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Directed by Dr. Randy Kohlenberg. 54 pages.

- I. Solo Recital: Tuesday, November 20, 2018, 5:30 p.m., Organ Hall. *Concerto in F-Minor, HWV 287* (Georg Frederic Handel); *Sonate* (Paul Hindemith); *A Winter's Night* (Kevin McKee); *First Movement from Concerto for Trombone* (Gordon Jacob).
- II. Solo Recital: Tuesday, April 30, 2019, 5:30 p.m., Organ Hall. *Beau Soir* (Claude Debussy); *Ballade* (Eugène Bozza); *Selections from Ariettes oubliées* (Claude Debussy); *Trombone Concerto* (Edward Gregson).
- III. Solo Recital: Saturday April 18, 2020, 7:30 p.m., Recital Hall. *Concerto per Trombone* (Georg Christoph Wagenseil), *First Movement from Concerto pour Trombone et Orchestre* (Henri Tomasi), *Trombone Sonata* (Vagn Holmboe), *The Journey Home* (Martin Mikles), *Remember?* (James Grant).
- IV. D.M.A. Research Project. TRANSITIONING FROM THE EUPHONIUM TO THE TROMBONE: A FOUR-YEAR CASE STUDY, (2020). Musicians may transition from one instrument to a different primary instrument during the first few years of their study. In this case study, the Subject transitioned from euphonium to tenor trombone as an additional primary performance instrument during their graduate studies. Although both instruments are similar in construction and range, the trombone necessarily was approached differently in relation to inhalation and exhalation, posture and holding position, and the fundamentals of trombone playing: tone, intonation, articulation, handslide

technique, and rhythmic execution. The four-year study tracked the Subject's progress in developing those fundamentals through practice habits and musical performances. The results demonstrated that, even in the later phases of a Subject's musical studies, the transition from one primary instrument to another is possible focusing extensively on fundamentals. The study verified that prior musical training aided in expediting the transition and allowed the primary focus to be on the differences between the instruments while maintaining the musical or expressive techniques common to both. The intention of this study has been to create a resource for current euphonium players who may necessarily be required to perform and teach trombone in their career.

TRANSITIONING FROM THE EUPHONIUM TO THE TROMBONE:  
A FOUR-YEAR CASE STUDY

by

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APPROVAL PAGE

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## CHAPTER I

### INTRODUCTION

Collegiate music students typically begin musical training during adolescence to early teen years. Depending on a variety of circumstances during these formative years, some students are transitioned to a different instrument that usually proves to be a more challenging instrument to learn. After these students have reached a certain level of proficiency on the newer instrument, they do not change from that instrument, and it becomes the primary instrument throughout the musical career. Many of these musicians accepted into a collegiate school of music may select a secondary instrument but will continue major studies on the primary instrument.

Learning to play a secondary instrument is common in the low brass performance area, although some players may not be able to dedicate as much time as possible to become proficient at an advanced level.<sup>1</sup> Low brass players may likely be able to play trombone, euphonium, and tuba at a slightly higher than basic level, but few necessarily will be able to achieve the proficiency comparable to the primary instrument. For example, a euphonium player might learn to play the trombone to pursue more performance opportunities in the community. The player may not practice the trombone as much as the euphonium. More advanced players, however, might attempt to dedicate an equal amount of practice time to both instruments to attain a similar proficiency level.

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<sup>1</sup> Micah Everett, Frank Gazada, Alexander Lapins, Marc Dickman, Jeffery Cortazzo, Brian French, J. Mark Thompson, *The Low Brass Player's Guide to Doubling*, (Flagstaff, Mountain Peak Music, 2014), 1-4.

If the euphonium player plays trombone often, the euphonium is still considered to be the primary instrument. At the graduate performance level, students tend not to deviate from the primary instrument. Again, the player may select a secondary instrument to allow for more performance opportunities but they do not deviate from the original primary instrument.<sup>2</sup>

Studies have not been identified pertaining to the area of transitioning from the primary instrument to another instrument during later years. In the case of this study, the Subject, having received a master of music degree in euphonium performance, chose to pursue the tenor trombone as the primary instrument. Since the transition to trombone as the primary instrument, the Subject has completed the doctoral degree in trombone performance. After four years of playing tenor trombone almost exclusively, the Subject has performed on the euphonium on only twice, confirming that the tenor trombone is the primary instrument.

#### Statement of Purpose

The purpose of the case study was to document the four-year process of becoming a tenor trombone performer after previously studying euphonium performance through the baccalaureate and master of music degrees. A personal case study format was implemented to document three developmental phases. Initially, a discussion occurs about the basics of the transition with an emphasis on posture, holding position of the trombone, and inhalation and exhalation of air. Next, to better understand and discuss

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<sup>2</sup> Ibid, 1-4.

many of the aspects of playing the trombone during these times, five fundamental aspects of playing the trombone as detailed by Edward Kleinhammer in *The Art of Trombone Playing* is discussed as they pertain to three developmental stages. These 5 fundamental concepts include tone, intonation, articulation, technique, and rhythmic execution.<sup>3</sup>

### Procedures

A brief overview addressed the physical differences between the euphonium and the tenor trombone. The personal case study of Subject begins with the first year into the transition from the euphonium to the tenor trombone. The beginning of the case study details posture, instrument holding position, and inhalation and exhalation of air. The fundamentals of trombone playing are addressed along with a brief discussion of the Subject's experience. The five fundamentals of trombone playing are: tone, intonation, articulation, technique, and rhythmic execution. The Subject's tone developed as inhalation and exhalation become efficient. With a characteristic tone, the Subject could effectively place the handslide in the correct positions and tune individual pitches. With an efficient airstream and placement of the tip of the tongue, the Subject's articulation became clear. The Subject utilized several daily exercises to develop handslide technique and lip flexibility. With the development of articulation and technique, rhythmic execution became effective. Along with daily exercises, the Subject utilized several etude books and methods to further develop each fundamental throughout the study.

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<sup>3</sup> Edward Kleinhammer, *The Art of Trombone Playing*, (Evanston, Summy-Birchard, 1963), iii-iv.

## Organization

Transitioning from the Euphonium to the Trombone: A Four-Year Case Study is organized as follows: Chapter I includes the introduction and purpose of the study. This chapter includes a brief overview of the physical and timbral differences between the euphonium and the trombone. In the second chapter, the fundamentals of playing the trombone with respect to the transition from euphonium to tenor trombone is discussed. The information presented about the subject of the study focuses on the first year after the transition and discussions about exercises, method books, and etudes books which were used to facilitate the five fundamentals. Chapter III addresses the next two years of the subject continuing work on becoming a more consistent tenor trombonist. Fundamentals are discussed in terms of the subject's progress of gaining consistency along with some anecdotal evidence of the progress made. The fourth chapter details the subject gaining proficiency on tenor trombone during the last year. The five fundamentals are addressed in relation to the subject's ability to perform at a level expected of a graduate trombonist. Examples of performances and playing situations detail the level of consistency the subject achieved in executing each of the fundamentals towards the end of the doctoral degree. The final chapter includes of a summary of the study as well as conclusions about the both the process and result of the case study, and suggestions for further research related to this study concludes the document.

## CHAPTER II

### FIRST DEVELOPMENTAL PHASE: TRANSITIONING FROM EUPHONIUM TO TENOR TROMBONE

#### Differences between Trombone and Euphonium

The shape of the bore dictates the timbre of each brass instrument. The earliest iteration of the trombone appeared some time during the Fifteenth Century in northern Italy.<sup>4</sup> The early trombone through the early Nineteenth Century consisted of a slide tube mechanism that allowed chromatic pitches, which culminated with a bell for projection. Wilhelm Wieprecht and Johann Moritz invented the piston valve in 1835 that led to the development of the precursors to the euphonium.<sup>5</sup> Although many similarities exist, valves are the primary distinguishing factor between the trombone and euphonium. Fundamentally, all brass instruments are constructed similarly, although variations make each distinctive. According to Whitener in *A Complete Guide to Brass*:

Every brass instrument consists of four basic parts: the mouthpiece with its tapered backbore, a conical leadpipe, a section of cylindrical tubing containing the valves or slide, and the gradually expanding bell flare.<sup>6</sup>

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<sup>4</sup> Anthony Baines, *Brass Instruments: Their History and Development*, (New York, Dover Publications Inc., 1993), 107.

<sup>5</sup> *Ibid.*, 250-251.

<sup>6</sup> Scott Whitener, *A Complete Guide to Brass*, (New York, Schirmer Books, 1997), 8.

