

A RESOURCE AND INFORMATION GUIDE FOR THE ASPIRING
DOUBLER OF ORCHESTRAL TENOR AND BASS TROMBONES

by

Kiel Berton Lauer

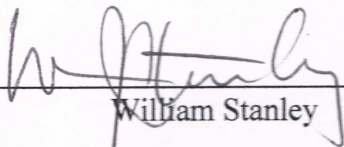
B.M., University of Illinois, 2008

M.M., Michigan State University, 2010

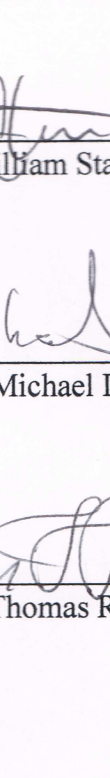
A dissertation submitted to the
Faculty of the Graduate School of the
University of Colorado in partial fulfillment
of the requirement for the degree of
Doctor of Musical Arts
College of Music

2019

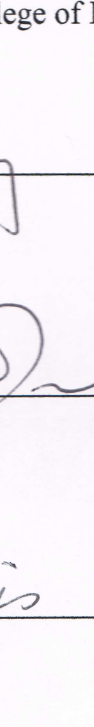
This thesis entitled:
A Resource and Information Guide for the Aspiring Doubler of Orchestral Tenor and Bass
Trombones
written by Kiel Berton Lauer
has been approved for the College of Music



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Date 12/18/19

The final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above-mentioned discipline.

IRB protocol # 14-0788

Lauer, Kiel Berton (DMA, Music)

A Resource and Information Guide for the Aspiring Doubler of Orchestral Tenor and Bass
Trombones

Dissertation directed by Associate Professor William Stanley

A survey of professional musicians who double on both tenor and bass trombone leads to a guide for selecting helpful equipment as well as selected etudes, solos, and orchestral excerpts that can aid the development of the orchestral trombonist wishing to begin doubling between both tenor and bass trombone.....

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CHAPTER I

INTRODUCTION

Inspiration

One of my favorite early memories of the trombone in use was specifically with the bass trombone. My uncle was playing in a summer concert band, and he was playing a popular solo for bass trombone, *Variations on Barnacle Bill the Sailor*, with the band accompanying behind him. His command of the bass trombone's range and flexibility through the increasingly virtuosic nature of the solo was awe-inspiring to me. On other concerts and a couple of recitals, I eventually got to watch and listen to him play on four different sizes of trombone: alto, small-bore tenor, large-bore tenor, and the bass trombone. The two large instruments were especially amazing to me, because in addition to the slide, the large-bore tenor was equipped with a valve for the left hand, and the bass had two valves. At the time, I had not considered the practice and control necessary to play all of those instruments so well, but he convinced me that it was possible to double on the different sizes of trombone successfully.

I learned and worked to develop the basic fundamentals (such as air usage, tone quality, slide technique, embouchure, buzzing, and flexibility) on my original small-bore tenor. I did well for a young student, but the challenge became much greater as I got my first large-bore tenor. The sheer size and weight difference of the instrument and its mouthpiece made it much tougher for me to accomplish what I was already achieving on my small-bore tenor. I noticed how much easier it was to play the smaller instrument after spending time on my large-bore.

When I got my first bass trombone in high school, the same issues came into play, but it also helped me understand the comparative ease of play I developed for the large-bore tenor. The bass trombone ultimately became my primary instrument, but I never wanted to stop playing tenor, so I began my own attempts to double at a young age.

Since leaving high school, I have changed instruments and mouthpieces a number of times, and I now have a better understanding of how to move comfortably between tenor and bass trombone, which makes my doubling experience easier. This long personal process has led me to the tenor and bass trombones I currently use as well as a basic practice concept to effectively use both tenor and bass. My process has made it possible for me to play both tenor and bass trombone in a number of regional-level orchestras and jazz bands.

What interests me now is what others who double between tenor and bass trombone do in order to succeed. I want to discover trends in equipment, practice, and performance technique that make it a more viable option for those trombonists who, like me, wish to branch out beyond a single instrument, both for personal and for professional reasons.

Current Relevant Material

Method books, etudes, and other studies are available to help trombonists develop either tenor or bass trombone, but no such resource exists that covers the full range of factors that comprise doubling from a collective perspective of professional trombonists. Most studies give the perspective of one professional or address only a singular aspect from the viewpoints of only a handful of musicians. The following materials are relevant, however, because they are written by professional trombonists who specifically refer to tenor and bass trombone doubling. While

there are materials not listed that may address doubling, they do not directly address application to tenor and bass trombone and are not being considered here.

Some printed resources provide a few helpful, yet limited performance concepts for doubling. Eliezer Aharoni's book, *The Non-Classic Bass Trombone (or Tuba)*, has just under three pages dedicated to doubling.¹ He makes general comments about doubling in half of one page, and other than a brief reference to tenor trombone learning to play bass trombone, much of the section instead refers to considerations for bass trombonists doubling on either tuba or contrabass trombone. Aharoni also makes basic equipment suggestions for issues that a tenor trombonist or other low brass musician could encounter learning to double bass trombone on half of one page.² In a three-page narrative from the book, *Top Brass*, professional doubler Tim Newman discusses how he aids his doubling by playing familiar lyrical tunes on both instruments.³ This narrative is abbreviated in *Selected Trombone Masterclasses*.⁴ The same collection also includes one other two-page article by Alan Kaplan, a Los Angeles studio musician discussing versatility in doubling and finding commonalities.⁵ One more article by Audrey Morrison, jazz trombonist and former principal of the Elgin (Illinois) Symphony, does not refer to bass trombone specifically, but does explain differences in air usage between small-bore and large-bore tenor trombone.⁶ John Griffiths, former tubist of Regina Symphony in Saskatchewan, wrote *The Low Brass Guide*, which discusses overall fundamentals to produce

¹ *The Non-Classic Bass Trombone (or Tuba)* (Jerusalem: NogA Music, 2008), 48-50.

² *Ibid*, 50.

³ Tim Newman, "Practicing the Tenor and Bass Trombone," In *Top Brass*, ed. Bob Bernotas (New York: Bopstism Music Publications, 2002), 265–268.

⁴ Tim Newman, "Practicing doubling on the tenor and bass," In *Selected Trombone Masterclasses*, ed. unknown (Malibu, CA: Windplayer Publications, 2001), 26-27.

⁵ Alan Kaplan, "Doubling, versatility, and practice routines," In *Selected Trombone Masterclasses*, ed. unknown (Malibu, CA: Windplayer Publications, 2001), 30-31.

⁶ Audrey Morrison, "Switching between jazz and classical," In *Selected Trombone Masterclasses*, ed. unknown (Malibu, CA: Windplayer Publications, 2001), 22-23.

good tone and technique that could be applied to any low brass instrument.⁷ One page includes ideas specifically geared to help low brass doublers.⁸

Scholarly online resources for doubling are scarce. Dr. Tom Gibson, currently Artist-in-Residence at Kennesaw State University in Georgia and also an active freelancer, had a podcast video archived online that discusses airflow, specifically using the line “The lower you go, the slower you blow,” as well as suggesting that an aspiring doubler should play familiar tunes to help acclimate quickly to whichever trombone is being used.⁹ This podcast, however, is no longer accessible at this time. Tim Smith, who currently plays with the Buffalo Philharmonic, had 10 professional doublers explain their mouthpiece choices.¹⁰ Dr. Micah Everett, professor at the University of Mississippi, maintains a blog called *The Reforming Trombonist*, which has an entry that expresses his opinions of how to deal with doubling in one’s daily routine.¹¹

Dr. Everett’s 2014 publication, *The Low Brass Player’s Guide to Doubling*, covers various doubling pairs among trombone, tuba, euphonium, and other related instruments a low brass musician may be expected to play.¹² Two chapters specifically convey his perspectives on tenor and bass doubling (tenor doubling on bass, and vice versa).¹³ In these chapters, he presents his own perspective on choosing an instrument as well as some performance and sound concept issues that may occur when beginning the other instrument. He also lists a few selected etudes and solos available for each instrument. The opening chapter claims a need to establish routines

⁷ John Griffiths, *The Low Brass Guide* (Hackensack, NJ: Jerona Music Corporation, 1980).

⁸ Ibid, 28.

⁹ Tom Gibson, “Episode 24: Doubling on Bass Trombone,” *TromboneLessons.com Video Podcast*. Posted March 24, 2007 (9:11 a.m.), <http://tbonegib.podbean.com/2007/03/24/episode-24-doubling-on-bass-trombone>.

¹⁰ Tim Smith, “Survey on tenor/bass trombone doubling,” *Tim Smith – trombonist* (blog). Posted November 1, 2014, <https://timsmithtrombone.com/2014/11/01/survey-on-tenorbass-trombone-doubling/>.

¹¹ Micah Everett, “Approaching Doubling in the Daily Routine,” *The Reforming Trombonist* (blog). Posted November 16, 2012, <http://thereformingtrombonist.wordpress.com/2012/11/16/approaching-doubling-in-the-daily-routine>.

¹² Micah Everett, *The Low Brass Player’s Guide to Doubling* (Flagstaff, AZ: Mountain Peak Music, 2014).

