these non-traditional techniques, we use them without thinking at times. And this proves to be very beneficial.

Stuart Dempster: I have addressed this earlier

Ralph Sauer: Yes, if they produced the desired results.

Natalie Mannix: I find all of the above as helpful in improving tone. They all help improve air projection, embouchure development or internal sound concept.

John Drew: Depends on the person

Svenne Larsson: Makes you listen carefully, get more aware of what you can do.

Logan Chopyk: Students freak out about trombone playing. They have deep beliefs about what they HAVE to do to accomplish playing a tone. Usually, those ideas are wrong. Non-traditional techniques can trick the body into playing in a better way so that a student can veer towards healthy, easy, air-based, playing

Joey Sellers: Opens the mind

Brad Edwards: Whatever works.

---

Jen Baker: Repeating myself a bit but here goes: All sounds are valid, but some should be practiced more than others. It is important to find a balance for optimal flexibility in the embouchure. The more sounds a person knows and plays, the more reference points a person has with regard to where the tongue is, the pressure of the mouthpiece, the action of the embouchure, etc. In traditional playing, these things are supposed to be static, but once you introduce non-trad playing to the equation, these technical things become dynamic.

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Sarah Paradis: see above response

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Edward Zadrozny: It depends. Please see last response.

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## No

David Binder: The best sound is one created in the easiest manner. Adding extra stuff into the mix would likely not get you to the easiest, most efficient sound production. This doesn't include what I'd consider not-non traditional, like mouthpiece buzzing.

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William Lang: i believe they are separate tone worlds and should not be treated as supplemental activities

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Peter Ellefson: I am a fan of the same old school approach that produced the finest players of today. Non-traditional or extended techniques can be valuable to certain players pursuing a specific type of playing. I guess I need to know what "tone" is in tone development.

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## **If you have any other comments you would like to make regarding the use of non-traditional techniques to develop tone please do so here:**

Joey Sellers: Thanks and good luck.

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Don Lucas: None.

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Irvin Wagner: Thanks for doing this study. It is very interesting and timely. We live in an era where these non-traditional techniques are more prominent, and it is wise to learn about them to utilize them as well as be cautious of students might be overdoing some of them.

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Doug Yeo: I have this comment about this survey: your questions are all devised with the assumption that a player does or does not use non-traditional techniques in order to develop tone. But I would say that the non-traditional techniques I use are not mainly used to develop tone. They are used to either warm up, or develop better facility on the trombone in a variety of ways. To develop tone, I practice the trombone. I have found that mouthpiece buzzing itself has some limited benefits but those benefits are not related to tone improvement.

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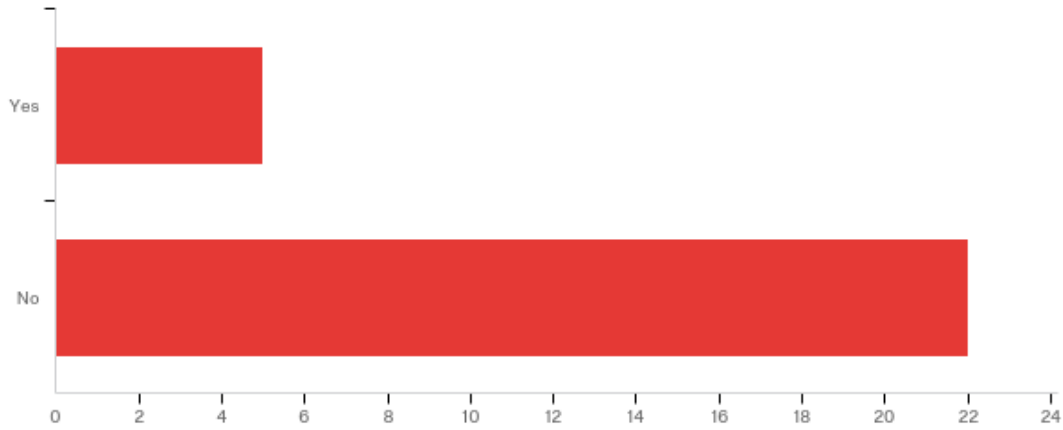
Jen Baker: Improvisation has by far been my most beneficial non-traditional technique. I turn off the critical part of the brain and play anything, with any technique. I've gone deep into sound places that some might consider an ugly sound,

or poor technique. Besides the artistic satisfaction I get from improvising freely (which is 99% the reason I do it), I also have the opportunity to deconstruct those sounds later, and to discover ever more efficient ways to return to a solid traditional sound/techniques. So free improvisation, as indirect as it may seem, is a gigantic aid in describing the difference in, for example, the mouth feel between traditional and non traditional playing and serves me pedagogically on a regular basis when I teach.