The bore of the leadpipe tapers immediately after the mouthpiece to the diameter of the rest of the instrument. The bell is the part of a brass instrument that vibrates to project the sound. The inner diameter progressively increases through the instrument until the culmination of the bell. The size and shape of the mouthpiece, the degree at which the leadpipe tapers, and the bell flare as well as other physical properties can affect the tone.

Brass instrument bores are two basic shapes. One bore shape is primarily cylindrical, a continual diameter prior to the bell flare. In *Fundamentals of Musical Acoustics*, Benade described how the lips create vibrations through a cylindrical bore. In short, the cylindrical bore allows for some of the stronger frequencies to vibrate towards the bell flare and weaker frequencies in between are less prominent and resonate back towards the player. The result is a sound that consists of the stronger lower frequencies, or overtones, and higher overtones that gives cylindrical brass instruments, trumpets and trombones, a brighter and more strident timbre.<sup>7</sup>

The conical brass instruments, the horn, euphonium, and tuba, tend to have a mellow and resonant tone relative to the trumpet and trombone. In a conical bore brass instrument, the inner diameter gradually increases towards the bell, and the bell flare is less when compared to cylindrical brass instruments. The changes in diameter through the instrument create more loss of frequencies from lip vibrations. Benade stated, "As a result, the conical instruments begin to leak sound at lower frequencies than do their

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<sup>7</sup> Arthur H. Benade, *Fundamentals of Acoustics*, (New York, Dover, 1976), 406.

flaring cousins having the same bell diameter, and leakage deprives conical instruments of their upper frequencies.”<sup>8</sup>

Both the tenor trombone and euphonium are constructed using the identical length of tubing but have differing bore shapes. Other differences include how chromatic pitches are executed. Both use the harmonic series to isolate partials to access the upper range. The trombone is constructed of a handslide that can be positioned away from the player to increase the overall length of the instrument and results in a lower pitch. By moving the handslide in conjunction with the partials, the trombone is able to play chromatically.<sup>9</sup> Tenor trombones may also have a valve with a separate length of tubing operated by the left thumb. This length of tubing, known as the F-attachment, lowers the overall pitch of the instrument by a perfect fourth. The function of the F-attachment allows the tenor trombone to be played in the lower register.<sup>10</sup> The euphonium constructed of three or four valves each have their own slides attached. When depressed, these slides lengthen the instrument by a specified interval. Using a single valve, or combinations of the valves, the instrument can be played chromatically. Similar to the F-attachment on tenor trombones, compensating euphoniums feature a system of extra tubing that engages by depressing the fourth valve.<sup>11</sup> This system allows pitches below G-flat 2 through the lower range to be played in tune.

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<sup>8</sup> Ibid, 411.

<sup>9</sup> Whitener, *A Complete Guide to Brass*, 68.

<sup>10</sup> Ibid, 72.

<sup>11</sup> Ibid, 88-90.

### Posture and Holding Position

A description of posture and holding position clarifies a discussion of tuning and technique. Successful trombone performance is dependent on effective posture and holding position. The spine that is a slight distance from the back of the chair allows for efficient movement of the right arm, shoulder, and lower torso. Although the back is not necessarily straight it should be relaxed to avoid upper body tension. A player supports the trombone with the left arm and the neckpiece placed near the middle of the neck.<sup>12</sup> The index finger of the left hand, placed near the mouthpiece shank, along with the remaining fingers cradling, not grasping, support the remaining weight of the instrument. This holding position avoids any weight on the right hand that may restrict the movement of the handslide. The thumb, middle, and ring fingers with support from the index and little finger holds the brace of the outer slide.<sup>13</sup>

Shortly after the transition, the Subject noted tension in the back, shoulders, and arms due to a lack of comfort and familiarity holding the trombone. The muscles in the left hand and arm ached from utilizing different muscle groups when compared to the euphonium. The Subject centered the weight of the trombone over the spine rather than placing the weight in front of the torso. Adjustment of the weight over the spine tended to cause excess muscle tension in the middle of the back. During the first weeks of the transition, playing time was limited to allow the back muscles to rest; this period of rest

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<sup>12</sup> Kleinhammer, *The Art of Trombone Playing*, 17.

<sup>13</sup> *Ibid*, 14.

allowed extended practice time. Stretching the shoulder, back, and lower torso eased the tension before and after playing.

During the first months of the transition, the Subject sat during practice to avoid lower back pain. Seated practice allowed the back muscles and shoulder to strengthen while supporting the lower back. Situating the *ischial tuberosity*, commonly known as the “sitz bone,” toward the front of the chair effectively avoided the lower back from resting on the back of the chair.<sup>14</sup> This seated posture freed the body to move and act as a shock absorber caused by the movement of the handslide. This seated posture facilitated the transition to standing.

#### Inhalation and Exhalation of Air

A review of breathing technique precedes a discussion of the five fundamentals of trombone playing. The trombone is a member of the aerophone family of musical instruments, meaning that air must be exhaled by the player to create necessary vibrations that produce sound. Breathing while playing a brass instrument is similar to breathing before and during speech. Playing a large brass instrument, however, requires a substantial quantity of air, but not an inordinate amount. The total air capacity of the lungs is determined by individual physical differences, but rarely exceeds four liters.<sup>15</sup> Tubist Arnold Jacobs stated in masterclasses, “most wind players use less than one-half

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<sup>14</sup> David A. Morton, K. Bo Foreman, Kurt H. Albertine, “Overview of the Abdomen, Pelvis, and Perineum,” *Gross Anatomy, 2E* (McGraw-Hill Education, 2019), accessed March 12, 2020, <https://accessmedicine-mhmedical-com.libproxy.uncg.edu/content.aspx?sectionid=202020392&bookid=2>  
<https://accessmedicine-mhmedical-com.libproxy.uncg.edu/content.aspx?sectionid=202020392&bookid=2478&jumpsectionid=202020401&Resultclick=2478&jumpsectionid=202020401&Resultclick=2>.

<sup>15</sup> Brain Frederiksen, *Arnold Jacobs: Song and Wind* (Windsong Press, 2010), 113.

of their vital capacity when playing their instrument.”<sup>16</sup> In this case study, the Subject mistakenly believed that a large brass instrument required maximum inhalation to produce a characteristic tone and maintain musical phrasing. The Subject realized that focus on effective exhalation was more efficient rather than the inhalation of a large quantity of air.

Breathing is an involuntary motion during which the contracted abdominal muscles, diaphragm, and lungs all work in tandem to create negative air pressure inside the lungs; this action causes air to enter from the positive pressure atmosphere. Air is inhaled through the nose or mouth, through the trachea, and into the lungs. When the abdominal muscles relax, the tension on the diaphragm eases and allows the spent air to be released. Normally, breathing is a cyclical process that is rarely interrupted; inhalation is proceeded immediately by an exhalation without stopping noticeably. Experienced wind players are be able to control this action voluntarily, a function similar to speaking or singing. During speech, inhalation engages the larynx to create vibrations during exhalation in a continuous motion. In the case of a brass player, the embouchure formed by the lips creates the vibrations in a similar fashion.<sup>17</sup>

### Tone

The tone of an instrument is dictated in part by how the instrument is constructed and, for brass instruments, how effectively a player breathes, produces lip vibrations, and other variables. A brass player’s tone is as distinctive as vocal timbre or a fingerprint.<sup>18</sup>

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<sup>16</sup> Ibid., 116.

<sup>17</sup> Ibid, 123.

<sup>18</sup> Ibid, 152.

Tone between players can sound similar, even homogenous in an ensemble setting, although each individual will have a distinct characteristic sound. Variables include consistency of the airstream, shape of the oral cavity, embouchure and mouthpiece placement, the actual mouthpiece and instrument, as well as others.

Consonants and vowels are the primary means of shaping the oral cavity during tone production. For purposes of the study, the oral cavity is considered to be that area between the tongue and the hard palate. When addressing tone production and articulation, this document refers to vowels initiated by consonants. On euphonium, the Subject primarily utilized the syllable “tah.” That syllable tended to open the oral cavity abnormally which in turn, angled the mouthpiece that caused excessive pressure on the upper lip. This pressure tended to impede the vibration of the upper lip. The Subject discovered the use of “toh” for the low and middle registers and “tu” for the middle and upper registers. This change created a resonant and more tuba-like tone on the euphonium. Using “toh” in the middle register typically morphed into “tah” because both syllables required the jaw to be lowered slightly. “Tah,” however, caused the rear of the tongue to rise and impeded the airstream as well as negatively affecting the tone. For trombone, the syllables utilized were “toh” for the lower register, “tu” for the middle register, and “tee” for the upper register. Deviations from these syllables were frequently heard due to the cylindrical construction of the trombone and the forward-facing bell. “Tah” was purposely avoided when playing the trombone for one primary reason: the syllable created by raising the back of the tongue in the area closest to the throat negatively affected the air consistency and speed.