¹³ Ibid, 13-32.

that allow a doubler to practice the secondary instruments regularly, basically saying that scales and fundamentals need to be included for all instruments.¹⁴

The most extensive printed resource on this topic is a doctoral dissertation from 2002 by Lawrence John Pearce. *The Art of Tenor/Bass Trombone Doubling: An Examination of the Performance Practices of Three Selected Trombonists* is the most valuable resource to date, because it delves into warm-up, breathing, equipment, embouchure, and intonation practices.¹⁵ Pearce included transcripts from his direct interviews with three individuals: Charlie Vernon, Dr. Donald Hildebrandt, and Brian Rogers.¹⁶ The discoveries discussed in this dissertation lay groundwork for designing a larger survey-style study of a greater number of bass and tenor trombone doublers.

While these materials provide some insight into individual performance techniques, they are almost completely without material regarding equipment selection. The same short article by Tim Newman,¹⁷ and another by Alan Kaplan,¹⁸ shed a little light on what equipment they use only in a written aside. Gibson made one brief comment about mouthpiece selection in his archived online podcast.¹⁹ Everett has a second blog entry that deals specifically with mouthpiece considerations when doubling.²⁰ Lawrence Pearce's dissertation mentions the

¹⁴ Ibid, 5-12.

¹⁵ Lawrence Pearce, *The Art of Tenor/Bass Trombone Doubling: An Examination of the Performance Philosophies and Practices of Three Selected Trombonists*. DMA diss. (University of Oklahoma, 2002).

¹⁶ Ibid, 51-148.

¹⁷ Tim Newman, "Practicing doubling on the tenor and bass," In *Selected Trombone Masterclasses*, ed. unknown (Malibu, CA: Windplayer Publications, 2001), 26.

¹⁸ Alan Kaplan, "Doubling, versatility, and practice routines," In *Selected Trombone Masterclasses*, ed. unknown (Malibu, CA: Windplayer Publications, 2001), 30.

¹⁹ Tom Gibson, "Episode 24: Doubling on Bass Trombone," *TromboneLessons.com Video Podcast*. Posted March 24, 2007 (9:11 a.m.), <http://tbonegib.podbean.com/2007/03/24/episode-24-doubling-on-bass-trombone>.

²⁰ Micah Everett, "Mouthpieces: An Important Consideration for Doublers," *The Reforming Trombonist* (blog). Posted February 1, 2013, <http://thereformingtrombonist.wordpress.com/2013/02/01/mouthpieces-an-important-consideration-for-doublers>.

instruments and mouthpieces that Vernon, Hildebrandt, and Rogers used;²¹ however, a larger number of professionals who double would give greater insight into instrument selection.

Former Boston Symphony bass trombonist Doug Yeo indicates that while some musicians select mouthpieces of different sizes to facilitate their doubling needs, he personally advises to maintain the same rim size for any instrument he doubles.²² These isolated, sometimes limited suggestions indicate that a larger collection of data would be more useful.

Explanation of Purpose and Survey

In order to effectively double tenor and bass trombone, a musician needs to be able to achieve the best tone quality possible on each instrument. In addition to executing professional-grade performance, one should learn how to switch from one trombone to the other with the greatest ease. A doubler needs to choose the most suitable equipment, which includes finding the right tenor trombone and bass trombone for the needs at hand. In order to find the right equipment, there has to be some understanding of the concepts regarding the necessary tone quality of each instrument, so that the musician is able to shift from one instrument to the other easily while still maintaining each instrument's natural quality of sound. Other fundamental factors upon finding an appropriate double involve the use of air and embouchure, and how similar these practices may or may not be with the instruments chosen for doubling.

I posted a Qualtrics survey in forums that targeted professional tenor and bass trombonist doublers to complete my study. There included forums on Facebook and the International Trombone Association related to trombone performance and trombone pedagogy. The survey

²¹ Lawrence Pearce, *The Art of Tenor/Bass Trombone Doubling: An Examination of the Performance Philosophies and Practices of Three Selected Trombonists*. DMA diss. (University of Oklahoma, 2002), 4-8.

²² Doug Yeo, "Frequently Asked Questions: Doubling," *Douglas Yeo Trombone Web Site*, http://www.yeodoug.com/resources/faq/faq_text/doubling.html.

asked first for consent, then proceeded to ask questions regarding each survey participant's professional background, equipment choices and descriptions, concepts of air usage, embouchure control, sound concepts, specific warmups or practice routines, performance choices with regard to doubling, useful resources that aid doubling, mental strategies, and any other helpful tips they could provide. The responses from the survey inform the later discussion on doubling. The survey itself is appended.

Notation

Figure 1 indicates how pitches will be described. All C pitches begin each octave.

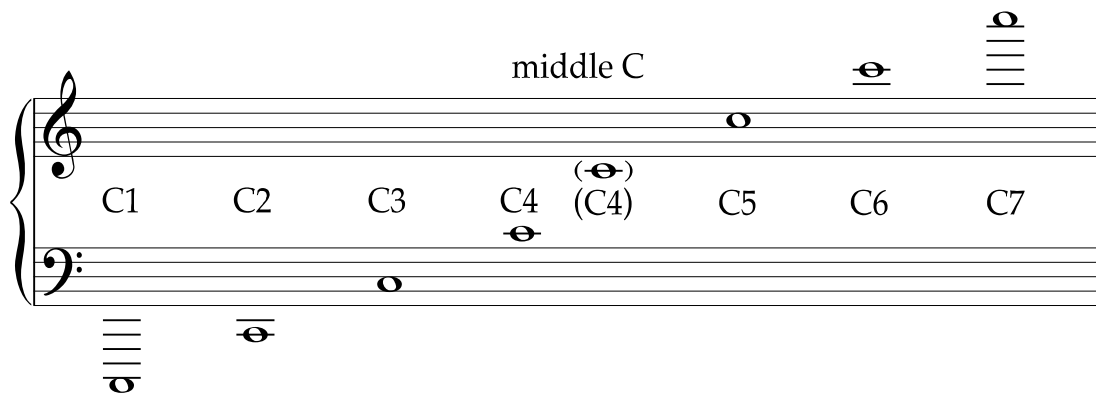


Figure 1. Scientific Pitch Notation

CHAPTER II

CHOOSING EQUIPMENT

Basic Mouthpiece Construction

Many brass players continue the impossible search for the mouthpiece that is best suited for all situations, and the numerous brands available make many options possible. For someone who wants to double, it is helpful to understand how the different components of a mouthpiece function in order to narrow down the search for the most suitable mouthpiece. The manual by Yamaha called *Mouthpieces for Brass & Woodwind Instruments* brings sufficiently elaborate descriptions to each part of a mouthpiece's structure, and what can happen to the sound (and the player) as the different components change.²³ The following parameters come from the Yamaha manual unless otherwise indicated: Inner Rim Diameter, Rim Contour, Rim Thickness, Rim Bite, Cup Silhouette, Shoulder, Throat Diameter, Backbore, Shank, Weight, and Material. Other mouthpiece manuals, such as Schilke's *Mouthpiece for Brass*²⁴ and Bach's *Mouthpiece Manual*²⁵ also provide extra insight on the rim, cup, backbore, and throat.

²³ *Mouthpieces for Brass & Woodwind Instruments* (Japan: Yamaha, 2012), http://download.yamaha.com/api/asset/file/?language=en&site=ae.yamaha.com&asset_id=55190, 6-9

²⁴ *Mouthpieces for Brass* (Melrose Park, IL: Schilke Music Products, 2016), <https://www.schilkemusic.com/wp-content/uploads/2015/12/2016-MPC-Catalog-LR.pdf>, 5-7.

²⁵ *Mouthpiece Manual* (Elkhart, IN: Conn-Selmer, Rev. 2007), https://www.bachbrass.com/application/files/4614/8521/7763/AV2BA901_Original_1889_web.pdf, 3-11.

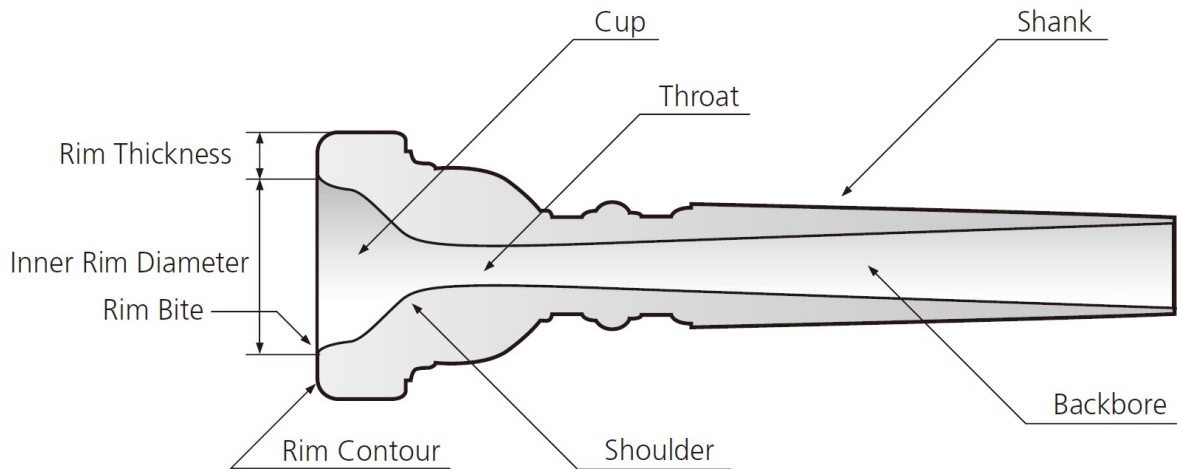


Figure 2. Components of a mouthpiece for a brass instrument, from Yamaha’s Manual, page six.