Edward Zadrozny: Keep it relaxed and natural. If you find yourself contorting, straining, etc., it's probably wrong. Be especially aware of tension in the embouchure, throat, and thoracic cavity. Sing, breathe and blow, FREELY!

Peter Ellefson: Is the consumption of Martinson's candy considered non-traditional for tone development? If so, I highly endorse the non-traditional approach.

**Were there any questions or topics that you feel should have been asked or covered in this questionnaire that were not? If so, please describe.**



#	Answer	%	Count
1	Yes	18.52%	5
2	No	81.48%	22
	Total	100%	27

**Yes**

Gerry Pagano: it comes under traditional techniques, but how much someone listens to music is an aspect that may be worth some discussion

David Begnoche: I think it is helpful to experiment with sound, to explore how we can manipulate the color of our tone in a larger room. If one listens to how their sound fills the space it can help redefine ones perception of tone. For example observing the resonance and vibrancy of ones tone behind where you are standing or experimenting in making ones tone more compact without loosing depth or bigger without becoming defuse. I would not call this non-traditional in anyway but there

was not a question that allowed for this discussion. The more one experiments with tone the greater their skills will be to produce the sound they want/need for a given piece of music. I often give students a "simple orchestration" assignment with Bordogni just asking them to mark each phrase (or portion of the phrase) with the instrument or combination of instruments that would sound "best" playing that passage. Can they match the style and sound and ease of those instruments on the trombone? Can they manipulate their articulation and vibrato and phrasing tendencies to replicate the tone and style of those instruments? As trombonists we are often performing with others and need to have the flexibility to blend and match tone with a myriad of instruments so this is directly related to the topic.

David Binder: Yes

Stuart Dempster: Using a reverberant space or a pedal-blocked piano can teach good tonal center and intonation. Conversely seek out the practice room that everyone hates and learn to create one's own resonance

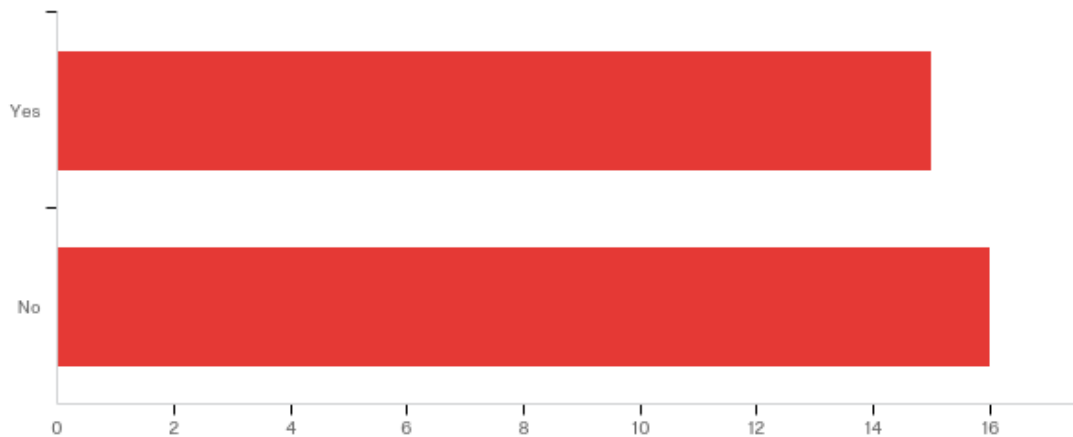
Peter Ellefson: The description of "tone." It is a subjective and highly variable subject.