The placement of the mouthpieces for both trombone and euphonium is relatively identical, although the holding position of the instrument determines the angle. The angle of the mouthpiece typically conforms to an individual's dental occlusion or the relationship of the upper to the lower teeth. A normal occlusion occurs when the upper front teeth cover the bottom teeth when the jaw is closed.<sup>19</sup> When placed on the lips, the mouthpiece will angle downward slightly.

Although with a normal occlusion, the Subject initially played the trombone with a mouthpiece placement that tended to apply excessive pressure on the top lip. This caused the mouthpiece rim and the upper teeth to restrict the vibration of the upper lip. A result also was a decrease in endurance and an increase in soreness when playing for extended periods. The Subject discovered when the instrument naturally pointed slightly downward due to the weight of the handslide, the mouthpiece angled effectively downward. With the pressure relieved from the upper lip, the embouchure was able to vibrate freely.

Consistent tone production at the initial phase of the transition was the most difficult fundamental. The habit of using the syllable "tah" on euphonium carried over when playing the trombone. This carryover impeded the development of a characteristic sound. Two daily exercises reinforced characteristic tone production on the tenor trombone. The first, a long tone exercise that began with B-flat 3 in a whole note pattern descended by a half-step. The Subject then returned to B-flat 3 and proceeded to A-flat 3

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<sup>19</sup> "Glossary of Dental Clinical and Administrative Terms," accessed March 12, 2020, <https://www.ada.org/en/publications/cdt/glossary-of-dental-clinical-and-administrative-ter#o>.

in the same manner. Then the pattern continued to descend chromatically until reaching F3. At F3 the identical pattern continued. During the initial transition, the pattern ended at E2. The Subject eventually descended the pattern into the pedal register of the trombone to a B-flat 1. This exercise allowed the Subject to listen to the tone and tuning of each pitch. Problems that included a wavering sound caused by inefficient use of air or excessive movement of the lips on the mouthpiece were addressed. Pitches in the B-flat overtone series were most effectively controlled and provided a characteristic tone that could be compared to pitches in second through seventh positions. The Subject repeated pitches if the tone was uncharacteristic.

A second exercise utilized four full length quarter notes separated by a quarter rest. Beginning with four iterations of F3, the Subject descended chromatically in the same rhythmic pattern until reaching B-flat 2. After completing the pattern through B-flat 2, the exercise began again on F3, this time ascending chromatically to B-flat 3. Similar to the long tone exercise, this quarter-note exercise allowed the Subject to hear the consistency of tone during four iterations. As well, this exercise was integral in the development of other fundamentals during the latter phases of attaining proficiency.

The Subject performed both exercises daily in practice sessions and during weekly lessons with an instructor. When practicing, the Subject and instructor assessed the exercises by listening for any inconsistencies or wavering in tone production. In weekly lessons the instructor asked what the Subject heard when playing the exercises. If the Subject noted that the sound was not characteristic, the instructor questioned as to what caused the uncharacteristic tone. Initially, the instructor identified an

uncharacteristic tone. A brief series of questions were posed by the instructor to diagnose the problem. The range of questions addressed breathing, syllable usage, placement of the back of the tongue, and others. These questions later were used to self-diagnose inconsistencies.

### Intonation

Intonation tendencies on the trombone are identical to the tuning idiosyncrasies of all brass instruments. The difference among the brass instruments is how out-of-tuneness is adjusted. On euphonium, the main tuning slide is manipulated to tune the open pitches. Manipulation of overtones not consistent with tempered pitch is achieved by manipulating the embouchure to raise or lower a given pitch. Usually tensing or relaxing the lips manipulates the air stream. Further adjustments are achieved through valve tuning slides. Pitches when adding tubing with valve combinations tend to grow sharper. Adjustments by the lips can have a negative effect on the tone when a large correction needs to occur.<sup>20</sup>

On trombone, every pitch can be tuned by adjusting the placement of the handslide without manipulating the embouchure. Trombones make use of seven slide positions for all playable pitches, excluding the F-attachment positions, but they are not consistently the same within the overtone series. Each partial of the harmonic series exhibits its own tuning idiosyncrasy. An example is the fifth partial that tends to be flat. Appropriate adjustments are required by manipulation of the handslide; each position is

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<sup>20</sup> Kleinhammer, *The Art of Trombone Playing*, 88-90.

slightly higher in the fifth partial. A concept discovered by the Subject shortly after the transition was that the hearing center of the brain, referred to commonly as the “ear,” signals the fingers to manipulate the handslide if a pitch is not in tune. Similar to a vocalist who can, without conscious thought, adjust the vocal cords, a trombonist likewise through the hearing center of the brain can manipulate the handslide with the fingers to correct out-of-tuneness.

Using both long tone and quarter-note exercises shortly after the transition, the Subject was able to develop tuning accuracy of slide positions. The quarter-note exercise facilitated effective tuning of half-steps. If the Subject were to use the syllable “tah,” as in the case of the euphonium, or force more air than required, intonation would suffer. The long tone exercise required the Subject to rely on a strong aural skills foundation to hear intervals. For effective tuning to take place, the tone needed to be characteristic. If an interval were out of tune, the adjustments required the manipulation of the fingers rather than the limitations of the movement of only the wrist or whole arm. The Subject occasionally utilized a drone in both exercises. Depending on the exercise, a drone set to either a Bb or F allowed the Subject to hear harmonic intervals while playing and became especially helpful in the long tone exercise. Both exercises focused on the use of the handslide to manipulate the pitch. Movement of the embouchure to adjust the pitch when playing the trombone was avoided.

#### Articulation

Trombone and euphonium articulation is similar with one major difference. To effectively articulate pitches on brass instruments, the tongue touches the back of the top

front teeth and moves immediately downward by the airstream used to produce the sound.<sup>21</sup> Although articulation styles vary, trombonists utilize primarily two basic articulations: legato and staccato. When executed effectively, the trombonist is able to play musical passages in a manner that sounds slurred or connected (legato). This type of articulation is characterized by long note lengths, quick yet defined pitch changes, and efficient movements of the handslide.<sup>22</sup> The airstream is steady and continuous with quick and almost imperceptible separations of the air by the tongue. Valve brass instrumentalists are able to project a continuous stream of air and manipulate the valves to perform slurred passages without articulating with the tongue. If a trombonist were to perform in this manner, the result would be a glissando, a continuously sliding pitch from one to another.<sup>23</sup> Staccato articulations utilize the same tongue motion, although the air stream is slightly different; the abdominal muscles engage briefly to propel the air preventing it from flowing out in a continuous stream.<sup>24</sup> Stopping the air with the tip of the tongue creates abrupt conclusions of pitches that may cause the air pressure in the mouth to rise. This rise in pressure may lead to subsequent pitches being overly accented.

During the early part of the transition, the Subject employed several daily exercises to develop both styles of articulation. The first exercise was a chromatically descending pattern. The Subject began to play a B-flat 3 using the rhythm of an eighth, six sixteenths, and legato quarter note pattern that repeated downward a half-step. The Subject began with slower tempos, around eighty beats per minute, and tongued legato.

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<sup>21</sup> Ibid, 63.

<sup>22</sup> Ibid, 69-71.

<sup>23</sup> Ibid, 59.

<sup>24</sup> Ibid, 66.

Initially, the Subject continued this pattern until reaching E2. The objective of this exercise was to maintain continuous airstream for the legato articulation without becoming overly labored. Upon completion of the tongued legato exercise, the Subject repeated the pattern implementing a staccato articulation. Initially, slower tempos tended to be effective due to the more frequent usage of the abdominal muscles. Due to a previous habit on euphonium of stopping pitches with the tongue, the Subject discovered that engaging the abdominal muscles for staccato articulations presented a challenge.

Another exercise was based on a diatonically descending scalar pattern that sequenced through six major keys. The pattern of two eighth notes per pitch started on the fifth scale degree and descended to the first. The final tonic was sustained for a dotted half-note duration. The exercise began in the key of E-flat Major and moved chromatically downward to the key of B-flat Major. The exercise concluded with an octave leap upward to the tonic in B-flat Major and descended through the major scale in eighth notes, concluding with a whole-note duration on the lower tonic. The Subject employed this exercise to develop both legato and staccato articulations. Similar to the previous exercise, the Subject focused on projecting a continuous airstream for the legato articulation while using the abdominal muscles to interrupt the airstream to achieve staccato. This exercise also was useful for developing accurate intonation of the first five pitches of the major scale. Occasionally, the Subject played a minor-scale version of the exercise that focused on tuning the lowered third scale degree while continuing to practice the two articulation styles.