The Inner Rim Diameter is the width of the inside of the mouthpiece rim at its widest point. Typically, smaller rim diameters will help high-range playing, and larger rim diameters will be good for low-range playing. Ideally, the rim diameter will be of a width that gives the player’s lips room to vibrate the widest range possible with the greatest ease for the chosen instrument.

Rim Contour refers to the roundness or flatness of rim top. Rounder rims offer more flexibility, but will likely hinder endurance. Flatter rims keep the lips more stable against the mouthpiece, but decrease flexibility.

The amount of mouthpiece rim that makes contact with the embouchure is the Rim Thickness. Thick rims will give stable tone and endurance, but will be less tonally versatile. A thin rim provides great variability in tone, but can cause more fatigue due to the control needed.

Rim Bite is the roundness or sharpness the rim’s inside edge. Sharper bites increase clarity and stability, but will reduce the ease of smoothness between notes and possibly hurt a

player's endurance. Rounded bites will make smoothness easier, but take more work to establish clarity of articulation and note definition.

Yamaha uses the term "Cup Silhouette" to describe both the cup depth and cup shape of a brass mouthpiece. Cups with shallow depths encourage a naturally brighter tone and add resistance that helps facility in the high range, but they can make it more difficult to play with greater volume. The high resistance from shallow cups may require more muscle control in the embouchure and focused air support, and the player will have less ease playing low notes with a fuller tone. Deep cups allow for thick and full low notes with greater ease and power, but the lack of resistance can require more air support to maintain control of the tone. Deep cups can also make the upper range require more effort, and could possibly cause the player to have a strained tone on high notes.

Along with cup depth is cup shape. The two basic shapes are a bowl (a U-shaped or C-shaped cup) and a funnel (a V-shaped cup). A cup that is more bowl-shaped will add a brighter sound along with more ease in the high register. A funnel-shaped cup will emphasize the low range and darker tones. A mouthpiece does not need to employ these two shapes exclusively. They can come in some balance of the two.

The Shoulder of a mouthpiece is the bend where the cup segues to the mouthpiece's throat. Its shape can be dependent on the cup shape as well. Rounder shoulders (often coming from V-cups) reduce resistance and increase darker tone quality that requires more effort for clarity, where sharper shoulders (likely from U-cups) increase resistance and brightness, giving greater natural clarity.

Throat Diameter is the width at the narrowest point of the mouthpiece. The throat is the segue between the cup and the backbore. The narrower throat adds resistance and brilliance of

tone as well as improving high-range playing, but it becomes more challenging to play with more volume. The wider throat removes resistance and encourages dark, low-range playing and allows for high-volume playing, but it comes at a much higher cost of air from the musician.

The Backbore follows through the throat to the end of the shank. The flare, or growth of the backbore from the throat to the end of the shank, can also be narrow or wide, which affects the tone similarly to the throat itself. A narrow backbore continues to emphasize high resistance, brilliance of tone, and easier high-range playing, and a wider backbore continues to promote the opposite: low resistance, darker tones and better low-range playing.

The Shank connects directly to the trombone, and the primary factor regarding the shank is that it should fit properly to the trombone. Trombone mouthpieces generally come with two sizes of shank (small and large), and fit most modern trombones. Small shank mouthpieces typically fit in alto trombones, small-bore tenors, and medium-bore tenors. Large shank mouthpieces usually fit in large-bore tenors, bass trombones, and some contrabass trombones.

The weight of a mouthpiece can affect the overall tone quality of the trombone. Heavier mouthpieces will emphasize a darker and more stable tone when playing loudly and powerfully. Lighter mouthpieces are more nimble and give better response, but will get brighter more quickly as volume is applied.

As far as the primary material used for mouthpieces, the most common is brass, and it generally comes finished with silver or gold plating. The raw brass under the plating is the standard for the basic tone given by most brass instruments. Silver plating is standard and durable. Gold plating can feel smoother for better lip and air control.

Unlike plated brass mouthpieces, mouthpieces can be made with other materials. One such material is sterling silver, which roughly matches the weight of a standard-plated brass

mouthpiece. Another is titanium, which weighs about one-third of the standard weight.²⁶

Plating these mouthpieces is unnecessary, and the materials can be shaped similarly to any standard mouthpiece.

Ultimately, there are many brands and options, as well as custom-made opportunities for mouthpieces. This elaboration on mouthpiece construction should help provide an understanding of what factors may cause favor or disfavor with the sound obtained from particular mouthpieces. The goal is for the mouthpiece to fit the player's facial structure and personal ability, and it should also balance the particular trombone chosen.

Finding Desirable and Complementary Tenor and Bass Mouthpieces

In the survey of tenor and bass trombone doublers, about 90% of the survey respondents used different rim sizes when doubling between tenor and bass trombone. Only a few used the exact same mouthpiece on both their tenor and bass trombones. Some professionals have advocated using customized mouthpieces, such that the rim size is the same across all mouthpieces, but the cup depths are adjusted to suit the needs of the horn and sonic desires of the player. A few even felt it necessary to make the most difference possible by getting a very small tenor mouthpiece and a very large bass mouthpiece. In most cases, however, the size of the one rim was directly proportional to the size of the other rim. That means that a large tenor trombone rim was most likely paired with a large bass trombone rim. Likewise, a small tenor rim would be paired with a small bass rim. The cup depths were more varied, insinuating that the cup choice is more dependent on the type of trombone used and the sonic needs of the musician.

²⁶ "Why Stainless Steel Instrument Mouthpieces?" *Giddings Mouthpieces*, <https://www.gwmouthpieces.com/pages/why-steel>.

Given that the proportional sizing of rims between tenor and bass trombones is the exceedingly popular option, the goal should be to find proportional rim sizes suitable to the player's embouchure. The following comparisons, based on the measurements for Bach mouthpieces, suggest a starting point for finding a balance between tenor and bass trombone mouthpiece rims diameters:

Bach 5G (25.50mm) = Bach 1.5G (27.00mm)

Bach 4G (26.00mm) = Bach 1.25G (27.50mm)

Bach 3G (26.26mm) = Bach 1G (28.00mm)

Basic Trombone Construction

The trombone is the only brass instrument that uses a U-shaped handslide as its primary method of selecting and tuning all pitches in its range, where a mouthpiece connects to one side and the bell connects to the other.

Commonly, the trombones used today are:

Alto trombone, with the fundamental pitch of E-flat-2

Tenor trombone, with the fundamental pitch of B-flat-1

Bass trombone, also with the fundamental pitch of B-flat-1

Less common voices of the trombone include:

Soprano trombones with the fundamental pitch of B-flat-2

Contrabass trombone, with the fundamental pitch of either F1 or B-flat-0

Unlike other instrument families, the tenor and bass trombones are the same length, approximately nine feet. A larger bore, larger bell diameter and other physical features create the characteristic sound of the bass trombone. Because the tenor and bass trombones are

identical in length, all of the pitches available occur in the same slide positions. This unique similarity allows a greater ease of doubling between tenor and bass trombone. This section will elaborate more specifically on the tenor and bass trombones and the equipment options available to achieve the desired tone quality of each.

Alloys

Across all components of the trombone, the type and balance of alloys used can affect the sound desired. Brass, the most common alloy used, is the combination of copper and zinc. Different proportions of these metals create various qualities of brass, and any component of the trombone – leadpipe, handslide, crook, valve tubing, tuning slide, and bell – could have different alloys that give the resultant trombone its default tone quality. These alloys will show a visual difference in color by their balance of copper and zinc.

Yellow brass often uses a balance of about 70% copper against 30% zinc. The resulting sound is naturally firmer and brighter with easier projection. Red brass generally consists of about 90% copper with 10% zinc. The sound has greater tone flexibility with rounder softs and brighter louds, though projection could take more effort. Gold brass usually has a composition of 85% copper and 15% zinc, placing it between the other two. Gold brass attempts to maintain tonal flexibility without losing projection ability. Different companies may vary their copper-to-zinc balances slightly. When referring to components by their alloy, it can be assumed that “yellow,” “gold,” and “red,” refer to yellow brass, gold brass, and red brass, respectively.

Two other less-common possibilities are nickel and sterling silver. Nickel generally helps response and articulation, adding brightness to the tone. Sterling Silver is dense, keeping the tone much darker, even at louder volume.

Leadpipes

In order to connect the mouthpiece to the trombone slide, the shank must fit into the leadpipe, which helps control the sound's growth from the mouthpiece through the slide itself. Leadpipes vary in dimensions and alloys, changing the way the sound from the mouthpiece is sent to the full width of the slide, which changes the quality of the resulting sound.

The leadpipe functions as a venturi, which is a tube that constricts to a smaller width in the middle and expands again to the width of the inner slide. The venturi is responsible for how much resistance the airflow will encounter, and will modify the clarity and focus of sound.

A narrower venturi, being of higher resistance, yields a clearer, focused sound with greater ease of articulation. A wider venturi, being of lower resistance, will give a broader sound while demanding greater clarity from the player.

The overall length of the leadpipe is also a factor. Shorter pipes will make the sound broader while longer pipes will provide more focus and center to the sound.

While some trombones have "fixed" leadpipes and are unchangeable, others will have user-changeable options. They tend to function similarly to the throat and backbore of a mouthpiece.