**No**

Don Lucas: no

Joey Sellers: good job

**Are you aware of any trombonists who frequently use non-traditional techniques to develop sound/tone? If so, please list.**



#	Answer	%	Count
1	Yes	48.39%	15
2	No	51.61%	16

**Yes**

---

Stephen Fissel: Yes, but not many.

---

Paul Compton: I think traditional techniques work for a majority, but it is always important to have more options for those who can't arrive at great tone the typical way. I think everyone teaching trombone probably has some variant on how to get there.

---

Brian Hecht: I do

---

Gerry Pagano: Very long list that I choose not to go into, but yes lots of folks do at least one thing that could be considered non-traditional

---

Don Lucas: yes, the ones I have mentioned

---

William Lang: the list is too long to put here - almost every professional trombonist knows some of these sounds

---

Irvin Wagner: I will think about this

---

Stuart Dempster: Jen Baker's new book "Hooked on Multiphonics" brings up a lot of wonderful considerations (Jen will present at ITF17)

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Natalie Mannix: All trombonists I know use something on this list. In my mind, they are rather traditional.

---

Svenne Larsson: My self, Jörgen Johansson, Stuart Dempster and more.

---

Logan Chopyk: Brian Hecht, Jan Kagarice, Paul Pollard

---

Joey Sellers: Ryan Dragon

---

Jen Baker: I know many, but I can't remember offhand who they are. Flutter tongue seems to be the most common technique.

---

Edward Zadrozny: Almost anyone influenced by the teaching of Arnold Jacobs.

## Appendix D: Institutional Review Board Approval



### Institutional Review Board for the Protection of Human Subjects

#### Approval of Initial Submission – Exempt from IRB Review – AP01

**Date:** March 28, 2017      **IRB#:** 7765  
**Principal Approval Date:** 03/28/2017  
**Investigator:** Philip Mitchell Martinson  
**Exempt Category:** 2

**Study Title:** Tone Development through Non-traditional Techniques:  
A Pedagogical Resource for Trombonists

On behalf of the Institutional Review Board (IRB), I have reviewed the above-referenced research study and determined that it meets the criteria for exemption from IRB review. To view the documents approved for this submission, open this study from the *My Studies* option, go to *Submission History*, go to *Completed Submissions* tab and then click the *Details* icon.

As principal investigator of this research study, you are responsible to:

- Conduct the research study in a manner consistent with the requirements of the IRB and federal regulations 45 CFR 46.
- Request approval from the IRB prior to implementing any/all modifications as changes could affect the exempt status determination.
- Maintain accurate and complete study records for evaluation by the HRPP Quality Improvement Program and, if applicable, inspection by regulatory agencies and/or the study sponsor.
- Notify the IRB at the completion of the project.

If you have questions about this notification or using iRIS, contact the IRB @ 405-325-8110 or [irb@ou.edu](mailto:irb@ou.edu).

Cordially,

A handwritten signature in black ink that reads 'Ioana A. Cionea'.

Ioana Cionea, PhD  
Vice Chair, Institutional Review Board

## Appendix E: Consent Form

### Consent to Participate in Research Form

Hello my name is Philip Martinson, I am a doctoral student at the University of Oklahoma and I invite you to participate in my research project entitled Tone Development through Nontraditional Techniques. You were selected as a possible participant because you are recognized as a qualified expert trombone performer/pedagogue. You must be at least 18 years of age to participate in this study.

**Please read this form and contact me if you have any questions BEFORE agreeing to take part in my research.**

**What is the purpose of this study?** The purpose of this study is to identify, assemble, and catalog non-traditional exercises focused on tone development into a pedagogical resource for trombonists.

**How many participants will be in this study?** Approximately 100 trombonists will take part in this research.

**What will I be asked to do?** If you agree to be in this study, you will complete the questionnaire following this consent form. The questionnaire is made up of several “yes or no” questions along with several “check all that apply” questions regarding the topic of this study. If necessary, the researcher may send a follow-up questionnaire for clarification of your responses on the initial questionnaire. Responding to the follow-up questionnaire is optional.