## Handslide Technique

Trombone technique differs from other brass instruments due to the use of a handslide and the F-attachment. If trombone posture and holding position is effective, the right hand does not hold the weight of the instrument when moving the handslide. The result allows rapid movement of the right arm, shoulder, elbow, wrist, and fingers. Understanding of the general locations of the seven handslide positions is essential to effective technique. The Subject was able to locate first, third, sixth, and seventh positions accurately. The handslide in first position is almost completely closed. The brace on the trombone handslide generally is in line with the rim of the bell in third position. Seventh position requires an extended shoulder, outstretched arm and fingers, and relaxed torso. The wrist extends, the fingers uncurl, and the outer slide is cradled by the middle and ring fingers. By extending the right arm in the same manner as seventh, sixth position is achieved by bending the wrist and fingers inward similar to a gate swing. In sixth and seventh positions, the elbow is not locked. Tension and stiffness in the wrist and fingers will impair handslide mobility. Fifth position is located by extending the handslide to sixth position and bending the elbow slightly. Fourth position is located just beyond the bell in between third and fifth positions. Second position is located between first and third positions, although closer to first.

Diatonic pattern scales, or revolving scales, allow a trombonist to play every mode in all twelve keys. The Subject discovered that this revolving scale pattern was the most effective means of developing handslide technique. This pattern begins in a major key on tonic, ascends diatonically an octave and descends to the lower tonic. Upon

completing the tonic octave, the pattern repeats on the supertonic in the original key. The scale pattern then continues on the mediant and progresses diatonically to the octave. Upon reaching the octave, a descending arpeggiated pattern concluded on the tonic.

For the first few weeks during the transition, the Subject played primarily in the key of F at a slow tempo. As the Subject became more familiar with the revolving pattern scale, an additional key was introduced periodically played in half-notes to ensure accurate pitch placement before instituting the revolving scale pattern. During each practice session, the tempo of the scale was increased as the Subject became more comfortable. The Subject's objective, by the end of the first year, was to be able to play all twelve keys in the revolving scale pattern.

The Subject noted that handslide technique presented the greatest challenge. The transition from manipulating valves to moving a handslide was impeded by harsh, disjointed movements of the arm. The Subject tended to tighten the forearm muscles and shoulder when moving the handslide and stopping in a selected position. The wrist and finger tension did not allow for adjustments in intonation especially in technical exercises. Restricted mobility of the arm consequently caused the mouthpiece to move on the embouchure. Movement of the mouthpiece resulted in inaccurate pitches, an uncharacteristic tone, and faulty intonation.

The Subject employed, in addition to the diatonic pattern scales, other methods to facilitate efficient handslide movements. Practicing in front of a mirror allowed the Subject to observe many aspects of playing the tenor trombone. The Subject could observe effective breathing and efficient posture and holding position. A visual

assessment of the hand position and movement of the handslide identified other playing inconsistencies. For example, if the trombone bounced and moved the mouthpiece on the embouchure, the Subject determined that the issue was likely due to a stiff shoulder that transferred tension into the right arm and fingers. To alleviate the tension, the Subject lowered the right arm to the side of the body in a relaxed fashion and then raised the right hand to grasp the brace to ensure that the muscles were relaxed. Without producing a sound, the Subject moved the handslide as though playing the exercise and noted any tension that may have been present. Confident of efficient arm movement, the Subject repeated the exercise while still in front of the mirror. Practice in front of a mirror led to successful handslide technique.

### Rhythmic Execution

With respect to rhythmic execution, transitioning to the tenor trombone from euphonium did not prove to be as much of a challenge. The counting system on the trombone transferred well from the euphonium because it was well established and promoted accurate rhythmic reading. Timing of the inhalation in the tempo prior to the passage effected an accurate and secure pitch in rhythm. Rhythmic accuracy was reinforced by attention to timing of the inhalation process. Failing to inhale in tempo tended to affect the timing of the upcoming passage. Timing of the inhalation proved to be a significant step to playing rhythmically accurate on the trombone.

The Subject found the timing of the handslide and executing effective articulation and pitch accuracy to be one of the most challenging aspects of the transition. Movement of the handslide affected rhythmic timing in the musical context of the passage. Exercises

at slower tempos ensured synchronization of air, articulation, and handslide movement. Initially, the Subject observed that quick movements of the handslide were required to address articulation in challenging passages. Timing inconsistencies including synchronization of air, articulation, and pitch accuracy stemmed from the unfamiliarity of the handslide when compared to euphonium valves. Use of the metronome ensured consistent tempos when playing exercises, methods, and etudes as well as the synchronization of the handslide and precise articulation.

#### The Role of Method and Etude Books

During the transition, the Subject focused on understanding and applying each of the fundamentals through daily exercises, method, and etude books. Playing initially focused on fundamentals of trombone playing. To apply the fundamentals in a musical context, the Subject studied etude and other method books. Specifically, three books aided the Subject's progress of the fundamentals while also allowing for further development of musicianship: Reginald Fink's *Studies in Legato*, Fink's *Studies in Tenor Clef*, and Marco Bordogni's *Melodious Etudes*.

Reginald Fink's *Studies in Legato for Tenor Trombone* reinforced the application of the legato style of articulation. The etudes, in diatonic patterns and in familiar keys, allowed the Subject to develop a characteristic tone and manipulate the handslide to navigate intonation tendencies on the tenor trombone. The initial exercises and etudes were brief and accessible for the Subject during the early transition. The Subject utilized Fink's studies initially to improve tone, intonation, articulation, and technique. Those studies as well became a resource to practice legato articulation even as the Subject

progressed to a more advanced level. Having played these etudes on the euphonium allowed some familiarity when practicing them on the trombone although the difference in tone and legato articulation proved to be a challenge. During the early transition when an uncharacteristic tone quality was observed, the Subject paused to analyze the cause frequently due to the use of the syllable “tah” when tonguing or inefficient breathing. More practice time was required to perform effectively the more technical etudes toward the end of the book.

Fink’s *Studies in Tenor Clef* proved to be another valuable resource. Fink assembled the exercises progressively to teach trombonists to read the tenor clef in different musical styles. Fink gathered a variety of Classical, Romantic, and folk melodies. His progressive approach included rhythmic patterns and keys challenging to the trombonist. The etudes in this book surprisingly presented challenges for the Subject when compared to Fink’s *Studies in Legato*. Rhythmic and technical passages that required focus on both timing and technique. One of the pitfalls of the Subject’s practice habits, however, led to a loss of characteristic tone, intonation, and articulation and resulted in a labored handslide technique. The Subject tended to focus solely on reading the tenor clef and later unsuccessfully attempted technical etudes beyond initial capability. The Subject practiced isolating challenging passages while redirecting the focus toward characteristic tone. The Subject utilized prior musical knowledge to affect performance of passages while continuing to focus on tuning, articulation, handslide technique, rhythmic accuracy, and characteristic tone.

*Melodious Etudes for Trombone* includes three volumes of progressive vocalises by nineteenth-century composer Marco Bordogni and arranged for trombone by Johannes Rochut, former principal trombonist of the Boston Symphony Orchestra. Another edition was arranged by Alan Raph, composer and former bass trombonist in the American Symphony Orchestra. As experienced in Fink's *Studies in Legato*, the Subject had studied the first volume on euphonium. These vocalises proved to be more challenging to play on trombone. Bordogni's etudes forced the Subject to practice effective breathing in a comprehensive musical context. The extended etudes caused the Subject to experience labored breathing that resulted in an uncharacteristic tone, unclear articulation, and issues of intonation. To address the issues, the Subject sang phrases to incorporate efficient breathing while maintaining the style of the vocalise. Singing also allowed the Subject to hear out-of-tune pitches, and when playing the trombone, manipulate the handslide effectively. The Subject approached the vocalises similarly to the *Studies in Tenor Clef* where tone production was paramount. When the Subject played with a characteristic tone and breathed efficiently, tuning improved, articulation was clear, and timing was accurate. Although early etudes were not technically demanding, several vocalises included challenging scalar and arpeggiated passages. Practicing diatonic pattern scales in the key of the vocalise addressed the issues identified in the etude.

Technical passages also required a method of practice called "dotting and flagging." This approach addressed complex rhythmic passages by changing the pattern. For example, the rhythm of an eighth-note passage is changed to dotted eighth followed by a sixteenth note at the same tempo. When the Subject felt comfortable practicing the

passage with the altered rhythmic pattern, the series of eighth notes was reversed to a sixteenth followed by dotted eighth note. Following the rhythmic alteration of the pattern, the Subject played the passage as written. This approach allowed the Subject to address technical passages in a relatively short amount of time but facilitated quicker and more precise handslide movements. Approaching complex technical patterns utilizing this method produced consistent and successful musical lines that reinforced the musical confidence of the Subject.