Handslides

The tenor trombone's slide can come in many bore sizes, referring to the inside width of an inner slide tube. These slides come in three basic sizes: small, medium, and large. They also come in "single-bore" and "dual-bore" configurations. The tubes of single-bore slides match in size, and they will provide a full, yet focused sound. The tubes of dual-bore slides will be two different sizes where the first tube connected from the mouthpiece is one size, and the second connected to the bell is a larger size. Dual-bore slides tend to have a much broader, open sound.

Commonly, small-bore slides range in measurement from 0.485” to 0.508” in width. Medium-bore slides measure at 0.525” in width. Large-bore slides measure at 0.547” in width. The largest slide considered a tenor trombone slide is a dual-bore measuring 0.547” and 0.562” for the first and second tubes, respectively.

Bass Trombone slides are more limited in size, essentially being the “extra-large” bore size of tenor. These slides typically come as a single-bore measuring 0.562” in width or a dual-bore measuring 0.562” in the first tube and 0.578” in the second. A dual-bore slide measuring 0.547” and 0.562” could also be considered a smaller bass trombone slide if paired with other bass trombone-sized components.

The end of the slide, known as a “crook,” could be narrow or wide. Narrow crooks help the trombonist produce a compact, pointed sound. Wide crooks will give a more open sound.

Slides generally come in two weight options: lightweight and standard weight. Lightweight will improve response and help to yield a more brilliant sound, where standard weight slides are denser, giving more weight to the sound, and may take a little more effort to respond. Lightweight slides also allow the player to operate the slide quickly with less physical effort.

One more consideration is whether or not to get a “tuning-in-slide” system, which means that not only is the handslide responsible for selecting pitches, but it includes a mechanism that takes the place of a standard tuning slide. This will make the slide a little heavier and possibly more problematic for some to operate, but adds weight and density to the sound, giving it a darker tone quality. Trombone slides with this configuration will not have a tuning slide in the bell section.

Tuning Slides

Tuning slides, responsible for finely adjusting the base pitch of the trombone, begin the taper between the slide and bell. The primary growth in the bell width will start through the tuning slide. These generally come in two formats for all sizes of trombone – single radius and dual radius. A single radius tuning slide is shorter in width, but employs one rounded curve. This allows for less resistance and a more open sound. A dual-radius tuning slide is usually wider with two smaller curves that make the overall construction flatter. The resulting sound from a dual-radius slide will be more compact and focused.

With a tuning-in-slide mechanism on the handslide, the bell section will have a complete taper up to the end of the bell without interruptions. This allows for a tone quality that retains a fuller spectrum of tone, ranging from the darker, warmer qualities of sound all the way through to the bright, rich qualities.

Bells

Much like slides, trombone bells range in size, both at the end of the bell, and in the flare itself. The sound will be broader and darker with a wider flare than that of a narrower flare, which will compact the sound. The diameter at the bell's end will also be a factor in the delivery of tone, with bigger bells giving a wider dispersal. Bells can come with varying thickness, where thicker bells, also being heavier, will give darker sounds versus thinner and lighter bells. The rim of the bell could also be soldered, which acts similarly to the thicker bells by increasing darkness of overall tone, where unsoldered rims allow for brighter tone. One must also consider whether to get a one-piece or two-piece bell. Where two-piece bells are two spun sheets of alloy connected near the point of widest tapering in the bell, a one-piece is continuous from the tuning

slide to the rim, which can give a darker, and more even resonance than a two-piece bell, which can sound brighter.

The bells of small-bore trombones typically run between seven and eight inches in diameter, inclusively. The bell on a medium-bore trombone might be 8” or 8.5” in diameter. A large-bore’s bell is typically 8.5” in diameter, but might even be 9” wide. The bells for bass trombones typically measure between 9.5” and 10.5” in diameter.

Valves

While the handslide is the primary method of selecting pitches, it is also possible to add a valve to the trombone. This single valve is placed on the bell section close to the slide connector. This valve utilizes its own set of tubing separate from the main tubing to adjust the pitch of the trombone. When the valve is engaged, the flow of the player’s air will route from the handslide through the valve tubing and then back through the end of the bell. This change of length, just like the handslide, alters the pitch of the trombone. The valve also extends the trombone range to include notes not conventionally accessible by the trombone without a valve. In the case of tenor and bass trombone, those inaccessible pitches include B1 through E-flat-2.

This adjustment of pitch with the valve can be seen in two ways. One way is that it adjusts the fundamental pitch of the instrument with a new set of positions. Another way to see the valve is as an extension of slide positions beyond the length of the standard slide.

The different types of valves offer varying levels of airflow resistance. Standard rotary valves offer the most resistance, especially if they use a “traditional wrap,” or “closed wrap,” which has more bends and curves contained within the boundaries of the main tuning slide. The standard rotor can also employ an “open wrap,” where the valve tubing has the fewest bends and curves possible. An open wrap will give the least airflow resistance with this valve.

Beyond the standard rotor valve, other designs have been made to address different airflow and facility concerns. Some of the common non-traditional rotor valve designs include:

Hagmann²⁷
Axial-Flow²⁸ (also known as Thayer valves)
Shires Tru-Bore²⁹
Conn “Christian Lindberg” valve³⁰

Almost without fail, a tenor trombone that uses a valve will come with an F-attachment, or F-valve, where using it will change the fundamental pitch from B-flat-1 to F1 and will reduce the slide to six longer positions. Another way to interpret the F-valve is that, when engaged, the tenor trombone’s first position is the same length as sixth position without using the valve, availing to the player all of the notes normally associated with sixth position. The five remaining positions would lower those pitches consecutively by a half-step. With the extra tubing in the F-valve, the tenor can play the pitches C2 through F2, which makes the originally missing pitches C2 through E-flat-2 possible. The F-valve has its own tuning slide, and most are made long enough so that it can be extended to change the valve’s fundamental to E1, meaning that the pitch B2 would be available at the expense of F2, making the tenor trombone a fully chromatic instrument.

A modern bass trombone is similar to the tenor, in that the first valve also an F-valve, and will likely have a tuning slide that allows for extension to an E fundamental. Unlike the tenor trombone, however, the bass trombone most often employs a second valve that comes in many different configurations. The functionality of the second valve could be “dependent” or “independent.” Dependent, or “stacked,” means that the second valve is positioned in such a

²⁷ “The Rene Hagmann Valve Design,” *Rene Hagmann Free-Flow Valve*, <http://trombone.ch/EN/valvedesign.html>.

²⁸ “The Thayer Axial-Flow Valve System,” *O.E. Thayer Company*, <http://www.thayervalve.us/>.

²⁹ “Trombone Valves,” *S.E. Shires Company*, <https://www.seshires.com/trombonevalves>.

³⁰ “Conn 88HCL with CL2000 Rotor System,” *Christian Lindberg – Trombone Soloist, Composer, Conductor*, <https://www.tarrodi.se/cl/index.asp?show=9>.

way that it can only function if the first valve is engaged; thus, it is “dependent” on the first valve. An independent, or “inline,” configuration is one where both valves are usable either singularly or together, because they both are positioned along the main tubing of the trombone.

Originally, the second valve was dependent and adjusted the fundamental to E. This allowed the bass trombone to be fully chromatic without pulling any tuning slides beyond their standard setup. As development has progressed, there are numerous permutations of second valve possibilities where the bass trombone, employing two valves, can change the fundamental pitch. That pitch can range from E1 down to B0. Today’s standard configurations employ the second valve keyed in G-flat or G, where either key with the F-valve together will produce D or E-flat, respectively. On an independent setup, the second valve can operate independently, as well, lending another set of six longer positions available besides the F-valve set and the double-valve set.

Finding Desirable and Complementary Tenor and Bass Trombones

Those in the survey who described the tenor and bass trombones that they use tend to be aligned with a few different philosophies. Many use different brands, but have similar characteristics between the horns. Others carry that method further, and use the same brand for both their tenor and bass selections. Some also seem to try to match overall resistance between two horns, meaning that the tenor would be more open than the bass. The other option is to expand the differences in the trombones, making the tenor more resistant and the bass less resistant. Many of these choices are due to achieving the desired response of sound, tone, and feel when playing.

When selecting the same brand of instrument for both tenor and bass trombone, a distinct advantage can be the immediate similarities of each horn. The components of each horn should be under similar construction circumstances, allowing for the “feel” of the horn to be similar, while each yields a sound respective to its voice. One such example would be a survey participant who uses a Conn 88H tenor trombone and a Conn 73H bass trombone. Both trombones use red bells and standard rotor valves respective to each instrument. As a result, both horns will have similar tone tendencies in the various dynamic ranges, and the playability should also remain quite similar. The 73H, however, will still provide a deeper and broader sound than the 88H due to the larger sizes of each of the components.

Similar results are possible by matching component designs from different companies. One participant reported using a Shires tenor and a Bach 50 bass trombone. Both are equipped with axial-flow valves and yellow brass bells. The valve selection will make both of these horns play very open. The independent valves on the bass will do so even more, since both valves are placed in the main tubing of the horn. The yellow brass on both horns will make the tone more consistent through all dynamic ranges as well. One dissimilar factor between this participant’s horns is the slide. The tenor uses a single-bore slide, and the bass uses a dual-bore slide, meaning that even though much of the sound will be similar, the bass sound will have a further-broadened quality. The single-bore slide will add focus to the tenor. That variation will allow the player to have a more direct sound on the tenor and a complementary, foundational tone on bass.