**How long will this take?** Your participation will take approximately 10 minutes. If necessary, the follow-up questionnaire will take approximately 5 minutes.

**What are the risks and/or benefits if I participate?** No risks, nor benefits, accompany participation in this study.

**Will I be compensated for participating?** You will not be reimbursed for your time and participation in this research.

**Who will see my information?** Research records will be stored securely and only approved researchers and the OU Institutional Review Board will have access to the records.

**Do I have to participate?** No. If you do not participate, you will not be penalized or lose benefits or services unrelated to the research. If you decide to participate, you may skip questions and/or stop participating at any time.

**Waiver of Elements of Confidentiality:**

The researcher requests your consent for participation in this study entitled Tone Development through Non-traditional Techniques. This consent form asks you to allow the researcher to record and view the questionnaire and to use your comments to enhance understanding of the topic. This consent form asks for permission to allow the researcher to name you and your position and to quote you directly. This form also asks your permission to use related documents, images or descriptions of exercises shared by you or generated from this questionnaire (researcher will acknowledge submitter and materials). Participation in this study is completely voluntary. If you decide not to participate there will not be any negative consequences. Please be aware that if you



decide to participate, you may stop participating at any time and you may decide not to answer any specific question. By submitting this form you are indicating that you have read the description of the study, are over the age of 18, and that you agree to the terms as described.

IRB NUMBER: 7765  
IRB APPROVAL DATE: 03/28/2017

If you have any questions, or would like a copy of this consent form, please contact me at philip.martinson@ou.edu, (406) 697-4659, or my advisor, Dr. Irvin Wagner: iwagner@ou.edu, (405) 325-5344. You can also contact the University of Oklahoma – Norman Campus Institutional Review Board (OU-NC IRB) at (405) 325-8110 or irb@ou.edu if you have questions about your rights as a research participant, concerns, or complaints about the research and wish to talk to someone other than the researcher or if you cannot reach the researcher.

Thank you in advance for your participation!

**I agree to participate in the research study. I understand the purpose and nature of this study and I am participating voluntarily. I understand that I can withdraw from the study at any time, without any penalty or consequences. I grant permission for the data generated from this questionnaire to be used in the researcher's publications on this topic.**

- Yes, I agree to participate.
- No, I do not want to participate.

This research has been approved by the University of Oklahoma, Norman Campus IRB.  
IRB Number: 7765 Approval date: 03/28/2017

## Appendix F: Recruitment Email

Dear Prospective Participant,

Hello my name is Philip Martinson, I am a doctoral student at the University of Oklahoma and am emailing you to invite you to participate in my research project entitled, "Tone Development through Non-traditional Techniques: A Pedagogical Resource for Trombonists." You were selected as a possible participant because you are recognized as an expert professional trombone performer/pedagogue.

The purpose of this study is to identify, assemble, and catalog non-traditional exercises focused on tone development into a pedagogical resource for trombonists. Most trombonists are familiar with traditional methods of tone development such as long tones and lip slurs, and while these familiar methods will always remain at the foundation of playing the trombone, this study seeks to discover innovative new tactics currently used by trombonists.

If you agree to be in this study, you will simply complete a questionnaire made up of several "yes or no" questions along with several "check all that apply" questions regarding the topic of this study. If necessary, the researcher may send a follow-up questionnaire for clarification of your responses on the initial questionnaire. Responding to the follow-up questionnaire is optional. Your participation will take approximately 10 minutes. If necessary, the follow-up questionnaire will take approximately 5 minutes.

I sincerely hope you'll consider participating in this study. Please click on the following link to access the questionnaire:

[https://ousurvey.qualtrics.com/SE/?SID=SV\\_9BUcDZbCmBDtqfj](https://ousurvey.qualtrics.com/SE/?SID=SV_9BUcDZbCmBDtqfj)

Thanks for considering,

Philip Martinson



Second Trombone  
Oklahoma City Philharmonic  
[www.PhilipMartinson.com](http://www.PhilipMartinson.com)  
(406) 697-4659

The University of Oklahoma is an equal opportunity institution.  
IRB NUMBER: 7765  
IRB APPROVAL DATE: 03/28/2017