### CHAPTER III

#### SECOND DEVELOPMENTAL PHASE: DEVELOPING CONSISTENCY OF FUNDAMENTALS ON TROMBONE

Although the first year presented many basic challenges, the next two years were devoted to developing advanced performance techniques and consistency. The issues encountered after the first year proved to be critical in establishing the performance competencies required to play at the professional level. The fundamentals, in addition to posture, holding position, and breathing were challenging during the initial transition. Dedicated practice, utilizing exercises and methods, helped to develop to skills necessary to establish consistency. A combination of revisiting fundamental concepts and pursuing challenging exercises, etudes, and methods proved to be effective in honing the necessary skills to play the trombone proficiently.

#### Posture and Holding Position

During this second phase, posture and holding position was not changed radically. Playing and practicing durations had increased without muscles aching. A seated playing posture proved to be effective in reliving preexisting lower back pains. Regarding holding position, the Subject altered the angle of the trombone. The Subject discovered that angling the trombone at a more horizontal level with the head tilted slightly back proved to be effective and facilitated rapid and accurate handslide movement. Conversely, when the Subject's head was lowered during the transition, the back of the

tongue tended to arch naturally and resulted in a slight restriction of the airflow.

Adjusting the angle of the trombone to a more horizontal position allowed the tongue to function normally and the air to flow freely.

### Inhalation and Exhalation of Air

The process of breathing efficiently improved during the second phase of the study although it continued to pose a problem for the Subject. During the warming up phase of a practice session, breathing was natural and the air flow after the inhale did not stop. Thus, the initiation of the air flow to begin the first note was unrestricted. Breathing inconsistencies, however, occurred when practicing advanced etudes or recital repertory stemmed from a lack of mental focus on unrestricted air flow. The Subject did not realize at the time that the flow of air was stopped after the inhale. Focus upon the idea that inhalation and exhalation is a continual process alleviated many of the issues with pitch accuracy, articulation, tone production, and rhythmic execution.

The instructor recommended two approaches to replace the former habit of stopping the air with the back of the tongue. The first utilized an air pattern when practicing short passages in etudes. The Subject inhaled and exhaled as though playing the trombone without producing a tone and, usually, without the instrument in hand. The Subject utilized air patterns to focus on air flow that resulted in longer and more productive practice sessions without tiring the embouchure. In addition, the Subject discontinued playing an exercise or musical passage if a functional inhalation did not occur. For example, if the Subject realized that the inhalation was stopped by the tongue in the middle of a passage, playing was stopped to rethink the process. The Subject

corrected the process of inhalation by utilizing an air pattern, as suggested earlier, or repeating the passage to incorporate a more efficient breathing process. Once comfortable, the Subject restarted the etude a few phrases prior to integrate an efficient inhalation in the passage.

### Tone

When the holding position and breathing process became more consistent, the Subject began to demonstrate marked improvement toward developing a characteristic tone. By posing questions for self-diagnosis, the Subject corrected inconsistencies in tone during practice sessions. In many situations, the Subject actively listened for instances of an uncharacteristic tone, ceased playing, identified the cause, and corrected the inconsistency. This process continued not only from the beginning, but also throughout the practice sessions.

Most of the inconsistencies that caused a less characteristic sound stemmed from raising back of the tongue as a result of stopping the air flow. Occasionally, when the Subject reverted to utilizing the syllable “tah,” the back of the tongue began to rise. Thus, the air flow needed to vibrate the lips did not occur. Reverting to the syllable “tah” generally was preceded by an inefficient breath that did not allow the tongue to form the syllables “toh,” “tu,” or “tee” necessary to play in the low, middle, and upper registers. As a result, the tone sounded thin, unfocused, and somewhat overblown. The Subject identified an uncharacteristic tone, ceased playing, and identified the inconsistency. After determining the solution, the Subject revisited the passage and listened intently to ensure

that the tone was more characteristic. When active listening occurred, the Subject consistently maintained a characteristic tone and addressed issues quickly.

### Intonation

The Subject revisited posture and holding position to ensure the potential for accurate tuning. Crucial to this process was the development and skill of hearing and adjusting the pitch simultaneously. For example, with the shoulder, arm, wrist, hand, and fingers relaxed, the pitch was adjusted instantly through hearing without physical or visual stimulation. The beginning of practice sessions was critical to this process of developing accurate tuning. When inconsistent tuning rarely occurred not as a result of handslide placement, the Subject identified habits recalled from playing the euphonium especially the use of the lips and jaw to adjust the pitch. An uncharacteristic tone did not allow accurate tuning.

Other habits learned on the euphonium were avoided. Frequently, the Subject did revert to manipulating the embouchure to adjust the tuning. The result was, as stated previously, an uncharacteristic tone that did not reflect accurate tuning. During the early part of the practice session, the Subject focused on achieving a characteristic tone and effective intonation. As the practice session progressed into advanced and challenging literature, the focus on tuning with the handslide at times was overshadowed. At that point, the Subject replayed the passage focusing on accurate handslide positioning and consistent air flow through the embouchure. Thus, confidence in handslide placement ensured pitch accuracy with a characteristic tone when playing the passage. In addition, a euphonium vibrato tended to be incorporated when playing the trombone. The Subject

occasionally attempted to correct the pitch inaccuracy with vibrato. This resulted in an unfocused tone and still a pitch out of tune. The same process as described of revisiting the passage to ensure accurate handslide placement and consistent air flow through the embouchure eliminated the need to revert to euphonium vibrato. The Subject realized that trombone vibrato is unique in its process and production and used conservatively to enhance an already characteristic tone.

Throughout the second phase of the study, the Subject performed primarily in large ensembles including wind ensemble or symphony orchestra. These ensemble rehearsal and performances challenged the Subject to play the tenor trombone with a characteristic tone, blend with the rest of the low brass section, and listen intently to intonation in the brass sections. Quick intonation adjustments were necessary due to limited rehearsal times and diverse repertoire. During the first year, adjusting intonation was especially difficult due to the inconsistencies in tone quality, tension in the right arm, and manipulating the embouchure. As the Subject became more accustomed to listening actively, in addition to a characteristic tone and relaxing the right arm, correcting intonation with the embouchure was no longer necessary.

### Articulation

For the Subject, articulation proved to be the most difficult fundamental to accomplish. Attaining consistency in articulation was a challenge. This was due partially from tongue placement habits retained from the euphonium. The Subject tended to articulate with the tip of the tongue on the hard palate rather than on the back of the upper teeth. The tongue placement tended to be more vertical and restricted the flow of air.

Horizontal tongue placement, placing the tip on the back of the upper front teeth allowed an airstream that did not restrict articulation. The more horizontal articulation allowed for more consistent airflow through the lips to achieve a more characteristic sound and desired articulation. During the transition to tenor trombone, while teaching a teaching a brass methods course, the Subject discovered that the formation of the consonant “t” occurred on the hard palate when speaking instead of at the back of the upper teeth. Using the daily exercises and concentrating on the placement of the tip of the tongue, the Subject was able to execute rhythms clearly, increase the potential speed of articulation, and produce consistently characteristic sounds.

After correcting the placement of the tip of the tongue, the consistency of the beginnings of notes improved when spacing between notes although durations of pitches needed to be addressed when performing legato. Legato articulation initially was the most difficult style of tonguing to achieve. Again, the most profound hindrance in achieving legato articulation was the Subject’s reversion to the usage of the syllable “tah.” Performing articulation exercises and other musical passages utilizing “tah” created an airstream that was not robust enough the move the tongue down after articulating. This resulted in inconsistent lengths of legato articulation. After correcting the syllable, airstream, and tone quality, the Subject played exercises or passages utilizing a glissando to focus on the airstream and efficient movements of the handslide. The Subject’s use of glissandi reinforced a characteristic tone and the concept of articulation using an uninterrupted stream of air. After repetition, the Subject reincorporated the legato articulation in the passage with success.

The Subject applied a similar approach when practicing staccato articulation. A variation of the previous approach was utilized to develop consistency in staccato articulation. Without using the tongue to articulate the spaced pitches, the abdominal muscles were engaged after every pitch to interrupt the airstream. Thus the airstream flowing through the lips produced the space between the notes. Although the pitches lacked beginning and ending clarity, the tone was consistent and unbending. When the Subject reengaged the tip of the tongue at the beginning of each pitch, the tone was clarified and concluded with a succinct, but not emphasized, ending.