Another participant chose a more open tenor and a more resistant bass. His choices include a tenor made by Schagerl and a bass made by Willson. The tenor uses a yellow bell with a Hagmann valve, and the Willson uses a large (10.5”) gold bell independent Rotax valves

(essentially standard rotors with much improved airflow). This musician is primarily a bass trombonist, which suggests that the openness of the Hagmann valve allows the airflow of the tenor to be less constricted than it might feel with a standard rotor. The yellow bell of the tenor also maintains a more stable tone throughout the dynamics, whereas the gold bell of the bass allows for a more mellow soft quality and more brilliant loud quality. The larger bell size (simply because of extra mass) also helps the bass from reaching that brilliance as soon as it would with a standard 9.5” bell. Another feature of the Schagerl tenor is its tuning-in-slide setup, which also allows for a fuller and thicker sound, allowing the airflow to be more open through the tuning crook. This provides continuous growth through the bell at the tuning crook since no tuning slide is in place.

The other possibility is to make the bass much more open than the tenor. One participant chose both tenor and bass trombones from Shires. The tenor uses a rotor valve, while the bass uses dual independent axial-flow valves. The resulting tenor will be much more resistant compared to the openness of a bass with such valves. The standard rotor helps give a focused sound, where the dual independent axials will broaden the sound. The tenor bell is completely gold, where the bass bell starts red in the “stem,” with a flare ends in gold brass (providing stability in the bell, where a fully red bell could get more brilliant to quickly for this musician).

The majority trend through all setups reported that both trombones will have bells of either a similar alloy (color) or adjacent colors. If one bell is red, then the other would likely be red or gold. If one bell is yellow, then the other would likely be yellow or gold.

CHAPTER III

PHYSICAL ASPECTS OF DOUBLING

Embouchure

In order to play trombone, the musician must form an embouchure that allows ease of facility across the instrument. The embouchure consists of the shape formed by the lips, the placement of the mouthpiece on the lips, and how that placement adjusts or shifts through the range of the instrument.

Two of the survey questions asked if doublers use a similar embouchure between both instruments and if their embouchure operated in the same way between tenor and bass. About two-thirds of respondents indicated that they perform with the same embouchure style and operation on both tenor and bass trombones. This indicates that they are letting the design of the horn do more of the work to create the desired sound. Where others said the embouchure is different, most of them simply use a more open embouchure on bass trombone and a firmer embouchure on tenor. The open embouchure allows a broader air flow into the bass trombone and emphasizes more fullness of tone. The firmer embouchure will help enforce a focused sound on the tenor trombone. A few participants responded that they ignore the concept completely. Such musicians are allowing their equipment to do more work and use their desired sound as a more prominent guide in their playing. It would seem that having a similar embouchure setup and relatively similar operation is the best way to aid in one's doubling efforts. If necessary,

there may be some modifications to accommodate the different sizes of horns and mouthpieces, but maintaining as many similarities as possible should still make doubling on both horns easier.

Use of Air

With the options, “Much less air, Less air, Similar air, More air, and Much more air,” 60% of the respondents say that a passage played on tenor will require “More air” when played on bass. Another 20% said that they use a similar amount of air. If all of the trombone components, including mouthpiece, are similar between both horns, the bass trombone would likely take at least a little more air, given the larger bell, slide, and mouthpiece. As the components begin to vary, the player feel may change with varying resistance factors, such as valve choices, dual-bore and single-bore slides, and mouthpiece sizes. A large tenor mouthpiece on a tenor trombone with an axial valve would be a generally less resistant horn, where a small bass trombone mouthpiece with a single bore slide into two independent standard rotors would be a more resistant setup. These two setups could seem more identical in resistance than a tenor and bass of matching components. Typically, however, one should expect to use more air on bass than tenor.

With the airflow itself, many say similarly that they are using more air on bass than tenor, but also explain that they are blowing a broader air to accommodate the larger size of the bass. One specific participant mentioned that his airflow changes greatly due to the sound quality desired, leading more by the sound than using the mechanics of the air. In most cases, it stands that there will be at least a little more air required for bass trombone comparatively, and the doubler will want to be prepared to play with a more open air stream, but not play so open that the similarity in air flow and embouchure is lost.

Sound Quality

A trombone's tone quality sits on a spectrum, ranging from dark to bright, referring to how many of resultant overtones sound over the fundamental pitch. Dark sound quality focuses on the core sound with fewer overtones, giving a rounder quality of tone. The dark tone allows a player to blend more into the texture and be supportive without covering up other players. A bright sound adds many of those higher overtones, leading to what can be described as an edgy tone quality. Brighter sound allows the player to project out of the ensemble, which can be helpful when the music in question needs to be brought out for the listener to hear more easily. A powerful sound comes from the player who can retain the large core of sound while bringing out the brighter overtones.

The survey participants also described their ideal sound quality for each trombone. For the tenor, the general consensus is that it should have a thickness of sound along with a focus and clarity that can project. Some are more interested in a bright tenor sound quality. Others prefer to have a darker quality in the low range, but brighter tone in the higher range. One participant suggested the idea of the tenor sounding like a bass trombone with less breadth. The important consideration seems to be to achieve a tenor trombone sound that is full and complete, but avoids getting extra bright when the dynamics call for a powerful sound.

Regarding the bass trombone, most respondents are interested in a darker sound that is both broad and dense, but avoids a mean tone unless necessary. They also indicate that the sound should still be clear and centered. One musician suggested that it should sound like a bridge between the tenor trombones and tuba: roundness with the capability of clear articulation and focus. Overall, the responses indicate that the bass trombone should have a supportive sound most of the time, but have the capability to be powerful when needed.

CHAPTER IV

PRACTICE AND PERFORMANCE STRATEGIES

Practice

In the survey, participants were asked whether they would practice both tenor and bass in a single practice session of the day, if they would practice both in the same day, but not in the same session, or if they would only practice one trombone on a given day. Half of the respondents said that they do not use both trombones in a single practice session, but they would practice both horns in different sessions during the day.

Among the half who responded that they would practice both tenor and bass trombone in a single session, the primary reason was to get comfortable switching between instruments for an upcoming event where it was required. Most of these same respondents, however, would avoid doing so because of the mental and physical challenges of maintaining both instruments at a successful level. This would appear to be due to the physical differences in the instruments themselves. That would indicate that an approach involving more similarities would make it easier to be more successful, such as using tenor and bass trombones and mouthpieces that have more comparable characteristics, even though they would still be different in size. One useful suggestion was to practice the instruments in the order that they would be used later in the day, which would prepare the mind for what was going to happen musically throughout the day. Another excellent recommendation was to facilitate transitions between horns during one's practice by playing similar material.

The participants also were asked if they had strategies for practicing both instruments in the same day, but not in the same session. Only 29% said that they had such strategies. Another 10% responded that they always practiced both tenor and bass in a single session. Those with strategies indicated that they would practice one of three ways:

1. Starting on bass trombone, because it improves the embouchure strength and breathing when it is time to move on to tenor trombone.
2. Starting on tenor trombone, because the embouchure formed on tenor can transfer to bass, so long as it stays firm enough on the larger mouthpiece.
3. Starting on the primary instrument before switching to the secondary, so that the beginning warm-up is comparatively comfortable due to the primary instrument being more familiar.

All three options have merit, and can be applied to one's practice routine for those different reasons. Each addresses aspects of playing trombone and the needs of individual players. Generally, players are using the more comfortable trombone first to accomplish their warm-up exercise and beginning routines. The other options, though, should be considered for the possible issues they may help resolve when switching between trombones.

Performance

When asked if they had strategies that help them perform on both tenor and bass trombone, such as a recital or concert, two-thirds of the respondents said that they had strategies. Such strategies, however, were more of the same that apply to the practice strategies.

Some of the individual responses do indicate a trend to minimize the amount of "back and forth" doubling, where one switches the instruments quite regularly through the event. One

example of minimizing this “back and forth” would be to perform only tenor trombone on one half of a recital, and then perform only bass trombone on the other half. If the switches have to be regular, then it was suggested by many respondents to practice more rapid horn switches in order to get the mind ready to acclimate more easily to the more constant switching. The benefit to more rapid switching is that one builds mental strength and endurance by keeping the extra intrinsic information built into the mind and body. This advantage should not be ignored, and it can be more easily maintained if both the instruments and the doubler can operate as similarly as possible.

CHAPTER V

GENERAL TECHNICAL CONSIDERATIONS

Regarding the selected resources mentioned in the following chapters, it is important to address some technical considerations when trying to play the different materials on either tenor or bass. These ideas are some of the more prominent issues to notice particularly with the practice materials and solos.

On bass trombone, high range will generally be more of an issue than low range. It will be necessary to avoid excess mouthpiece pressure. Also, the doubler will need to maintain a firm embouchure and an airflow strong enough to sustain high pitches when they appear.

On tenor trombone, low range will be challenging, partly because the instrument is smaller. The doubler will need to maintain a small, firm embouchure and avoid overblowing. Too much air at first will make it difficult to keep the lips together. Slower practice will probably be necessary at first to have time to establish good tone throughout the low range.

On bass trombone, the tone will almost always be of a broader or thicker quality. Articulations will need to be clearer, particularly in the upper range, as the thicker tone tends to resonate longer. While the lips will have more space in the larger mouthpiece, it is important to maintain a focused, albeit relaxed, embouchure so that the lips do not become too open and unwieldy.

On tenor trombone, the tone will almost always be comparatively more focused than bass. Articulations still need to be clear, but the more compact quality of tone will allow for less effortful articulation.

On bass trombone, the second valve adds a number of extra combinations to aid in low range facility. With a dependent second valve, there will be some more options for the low notes by depressing both valves. With an independent second valve, not only will there be options with both valves depressed, but the second valve itself can provide more possibilities when depressed on its own. It should also be mentioned that when both valves are engaged together, there could be only five longer positions available, which is more likely on second valve configurations using longer independent tubing. While the slide is still the primary method of pitch control, the valves lend themselves to an overall greater versatility in the low range.

On tenor trombone, the F-attachment will provide access to the low range, but versatility can be a challenge. One way to increase versatility is to take advantage of alternate positions both with and without the valve. Intonation will get better with more time spent attempting more unusual positions and engagement of the valve. Also, since B1 is not readily available on an F-attachment, most trombones are capable of having its valve tuning slide pulled enough that it is tuned to E instead of F. With that adjustment, a new collection of positions become available, ranging from E2 in first position with the valve down to B1 in sixth position with the valve, and different alternate slide positions might prove useful to better navigate the lower range of the large-bore tenor trombone with F-attachment. Fast transitions between B-flat-1 and C2 (or B2 with the valve's tuning slide pulled) will be quite difficult, and slower practice will be beneficial.

CHAPTER VI

REVIEW OF SELECTED PRACTICE MATERIALS USEFUL FOR DOUBLING

Some of the fundamental exercises useful for a trombonist working on a single instrument can be just as useful on multiple instruments. A trombonist should be practicing:

Long Tones – exercises usually involving whole notes or longer played slowly and steadily in order to stabilize the air stream and embouchure.

Lip Slurs / Flexibilities – exercises that target the lips and air to connect sounds across the range of the instrument without the tongue.

Articulation – coordination of the tongue, air, and slide arm (and valve, if applicable) to make clean, clear, tones in various rhythmic patterns.

Lyrical Etudes – song-like exercises that play like short pieces of music that promote the singing aspects possible with a trombone.

Technical Etudes – articulate exercises that play like short pieces of music that promote the coordination of all the mechanics of the body and instrument.

The survey respondents answered affirmative that they apply each of the following types of practice materials to both tenor and bass trombone:

68% applied long tone exercises

90% applied lip slur and flexibility exercises

70% applied articulation exercises

79% applied lyrical etudes

70% applied technical etudes

The benefits were noted to be helpful in transitioning from one trombone to the other. A select number of practice materials with some basic information that can aid in doubling follow in this chapter. The list is intended only as a beginning for the doubler to discover what options are available on their path to doubling. Anyone interested in doubling can expand from this selected list to determine repertoire that can be attempted comparably between tenor and bass to develop stronger switching capability.

The etudes listed in this chapter to target the generally common range between tenor and bass trombone, many of which are labeled “for bass trombone” or “for trombone with F-attachment.” While some of the etudes do exploit the extra high and low ranges of trombone playing, the goal is to maximize consistency of both tenor and bass trombone tone. This is more feasible by playing each instrument in a commonly expected range for both. For both instruments, it would be advantageous to try some of these exercises using only the F-valve tuned to E, placing the B1 in sixth position with the valve.

The purpose of these materials is to provide an overall comfortable range that is comparably available on both tenor trombone with an F-attachment and a bass trombone. The goal is to maximize quality results by working mostly within B-flat-1 to B-flat-4. There are exceptions, but every trombonist needs to have this range available.

An extra possibility that adds challenge to the exercises is to change octaves. Trying different octaves will help develop better aural recognition by listening to the same types of sound quality and attempting to apply all things at an upper or lower octave. When playing lower octaves, it will be necessary to inhale more often and possibly play slower, which means being willing to allow the line to be less connected. When playing higher octaves, one must

make sure to avoid undue pressure against the lips, and the embouchure may become fatigued over a longer practice session.

Similar to octave differences, another practice is to read a bass clef exercise in tenor clef, meaning that the both the key and all pitches in the staff will be a perfect fifth higher. Not only could one read tenor clef, but it also can be read in different octaves. Reading tenor clef at the octave or one octave below is the most common. The same range issues for each instrument will apply.

Etudes

Aharoni, Eliezer. *New Method for Bass Trombone*. 4th ed. Jerusalem: Noga Music, 1996.

Range: B-flat-0 – A-flat-4

Clefs: Bass

Key Signatures: All standard key signatures. One irregular key signature.

This method is extensive with exercises for the various modern bass trombones available. While the F-attachment is generally standard, the second valve (assuming the bass trombone in question has one) varies in key and whether it can be used independently or only when the F-attachment is engaged. The exercises are a mix of technical and lyrical, spanning the entire low range of the instrument. Whether playing bass trombone or tenor trombone, it should be possible for all trombonists to work on the F-attachment portion of the book as it is written. Most double-valve bass trombonists will be able to do the same with one more section of the book. With the remaining sections, it would be fine to ignore the notated valve assistance and find combinations that work with one's own equipment.

Arban, Jean B. *Method for Trombone and Baritone*. New ed. Edited by Alan Raph. New York: Carl Fischer, 2013.

Range: A1 – B4

Clefs: Bass

Key Signatures: Up to seven flats and one double-flat. Up to five sharps.

The Arban *Method* is one of the standards originally for cornet and adapted to trombone and baritone. It covers most of the technical essentials to be an effective musician. It also includes a number of songs to play in addition to the technical exercises. Playing the exercises at the written octave as well as down one octave is good, as well as challenging, for both instruments.

Bloom, Oskar. *36 Studies for Trombone*. New York: Carl Fischer, 1974.

Bloom, Oskar. *Thirty-Six Studies for Trombone with F Attachment*. Edited by Reginald Fink. New York: Carl Fischer, 1962.

Range: F1 – C5 (Standard)

E-flat-1 – F4. (F-attachment)

Clefs: Bass (both)

Key Signatures: Up to six flats. Up to seven sharps. (Standard)

Up to six flats. Up to six sharps. (F-attachment)

These studies focus heavily on articulations through various patterns with each exercise covering a wide range of the instrument. The primary focus in this collection is technical facility.

Fink's adaptation of the original has transposed all of the etudes downward, and removing some measures as well, eliminating the necessity of B1. This version focuses on the

lower range and F-attachment, taking the aspects of technical facility and demanding more development of the coordination between slide and valve technique.

Bordogni, Marco. *Melodius Etudes for Trombone: Book 1*. Edited by Johannes Rochut. New York: Carl Fischer, 1928.

Bordogni, Marco. *Melodius Etudes for Bass Trombone*. Edited by Allen Ostrander. New York: Carl Fischer, 1970.

Range: G2 – B4 (tenor)

A1 – E4 (bass)

Clefs: Bass (both)

Key Signatures: Up to five flats. Up to six sharps.

Rochut arranged three books of vocalises by Marco Bordogni for tenor trombone. There are several versions and editions available, some of which contain all the vocalises in one volume. The original *Book 1* contains 60 different vocalises, while more are still available in the original *Book 2* and *Book 3*.

Vocalises are passages or exercises sung without words, or sometimes with syllables. When applied to trombone, they are perfect for establishing linear air, and then using the air, embouchure, and tongue to develop strong lyrical ability.

These vocalises can be practiced at different octaves, typically at written octave and one octave lower. Often, trombonists also adjust the key upward a perfect fifth and read the written notes in tenor clef.

Some other versions of this collection already transpose by as much as an octave to lower keys, intended to target bass trombonists or tubists. Included here is one adaptation by Allen Ostrander, which includes 27 of these same etudes. These etudes have been transposed

downward to low range of the instrument, requiring more use of the F-attachment. Another version would be *Complete Vocalises for Tuba*, edited by tubist Wesley Jacobs, which shows all of the etudes written down one octave from the Rochut version, which would give the player more visual exposure to the lower written range.³¹

Edwards, Brad. *Lip Slurs: Progressive Exercises for Building Tone & Technique*. Ithica: Ensemble Publications, 2006.

Range: C1 – F5

Clefs: Bass, Tenor

Key Signatures: Up to seven flats. Up to six sharps.

Lip slurs occur when brass musicians connect notes on different partials of the overtone series without using the tongue. This lip slur book has three different categories of lip slur exercises: slow slurs, fast slurs, and lip slur melodies. Those three categories are divided into six difficulties, as well. While most slurs in the book are purely lip slurs, some are facilitated with the F-attachment, making this a good book for tenor and bass trombone doublers. When playing either tenor or bass trombone, one can further develop lip slur flexibility by expanding the included exercises through the positions available with the F-attachment, the second valve, and both valves if available.

Gillis, Lew. *20 Etudes for Bass Trombone with “F” Attachment*. San Antonio: Southern Music, 1965.

Range: D1 – B-flat-4

Clefs: Bass

³¹ Marco Bordogni, *Complete Vocalises for Tuba*, ed. Wesley Jacobs (Maple City, MI: Encore Music Publishers, 2006).

Key Signatures: Up to five flats. Up to four sharps.

This collection by Lew Gillis is another early single-valve bass trombone etude book. It is still suitable today for bass trombonists as well as large-bore tenor trombonists interested in developing versatility with the F-attachment. The *20 Etudes* are of various tempi and provide both lyrical and technical study options.