#### Technical Considerations

The Subject reflected that technical facility developed sooner than the previous three fundamentals. In practice sessions, scales were the best resource for technical development every day, specifically in the diatonic scale pattern. As a challenge, the Subject increased the tempo of one scale each week with the goal of playing every key in the revolving pattern at the increased tempo after several weeks. The Subject realized, also, that revolving scales could improve articulation, both legato and staccato, as well as movement of the handslide. Performing scales in practice sessions facilitated the preparation of etudes and other repertoire. During this time, many of the etudes and solo works tended to be tonal. Because the diatonic scale pattern includes other tonal modes within the major key, the Subject incorporated this exercise to facilitate the preparation of Baroque and Classical repertoire and the heightened usage of scalar passages.

Another scalar exercise introduced to the Subject during the first year, although rarely practiced during that time, was a pattern called the “three-times scales.” “Three-

times scales” were played in 7/8 meter and consisted of an octave ascent then descent in eighth notes for three repetitions in a major key. When initially practicing this exercise, the Subject chose an andante quarter note tempo and a legato articulation which emphasized a single stream of air. The Subject began in F major, on F3, and descended keys chromatically to B-flat major. Once comfortable with the “three-times scales,” the Subject slowly increased the tempo. A metronome ensured the same tempo for each scale with even rhythmic durations throughout. Moving the handslide efficiently was required to maintain quicker tempos. For handslide manipulation, the shoulder, arm, wrist, and fingers needed to be relaxed and agile. During this exercise, the Subject moved the handslide almost constantly, briefly pausing only to move the arm in the opposite direction. A mirror was imperative for the Subject to observe and ensure the relaxation of the right arm and the unlabored motion of the handslide when practicing the “three-times scales.” Labored and tense arm movements caused excessive movement of the instrument and movement of the mouthpiece on the lips that caused fluctuations of the airstream. These fluctuations of the airstream resulted in an uncharacteristic tone and ineffective articulations.

The final aspect of technique that the Subject incorporated into daily practice sessions included flexibility exercises. The Subject struggled with this aspect of technique both on euphonium and after transitioning to tenor trombone. This stemmed from the Subject alternating between different partials focusing on the embouchure instead of manipulating the airstream by changing the oral cavity. The Subject avoided many flexibility exercises during the first year because of the tendency to manipulate the

embouchure, resulting uncharacteristic tone. As the tone quality improved and embouchure movements diminished, the Subject began to incorporate “lip slurs” at slow tempos. All the flexibility exercises were similar, although each focused on two or three different partial alternations. When practicing flexibility exercises, handslide positions one through three were typically the easiest for the Subject to execute. From the fourth through the seventh position, a characteristic tone was difficult to produce. Extending the handslide and adding tubing while playing less secure partials required attention to manipulating the oral cavity (syllables) and producing a consistent airstream. By slowing the tempo and concentrating on changing the air speed with a change of syllable instead of manipulating the embouchure, the tone quality improved. As the Subject became more comfortable with the changing air speed, the tempo increased. These exercises, however, continued to be challenging even when practicing slowly. A lack of control or both tone quality and changes in the partial created insecurity. Continuous attention and focus upon a functional technique resulted in accurate and successful execution of lip slurs.

### Rhythmic Execution

According to the Subject, rhythmic execution and timing required the least attention when compared to previous fundamentals. During previous music education, the Subject established a system of counting that reinforced confidence in rhythmic reading. Synchronization of handslide technique with articulation and rhythmic execution allowed musical passages to be accurate and musical. Ear-training books and methods from previous musical study provided material for developing sight-reading skills. The Subject not only utilized melodies in various clefs and keys, but also sight-read rhythmic

exercises in methods and studies. Rhythmic consistency was reinforced by sight-singing as well as playing the trombone. A rhythmic counting approach that included tapping the foot for consistent beat, clapping the hands for the rhythmic pattern played on the trombone, and saying aloud the actual counting system codified the Subject's rhythmic consistency. To develop facility and consistency in articulation, the Subject also sight-read rhythmic exercises on a single tone noting specifically stylistic markings.

During the first developmental phase, the Subject had identified the importance of inhalation in rhythm prior to the beginning of a phrase. Attention was placed on how the timed inhalation affected the rhythmic accuracy of a phrase. Furthermore, the Subject paid attention to avoiding the stop of the inhalation and how it affected the rhythm. When stopping the inhalation out of rhythm, the Subject realized that arching the back of the tongue inhibited the accurate release of air and timing of the first pitch. The Subject developed a more efficient process of inhaling in time and immediately exhaling air to produce an articulated pitch in rhythm. The effect of this process became more evident when the Subject rehearsed with an accompanist or in a chamber group. In both settings, the Subject noticed that whenever a stopped breath occurred, especially when cuing the beginning of a work, the initial pitches tended not to be in tempo. As breathing in time became more comfortable, the Subject was able to communicate with ensemble members more effectively when cuing entrances or establishing tempos.

#### Method, Etude Books, and Performance Anecdotes

In addition to daily exercises, the Subject incorporated into practice sessions additional etude and method books to further develop as a tenor trombonist. The Subject

continued to use Marco Bordogni's *Melodious Etudes for Tenor Trombone* that proved to develop legato articulation along with a characteristic tone. Variations in articulation styles challenged the Subject to focus on the airstream (exhalation) and the placement of the tip of the tongue. As consistency in executing the fundamentals developed, the Subject began to incorporate musical decision making and expressive playing. Technical passages in increasingly complex etudes became more approachable due to the mastery of basic trombone fundamentals.

After completing Reginald Fink's *Studies in Tenor Clef*, the Subject enlisted *Studies in Alto Clef* using a similar approach. The Subject's primary objective for utilizing this book was to read and effectively play with a characteristic tone. Other goals included achieving effective intonation, rhythmic accuracy, and articulation within the various styles of the etudes. Furthermore, confidence in reading the alto clef contributed to consistency. Later etudes included transitions between bass, tenor, and alto clefs to increase fluency in reading while maintaining the indicated style. During this developmental phase, the Subject performed works by Mozart, Brahms, and Shostakovich in ensembles that included parts written in alto clef.

The Subject pursued more advanced technical studies in Kauko Kahila's *Advanced Studies in Alto and Tenor Clefs*. The Subject was challenged not only because of the inclusion of multiple clefs, but also by Kahila's innovative compositional style and use of complex rhythms and meters. As stated in earlier approaches, preparation for performance focused on counting rhythms and singing passages without the trombone. The Subject isolated and repeated shorter musical motives, phrases, and passages to

ensure accuracy. This strategy allowed the Subject to breathe efficiently, to eliminate the use of the syllable “tah,” and produce a characteristic tone. When confronted by difficult technical passages, the Subject incorporated the “dot and flag” method in conjunction with glissandi. This approach ensured the back of the tongue was not creating inconsistencies with articulation yet allowed a relaxed and agile handslide technique.

During the second developmental phase, the Subject performed two recitals. The Subject selected musical works based upon the developmental performance level at the time. One noteworthy composition from the first recital was Launy Grøndahl’s *Concerto for Trombone and Piano*. In this composition, the Subject showcased the development of efficient breathing and acquired fundamentals. Standard in tenor trombone repertoire, this concerto challenged the Subject to maintain a characteristic tone throughout the three movements, demonstrate effective tuning and technique, execute styles of articulation, and rhythmic accuracy. After hearing the performance, the Subject noted several inconsistencies. A lack of focus and playing fatigue resulted in an uncharacteristic tone and the reemergence of the syllable “tah.” After resting during the piano interludes, the tone quality and intonation improved. Articulation and slight variations in timing and technique resulted in a few ambiguous rhythmic passages. The Subject still was able to convey the style suggested by Grøndahl.

The Subject performed *A Winter’s Night* by Kevin McKee on the second recital, about a year and a half later. The performance demonstrated consistency and control of the stated fundamentals. The most notable difference from the previous recital was the Subject’s ability to maintain a characteristic tone and adjust slight tuning inconsistencies

throughout. Inconsistencies in tone were identified immediately and addressed while playing instead of requiring a period of rest. The Subject performed the legato articulation inherent in McKee's work with clarity and preciseness, a notable improvement from the first recital.

## CHAPTER IV

### THIRD DEVELOPMENTAL PHASE: ATTAINING PROFICIENCY ON TENOR TROMBONE

During the first developmental phase of the case study, the Subject's focus centered on learning effective posture, holding position, efficient breathing, and the fundamentals of playing the trombone. The Subject's instructor addressed each aspect by listening and offering suggestions when inconsistencies occurred. During the second developmental phase, the Subject improved the active listening skills needed to become a self-sufficient practitioner, identify issues, and correct inconsistencies. The Subject began to self-diagnose playing issues and resolving them while practicing, rehearsing with an accompanist, or performing in ensembles. The goal of the second developmental phase was to create consistency. During the third developmental phase, the Subject achieved a level of playing proficiency and began to identify primarily as a tenor trombonist. The final year of the study was a milestone in the Subject's development as a trombonist and a musician in that others, conductors and colleagues, began to recognize the Subject as a tenor trombonist.