When playing tenor trombone, the published *8va* markings could be ignored, playing the notes as written instead, but it would still be useful to attempt the *8va* as one's abilities develop. Bass Trombonists need to make sure the staccatos do not respond late.

Grigoriev, Boris. *24 Studies for Bass Trombone or Trombone with F Attachment*. Edited by Allen Ostrander. New York: International Music Company, 1970.

Range: G1 – A4

Clefs: Bass

Key Signatures: Up to six flats. Up to five sharps.

Grigoriev wrote 24 etudes using twelve key signatures. Those twelve key signatures are each used twice - once in major and once in minor. Most of the etudes are technical, but some are slower and more lyrical. A doubler could use these etudes, since they were written for both bass trombone and tenor trombone equipped with an F-attachment.

When playing tenor trombone, one could play the upper-octave options, but it would be useful to establish and develop the low-octave options when possible. When playing either tenor or bass, it is helpful to establish a clear, articulate style at a slower speed before trying to play faster.

Hering, Sigmund. *32 Etudes for Trombone*. New York: Carl Fischer, 1972.

Hering, Sigmund. *Thirty-Two Etudes for Bass Trombone*. Edited by William Stanley. New York: Carl Fischer, 2016.

Range: E2 – B-flat-4 (tenor)

G-flat-1 – D-flat-4(bass)

Clefs: Bass (both)

Key Signatures: Up to six flats. Up to two sharps. (both)

Almost the entirety of the tenor trombone version stays within two octaves, giving a trombonist the ability to stay within a smaller range of practice. Most of the book tends toward technical development, utilizing brisker, more articulate styles, some of which will be quite challenging.

The bass trombone version is similar to the tenor, except that all of the exercises have been transposed down by as much as an octave. Some of the facility needed in the pedal range might take time to develop in order to achieve mastery at the suggested tempi.

Hunsberger, ed. *The Remington Warm-Up Studies*. Athens, OH: Accura Music, 1980.

Range: E1 – D5

Clefs: Bass, Tenor

Key Signatures: Up to six flats. Up to six sharps. Mostly without key signatures, instead using accidentals.

This book includes a more concise offering of the fundamental exercises that Emory Remington developed and used in his teaching. As the trombonist does a warm-up by preparing the body, ears, and mind to play trombone, these exercises target many of the different necessary

aspects required to play the instrument. It includes numerous lip slur patterns, repeated tonguing exercises, long tones, and different scale exercises.

Many of the exercises in the book can be, and should be, expanded by the player so that the F-attachment and second valve are included, assuming that they are not marked to do so. Some of these exercises could also be continued upward and downward beyond what already is written on the page, following the established pattern in each exercise.

Playing many of the slur exercises down an octave should be possible by including the F-attachment. Some exercises would work well an octave down on bass trombone with two valves.

Ostrander, Allen. *Method for Bass Trombone and F attachment for Tenor Trombone*. New York: Carl Fischer, 1970.

Range: E1 – B-flat-4

Clefs: Bass

Key Signatures: All standard key signatures

This method is a progressive study that promotes learning of the F-attachment, which is useful for either tenor or bass trombone. The modern bass trombone did not always have a second valve, but this book can serve doublers well, especially since the tenor trombone with an F-valve is essentially a smaller version of a single-valve bass trombone. This book consists of basic exercises, original etudes, and selected orchestral excerpts. Most of the book is relatively easy to try with both sizes of trombone. Since it targets a bass trombone with an F-attachment, this book will be excellent for both tenor and bass trombone as published. Some of the extreme low range, however, will be challenging for tenor.

Vining, David. *Rangesongs for Tenor Trombone*. Flagstaff, AZ: Mountain Peak Music, 2011.

Vining, David. *Rangesongs for Bass Trombone*. Flagstaff, AZ: Mountain Peak Music, 2011.

Range: E1 – F5 (Tenor Trombone)

E-flat-1 – C5 (Bass Trombone)

Clefs: Bass, Tenor (both)

Key Signatures: Up to six flats. Up to five sharps. (both)

The *Rangesongs* are designed to increase a player's range and consistency within that range. Each book contains 105 etudes that are generally lyrical, consisting of five etudes per targeted high note or low note. Most of the etudes are identical between both books.

The high note targets in the tenor book range from F4 up through F5, and the low note targets range from F2 down through B-flat-1. The high note targets in the bass book range from F4 up through C5, and the low note targets range from E-flat-2 down through E-flat-1.

Those range targets mean that the shared etude target high notes range from F4 up through C5, and the shared low note targets range from E-flat-2 down through B-flat-1, which tells us that among the total of 105 etudes, there are 35 that are identical between the two books and another 35 etudes that are unique in each book.

A doubler owning one book for the primary instrument can play those same etudes on the secondary instrument, since most of the etudes are the same. One would only need to use the other book when ready to expand beyond what is already in the book currently owned.

CHAPTER VI

REVIEW OF SELECTED SOLOS USEFUL FOR DOUBLING

Unlike the practice materials, most of the survey respondents did not develop their doubling habits by playing various solos on both tenor and bass trombones. Only 35% had answered that they played solos on both instruments in order to improve their doubling abilities. Much like the practice materials, it makes sense to apply solos in the same way to both instruments.

The following pieces can help bridge the gap between the primary instrument and the double. As a doubler, it helps to maximize one's abilities within the comparable range that is shared between both instruments. In order to accomplish this, most of these works are written for the bass trombone. Some of the included works have been written for either tenor or bass trombone (or tenor trombone and tuba, where the bass trombone would play the tuba part). Most of the works limit the amount of playing in the extreme high and low ranges. When practicing, it could be helpful to change the octaves played in some passages in order to accommodate one's current abilities, knowing that more of the written octaves could be played as one's abilities strengthen. The works also allow the new doubler to have more opportunities to use the F-attachment on each horn. One can also explore additional works that can stretch the range and technique of both trombones.

Solos

Defaye, Jean-Michel. *Deux Danses pour Trombone et Piano*. Paris: A. Leduc, 1954.

Defaye, Jean-Michel. *Deux Danses pour Trombone basse et Piano*. Adapted by Donald Knaub. Paris: A. Leduc, 1977.

Range: F2 – F5 (tenor)

F1 – A4 (bass)

Clefs: Bass, Tenor, Treble (tenor)

Bass, Tenor (both)

Key Signatures: No specified key signatures, numerous accidentals.

Deux Danses is a two movement work, where the first is slower and more vocal, and the second is more spirited and gives the impression of an upbeat dance.

Only two general changes were made for the bass trombone version: octaves of many parts of the first movement, and all of the second movement, have been lowered to better suit the range of a bass trombonist, and the written cadenza of the first movement extends farther into the lower range. It is completely possible to play this work on a large-bore tenor trombone with F-attachment as long as attention is given to the low range.

It should be noted that the trombonist should only practice each versions of this solo on the opposite instrument for learning and development purposes. For performance, it would be correct to play the appropriate instrument for its respective version.

Bass Trombonists playing Tenor (bass version):

The beginning and ending of the first movement must be played full enough to establish a quality sound, even though those sections are marked *piano*. Ascending into the higher range of the movement, the embouchure should stay more relaxed to both avoid overshooting pitches and

keep the sound from getting too thin and tight. The pedal range of the cadenza can be relaxed so as to not overblow any notes and also avoid articulation anomalies when playing. Blowing with a more connected airflow will reinforce resonance on lyrical passages.

The second movement generally stays in a range confined to the staff, sparsely wandering away from it. The style is naturally appropriate for the lightness that the tenor can provide, so the natural richness of the tenor can exist with less effort; playing too loud will simply make the tone unnecessarily crass and potentially unstable. The rare triplets can be played with a lighter triple-tongue or doodle-tongue than when using bass trombone.

Bass Trombonists playing Tenor (original/tenor version):

About half of the first movement is identical, whereas the other half is up one octave. The extreme higher range will require a much firmer, focused embouchure and fast air in order to begin reaching the extreme high end of the piece's range. The original cadenza does not use pedal tones, never wandering into range where the F-attachment would be suited.

The second movement is identical, but everything is written up one octave from the bass version. The tenor should allow a relatively more relaxed embouchure while still maneuvering in the higher range.

Tenor Trombonists playing Bass (bass version):

In the first movement, the bass trombonist can resonate naturally through the opening lyric lines, since it will have a naturally softer and bigger quality without exerting as much effort. The more rhythmic middle sections will require more clarity to counter the resonance given by the horn; the air should blow long, but remain articulate. Avoiding unnecessary pressure is

essential when approaching and executing the high notes; using sufficient air and firm embouchure will be helpful. Playing too firm or tight, though, could cause the sound to pinch or otherwise become thin. In the cadenza, the embouchure should not get too open on the pedal tones, because the sound could become too broad and unfocused, causing fuzziness.

The second movement must stay bouncy, as the bass may not sound light enough naturally. Playing the style a little shorter can help in the more articulate passages. The lyric section can still be long, but should maintain clarity, especially on the fast triplets; a light triple-tongue could be more effective than using a doodle-tongue.

Tenor Trombonists playing Bass (tenor version):

For the absolute challenge of ability in the high range, this would require an exceptionally strong and focused embouchure in order to accomplish. It would also demand great endurance to play in the high range.

The first movement in both versions already has some material in the same octave, which would help provide a place to expand into the other sections. Most of the movement is written tenor clef with the notes typically written on the upper half of it.