#### Posture and Holding Position

By the third developmental phase, the Subject could play for extended periods of time without experiencing back pain. During this phase, the Subject's playing responsibilities required both sitting and standing daily. The Subject noted that practicing

correct posture facilitated efficient breathing. If the Subject were to lean forward when sitting or standing, the abdominal muscles could not relax when inhaling. By lengthening the back, positioning the torso over the “sitz” bone when seated, and by allowing the abdominal muscles to manipulate the diaphragm, the Subject was able to breathe efficiently.

The Subject maintained the identical holding position of the trombone during the second developmental phase. The slightly horizontal angle alleviated pressure from the upper rim of the mouthpiece on the upper lip; this resulted in less playing fatigue and allowed for a more consistent tone from the vibration of the lips. The adjusted angle proved to affect positively the Subject’s handslide technique by removing any unneeded exertion of force when moving the handslide toward the torso. If the arm, shoulder, and wrist were relaxed, the Subject could manipulate the handslide more effectively during exercises and musical passages that required quick tempos or shorter rhythmic durations.

#### Inhalation and Exhalation of Air

During the final developmental phase, the Subject’s breathing when playing became more consistent that facilitated consistent execution of the fundamentals. To restate, during the first phase, the Subject tended to inhale a maximum amount of air, stopped the inhale causing the back of the tongue to arch, and produced an uncharacteristic sound. After addressing this issue, the Subject began to recognize when an inefficient inhalation occurred and corrected the process during the second developmental phase. During the final phase, the breathing process was efficient, the tone was characteristic, the style of articulation was accurate, and handslide technique was

fluid and effective. The cyclical and conversational form of breathing did not result in any tension or discomfort in the chest and neck. When the Subject on rare occasions inhaled ineffectively, the issue was resolved immediately. Usually, the reason for the inefficient breath stemmed from playing fatigue or mental exhaustion during longer playing durations. The Subject noted efficient breathing led to consistent characteristic tone production and encouraged complete confidence when playing.

### Tone

Consistent characteristic tone production in every performance venue was noted by the Subject to be a positive change from the initial developmental phase. Efficient breathing and utilization of syllables directly affected the consistency of tone. The Subject no longer stopped the airstream after inhalation, obstructed the release of the air with the back of the tongue, or failed to articulate with the tip of the tongue on the back of the top front teeth. In conjunction with appropriate syllables, the lips vibrated effectively to produce a characteristic tone.

The use of the syllables “toh,” “tu,” and “tee” enhanced the flow of air in the low, middle, and upper registers respectively. On rare occasions, the Subject reverted to the syllable “tah” for articulation, heard the uncharacteristic tone, and applied the appropriate syllable to refocus the tone. When articulation appeared to be predominated by the syllable “tah,” the Subject realized that, due to extended playing and mental fatigue, a rest period was required. Later the Subject was able to achieve a characteristic tone even if there were no opportunities to rest.

Being able to play the trombone with a consistent characteristic sound, the Subject experienced confidence in performance situations. During three recitals performed, the Subject demonstrated an increasingly higher level of consistency. The Subject's execution of the fundamentals of playing the trombone demonstrated achievement at an advanced level. Recordings of these recitals allowed the Subject to assess the tone quality, intonation, and other performance skills required to develop proficiency. Snippets from each recital performance were evaluated back to back to highlight the development of consistent tone. Upon reflection, the Subject noted that the final recital was presented with a consistent characteristic tenor trombone tone. The development of a consistent characteristic tone positively impacted all other trombone fundamentals.

### Intonation

During the two earlier developmental phases, intonation tended to be a challenge. As a euphonium player, during the baccalaureate degree, and even into the first master of music degree, the Subject had not experienced a controlled sense of intonation. During the third phase, the Subject utilized acute listening and effective handslide movement to avoid adjusting out-of-tune pitches with the embouchure. During practice sessions, the Subject relied on experience as a teacher of aural skills courses to identify tuning discrepancies caused by the handslide. By adjusting the fingers to move the handslide, the Subject corrected tuning discrepancies in private or ensemble situations. If the Subject were to play out-of-tune pitches in a more technical sections, the process of singing and slowing the passage was utilized. To hear pitches and harmonic intervals

more effectively, the Subject approached the passage with the “dot and flag” pattern. This approach also aided in the development of handslide technique. Following several repetitions, the Subject experienced tuning accuracy in technical passages.

When playing in chamber ensembles, the Subject was challenged by the tuning idiosyncrasies of others. Playing in a brass quintet challenged the Subject’s skill to listen to members and attempt to maintain individual tuning within the ensemble. Listening to members of the ensemble and being able to adjust tuning immediately allowed the Subject to eliminate intonation insecurities. To address ensemble tuning among the members who played with varying tuning systems, the quintet focused on listening to one another not only for intonation, but also style. During the first few rehearsals, the ensemble began by playing transcriptions of chorales by Johann Sebastian Bach. As rehearsal sessions progressed, the quintet pursued rhythmically complex and advanced harmonically structured works characteristic to Romantic, Twentieth Century, and later music. Understanding tuning idiosyncrasies of the trombone and intonation tendencies of triads and tetrachords, the Subject was able to hear the necessary adjustment and move the handslide to tune chords. The ensemble played in tune after several weeks of rehearsals, discussion among the members about individual tuning tendencies, and score study. The Subject noted that throughout a composition, the adjustment of handslide positions was required for the trombone to play an in-tune chord-tone with other members of the ensemble. Performing in the quintet with its inherent intonation challenges reinforced the Subject’s confidence in being able to play in tune.

## Articulation

The Subject addressed articulation daily at the beginning of practice sessions and warming up before rehearsals. The Subject utilized diatonic and chromatic legato exercises as presented in Chapter II along with revolving and “three-times scales” to revisit the function of the airstream when performing legato and staccato articulation. During the previous two developmental phases, the Subject noted that articulation tended to be the most challenging fundamental to develop. For this reason, the Subject dedicated more practice time toward continuing development of articulation styles daily. At that time, the Subject addressed issues of stopping the air at the end of the inhalation, the resulting rise of the back of the tongue, and placement of the tip of the tongue. When the inhalation, exhalation, and tongue placement were resolved, both legato and staccato articulation were less labored. During the third developmental phase, the Subject was able to adjust the back of the tongue creating an intense airstream that allowed the tip of the tongue to work efficiently. When the Subject became confident with the function of the airstream and the tongue in relation to articulation, an increase in the speed of articulation resulted as did clarity of rhythm. The more consistent airstream also allowed the Subject to develop effective multiple-tonguing skills.

Although legato articulation was challenging, the Subject became comfortable with both legato and staccato styles. This was especially true in solo performances as demonstrated in two recitals. The Subject arranged Gustav Mahler’s *Lieder eines fahrenden Gesellen* and five short art songs by Claude Debussy. The Subject performed these works, not to emulate the sound of the human voice, but rather emphasize the

legato articulation while maintaining a vocal style. To assist the preparation of the articulation styles, the Subject visualized the text as if performing from the vocal score. Developing musical phrases based upon the text that allowed the Subject to perform in a sustained legato style along with periodic staccato articulation. Style markings in several songs required a light and spaced articulation. The Subject noted that ending the tone with the tongue resulted in a sound that detracted from the musical line. In this style, the tongue clarified the beginning of the pitch and the abdominal muscles controlled the airflow to achieve a slight taper at the end of the tone. The Subject's comfort with the execution of these articulation styles translated to other solo and ensemble repertoire.

#### Technical Considerations

Technique during the final developmental phase showcased how the Subject had adjusted to the tenor trombone. The Subject addressed flexibility between partials every day in practice sessions. Utilizing flexibility exercises as discussed in Chapter III, and those improvised by the Subject, an unobstructed airstream clarified transitions between partials. When the Subject practiced handslide technique, the right arm, shoulder, wrist, and fingers were noticeably relaxed and agile. Efficient movements did not cause the trombone to move erratically; therefore, the mouthpiece did not move on the lips nor negatively affected the tone. The Subject practiced diatonic pattern scales and "three-times scales" to develop advanced handslide technique. The Subject also integrated the chromatic scale in practice sessions beginning with E2 and ascending to B-flat 4 using a triplet rhythm at an andante tempo with a legato articulation. When playing the chromatic

scale, the Subject was able to accomplish rapid and extended handslide movements (such as moving from first to fifth position) effectively.

Prior to ensemble rehearsals, the Subject employed a brief warm-up exercise to achieve an effective airstream utilizing legato articulation in a chromatic pattern; the Subject's instructor referred to this exercise as the "second warm-up." The rhythm of this exercise incorporated three beats of sixteenth notes followed a quarter note on beat four. Beginning on B-flat 3, the pattern descended chromatically to A and A-flat and then ascended chromatically to the B-flat 3 three times. The pattern was repeated beginning on next lowest partial and then the partial below. The entire exercise was repeated a half-step lower progressively and concluding with the series ending on G-flat 3. The purpose of this exercise was to ensure a fluid handslide movement while maintaining a relaxed right arm, shoulder, wrist, and fingers. Care was taken to produce a single airstream and avoid unnecessary pauses of the handslide movement.

In performances, the Subject's usage of a steady airstream facilitated technique. The Subject performed Eugene Bozza's *Ballade pour Trombone et Piano*. The conclusion of the work showcased the Subject's progress in development of handslide technique and flexibility. In Bozza's composition, extended scalar passages required a variety of articulation styles along with multiple tonguing in passages that included less idiomatic handslide motions. Effort to avoid instances of inefficient breathing, uncharacteristic tone quality, unclear articulation, and stopping after a playing mistake contributed to a polished musical performance.

### Rhythmic Execution

In the third developmental phase, accurate timing and rhythmic precision was addressed through singing and counting musical passages during practice-session breaks. Using an efficient airstream, the timing and articulation contributed to rhythmic clarity. The Subject utilized the metronome when playing the chromatic legato exercise every day to ensure a consistent airstream, legato articulation, and sixteenth-note figures. The “second warm-up” also showcased the Subject’s ability to execute rhythmic passages accurately with clarity that translated effectively to solo ensemble repertoire.

During all practice sessions, the Subject utilized a metronome when practicing daily exercises and preparing technical etudes, recital pieces, and ensemble repertoire to improve the internal pulse. Performances in large ensembles and the brass quintet showcased Subject’s improved internal pulse. To guarantee precise placement of articulation and rhythmic accuracy in both large ensemble and chamber groups, the Subject focused on the subdivision of the pulse more frequently than occurred on the euphonium. In large ensembles, the low brass section typically sat farthest away from the conductor. For the section to sound in time with the rest of the ensemble, the Subject and the low brass sections played slightly ahead of the pulse the conductor established. When preparing music for this setting, tone and tuning was integral to practicing the timing of entrances and accuracy of rhythms.

In the brass quintet, each member was responsible for establishing an internal pulse instead of relying solely on the other four members of the chamber ensemble. To ensure the cohesiveness of the ensemble each member was required to listen critically.

The members of the ensemble were responsible for establishing rhythmic accuracy, timing, and tempo when preparing repertoire and while rehearsing. Members, likewise, were responsible to adjust the tempo individually according to the member initiating a change.

### Establishing Professional Proficiency

Through the three developmental phases, the Subject maintained an objective to perform at an advanced level of proficiency. This self-established goal continued to be question in the mind of the Subject throughout all three developmental phases. After dedicating countless hours of arduous practice, attention to honing trombone playing fundamentals, and maintaining a rigorous performance schedule, the Subject personally still did not internalize the confidence required to perform at a professional level. Mental and social awareness likely contributed to the perceived lack of accomplishment. The Subject, however, upon reflection and assessment of performance progress, accepted a renewed sense of confidence that the intended goal had been achieved. The instructor coached the Subject on maintaining mental and physical wellbeing crucial to gaining self-confidence in attaining proficiency.

The Subject also gained self-confidence by teaching college-level students privately. The Subject taught learned posture, holding position, breathing process, and musical fundamentals to undergraduate trombonists. Teaching the identical concepts accomplished by the Subject ultimately led the students to set higher expectations in their own playing ability. As an example, when the Subject's students performed exercises or etudes during lessons and made mistakes, they apologized and became overly

self-critical. Inevitably, this led to additional mistakes. In these situations, the Subject encouraged the students through a nurturing approach to correct mistakes. The Subject avoided scolding the student for playing errors, and that led to a more accurate performance. Through observation of how the students reacted to positive reinforcement and how it affected their perception of a performance, the Subject experienced a renewed level of performance proficiency and confidence as a trombonist.

CHAPTER V  
SUMMARY, CONCLUSIONS, AND SUGGESTIONS  
FOR FURTHER STUDY

Summary

Most musicians determine a primary instrument during adolescence. Later, students may attend an institution of higher education to develop skills on a primary instrument. Whereas musicians may decide to learn a secondary instrument, most will not attain a similar proficiency as the primary. Rarely does a student transition to an instrument different from the primary. One student, the Subject, made the decision to pursue graduate studies on tenor trombone after completing a master of music degree in performance on euphonium. Although both instruments are similar in length and tonal range, the construction of the two instruments are dissimilar and demand different performance techniques.

The purpose of this case study was to document the Subject's progression from euphonium to tenor trombone as a primary instrument during the course of four years. The Subject's objective was to achieve a professional level of proficiency on tenor trombone equal to the level of playing attained on euphonium. To become proficient, The Subject focused on five music fundamentals: tone, intonation, articulation, technique and rhythmic execution. Achieving proficiency by addressing five fundamental concepts, along with a better understanding of posture, holding position, and breathing,

observations documented the progression of the Subject's progress through three developmental phases.

During the first developmental phase, the Subject focused on posture, holding position, effective breathing, as well as to apply the concepts of tone, intonation, articulation, technique, and rhythmic execution. The Subject devoted practice and instructional time to ensure that extraneous habits characteristic to euphonium performance were not detrimental to the development of effective trombone technique. Standard technical exercises, method books, and etudes enabled the Subject to develop a characteristic tone, varied articulations, tuning, style, and musical interpretation. and the fundamentals of playing the trombone.

The second developmental phase focused on developing consistency in performance. The Subject's ability to produce a characteristic tone became more consistent, although inefficient breathing and ineffective use of syllables detracted from the sound. Articulation was the most difficult fundamental to achieve. Attention in practice to self-diagnosis of performance inconsistencies contributed to improvement. Advance technical exercises, methods books, and etudes facilitated progress towards graduate performance level expectations. Anecdotes of specific situations in practice and performance showcased the Subject's progress.

The Subject's performance proficiency concluded the third developmental phase. Mastery of music fundamentals, as related to the trombone, confirmed the Subject's identity as a tenor trombonist. Performance in complex musical situation reaffirmed the subject's progress. Performances included four solo recitals. Chamber music and large

ensemble concerts included brass quintet, symphony orchestra, wind ensemble, opera orchestra, and miscellaneous professional venues.

### Conclusions

Musical experience achieved as a professional euphonium player translates well to trombone performance. The problem with applying prior musical experience from the euphonium to the trombone is limited initially by an inability to execute basic fundamentals. At the outset of this study, the Subject did not expect the amount of time, the length of time, and the focus and intensity required during the transition. Regardless of the challenges experienced and addressed, the study reinforced that, with diligence and persistence, the transition from euphonium to trombone is possible. Not necessarily addressed in this study, the consideration of age of the performer could provide entirely different results. A constant challenge during the transition continued to be reverting to euphonium idiosyncrasies when playing the trombone. A factor during the study was the Subject's self-concept as a trombonist; colleagues continued to view the Subject during the initial phases of the project as a euphoniumist. Support from instructors and collaborative pianists as well as focus toward the purpose of the project allowed the Subject to be considered a professional trombonist. As stated in the purpose of the study, this transition should not be considered to be a model for replication.

### Suggestions for Further Study

Although this case study detailed the transition from euphonium to the tenor trombone, similar studies could document other professional musicians who may wish to

become proficient on another instrument. Another consideration in the documentation of a like study would be to record progress periodically throughout the transition. A study that examines and details the physiological and technical differences as well as the similarities between the trombone and the euphonium could prove to be valuable. Various development considerations in terms of age might prove to be beneficial when considering a like transition.

Throughout the last half of the Twentieth century, the euphonium has been a respected band and solo instrument. Noteworthy euphonium soloists, teachers, and members of the military service have established careers in professional performance and teaching. Well established euphoniumists, however, may find transitioning to the trombone a more daunting and long-term task than might be expected. This case study is a resource for euphoniumists who may wish to perform as a tenor trombonist. Although common thought is that a low brass player can play equally well on the trombone or the euphonium, this study reveals that the transition is challenging and requires determination and persistence.

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