The second movement, an octave higher in its entirety than the bass version, also mostly resides on the upper half of the staff in tenor clef.

Ewazen, Eric. *Ballade for Bass or Tenor Trombone & Piano*. San Antonio: Southern Music Company, 2003.

Range: A-flat-1 – G-sharp-4 (Bass).

B-flat-1 – A-flat-4 (Tenor).

Clefs: Bass.

Key Signatures: No specified key signatures, numerous accidentals.

Originally for clarinet, Eric Ewazen adapted the *Ballade* to be playable by either a bass or tenor trombonist. The piece is a single-movement work in five sections that alternate between slow and fast. The tenor and bass trombone solo parts are nearly identical except for a few changes in octaves. A capable bass trombonist could play all of the tenor version. A tenor trombonist could potentially do all of the bass trombone version except one passage, because of the B1 needed, and that still could be done if the F-attachment can be pulled far enough to place E2 in first position.

Bass Trombonists playing Tenor:

The lyrical passages require light articulation. The septuplet passages will need more attention with a connected airflow and smoother slur flexibility, because it will be more exposed than when playing bass trombone. In the sixteenth-note passages, the double-tonguing should stay relaxed, but exact, so that the tenor's clarity refrains from being overdone.

Regarding octave changes, the first Allegro molto will require wide leaps between B-flat-1 and C2 if playing the lower octave, which will also need to be relaxed enough to maintain a broader sound. Otherwise, the upper octave may yield better results. The other low-octave passages are easier and doable, as long as the embouchure is relaxed enough to maintain a thicker and broader sound without getting too crass.

Tenor Trombonists playing Bass:

The lyrical sections will still need to have clarity while maintaining long, smooth air when playing bass. The septuplets should flow more easily due to the size of the horn, but they

could also become sloppy and unclear. The double-tonguing on the sixteenth-note bursts in the lively sections should be done more firmly.

Regarding octave changes, all of the upper octave changes are possible on bass trombone, but the player must make sure to avoid extra pressure on the lips, because it will cost more in endurance. On the lower octaves, the first Allegro Molto will benefit from the use of whichever second valve is on the bass trombone, cutting out the wide slide jumps between B-flat-1 and C2. The same advantage is available for the B1 in the first section.

Hindemith, Paul. *Three Easy Pieces for Violoncello and Piano*. Mainz: Schott Musik International, 1938.

Range: C2 – D4.

Clefs: Bass.

Key Signatures: No specified key signatures, numerous accidentals.

One of the simpler pieces for cellists, this is a common piece for early bass trombonists. This work is in three short movements: a mildly active first movement, a lyrical second movement, and an upbeat third movement much like a waltz. Both a bass trombone and large tenor with valve can prepare this work without difficulty, especially since the piece has such a limited range.

Bass Trombonists playing Tenor:

In both the first and second movements, the C2 should use a relaxed air, but not so soft that the note becomes fuzzy and unclear. The slide motion with C2 and similar low notes still needs to be immediate, using long and open air with an exceptionally light tongue as needed when changing notes.

The second movement *ff* measures must be loud, but not harsh, which will more likely occur on tenor. One should avoid making the notes in articulated lines too short, and the *piano* dynamics should be just strong enough to maintain fullness.

Most of the third movement stays at *mf* or less, exposing only three *forte* moments. The line needs to be played with relaxed air and no aggression on the loud sections. The air also should remain long through the nimbleness of the movement's lyric activity.

Tenor Trombonists playing Bass:

The C2 in the first and second movements could become small and pinched because of the soft dynamic; the embouchure must remain open enough with sufficient air to satisfy the thickness of the C2 and any other notes in that range. The second valve can help to place the C2 in a closer position, which should allow some valve slur options unavailable on tenor. The articulate passage should be focused and light so that the musical line does not get too weighted. The *ff* moment in the second movement should have a thick sound without spreading harshly.

In the third movement, the slurs within partials may need more clarity from the tongue. The *forte* moments should remain within the musical context; getting the same edginess on bass most likely means that there is already much more tone than with tenor.

Jacob, Gordon. *Cameos for Bass Trombone*. Ampleforth, Yorkshire: Emerson, 1979.

Range: B-flat-1 – B-flat-4.

Clefs: Bass.

Key Signatures: Two flats, five flats, and six flats.

Jacob's *Cameos* is a short five-movement suite, where each movement characterizes a different type of guest. Originally for bass trombone, a tenor trombonist could also perform this work.

Bass Trombonists playing Tenor:

The tenor trombone will accentuate the necessary brilliance for the first movement. The articulation should be clear, but not heavy.

The second movement needs a more relaxed, songlike air that maintains a broad, somber quality. There is a low-octave option (C-flat-2, or B1) that could be done with the F-attachment pulled to E, but it likely would need to be pulled for the entire movement.

Movement three needs to be buoyant without being pecky in order to maintain the intended dancing nature.

The required straight mute and the tenor's more compact tone in the fourth movement can promote a raspy, yet mysterious quality. With the mute, the final C2 might be more of a challenge to reach, since mutes make trombones sharp.

In the final movement, the single eighth notes should have a bouncy quality. The linear eighth note passages will need length in order to keep tone with every note and maintain the musical line. The hardest two measures include descending eighth notes, crossing a C2 to a B-flat-1. Long air and immediate slide motion should help keep the notes long enough; those two measures may be better played up an octave. The loud passages can have some zing, especially in the final ascending scale to a B-flat-4.

Tenor Trombonists playing Bass:

A focused air column through the first movement helps establish a fanfare quality, as if playing trumpet.

In the second movement, the second valve can be utilized for the optional low-octave with the C-flat-2. The bass trombone should be sufficiently mellow, as long as the *piano* markings are observed. The singular *forte* moment can have more passionate zing.

The third movement needs shorter articulation. What may sound pecky on tenor would provide the necessary nimble clarity on bass.

The mute will still give the bass some needed edginess for the fourth movement, but the air still needs to be focused to avoid fluffy tone. Again, the second valve option can help for the lowest notes.

The bass will more easily give the singular eighth notes a buoyant quality in the final movement, but the linear eighths will still need more clarity for the lively quality necessary. The last ascending scale to the B-flat-4 will need sufficient air while minimizing pressure on the embouchure. That final *ff* can have a more focused tone to finish the piece.

Lassen, Eduard. *Zwei Fantasiestücke*. Edited by Blair Bollinger. Ithica: Ensemble Publications, 1998.

Range: C2 – A-flat-4 (optional E-flat-2 for lowest note as published).

Clefs: Bass.

Key Signatures: Three flats, four flats, and zero flats.

This work consists of two simple movements. The first is a song with a lyrical quality. The second is the more active and dancelike, but still maintains a lyrical tone. Since most of this piece plays in the middle-to-upper range, it can be played on both tenor and bass as written.

Bass Trombonists playing Tenor:

The first movement has very little at a *forte* dynamic or louder, which makes it important to keep a rounded, vocal quality of sound at all times. The two brief *forte* moments can start to have some intensity, but stay mostly relaxed with the air until the only *ff* arrival, where the tenor qualities can ring stronger before immediately falling back to a softer, rounder tone.

The second movement has plenty of sixteenth-note motion, but the air needs to stay long to maintain the lyric quality that still exists. Playing the specified staccato markings with a little more space is helpful, but without making notes so short that the tenor sounds toneless. The tenor will easily give the notes with accents and *fp* markings a more natural zing and flavor to the dance. The clarity of the two *ff* moments should be valued over raw dynamics, meaning that a rounded sound is preferred over an edgy one on these particular loud sections. The final C2 should not be so soft that the tone suffers.

Tenor Trombonists playing Bass:

Throughout the piece, the player will need sufficient air for the high notes without straining or pressing against the embouchure. Also, more articulation clarity throughout both movements will be required, since the high range will sound much bigger on bass than tenor. A more focused air column and embouchure will help achieve both the high range and clarity.

The first movement loud sections generally sit higher in the range, so the air should stay focused with a firm, free embouchure that does not rely on mouthpiece pressure.

The second movement requires shorter eighth notes for both clarity and emphasis on style. The final C2 must have enough air for a full sound, even though it is marked *ppp*.

Liszt, Franz. *Hosannah for Bass Trombone and Organ*. Mainz: B. Schott's Söhne, 1983.

Range: B-flat-1 – G4.

Clefs: Bass.

Key Signatures: One flat, five flats, two sharps, and three sharps.

While *Hosannah* is a short work, preceded by a “Choral,” written with bass trombone in mind, the tenor can play it rather easily as well. The first movement is three short verses emphasizing the vocal quality of the trombone. The second movement is mostly a fanfare style with joyous praise.

Bass Trombonists playing Tenor:

The tenor will give more direct sound, even in the softs, which can help emphasize the trombone against the organ. The Choral needs to stay rounded and not edgy, but the actual *Hosannah* can become more brilliant. It will more easily have clarity against the massive sound of the organ, and the brilliance will add to the mood of praise. The C2 may need attention.

Tenor Trombonists playing Bass:

The Choral will have a fuller vocal quality on the bass trombone, but it will need more defined articulation to give the verses more clarity. The actual *Hosannah* will be joyously large in tone, but the bass trombone could fall into the sound of the organ too easily. It will likely require significant air and extra clarity of articulation to differentiate the bass trombone from the organ.

McCarty, Patrick. *Sonata for Bass Trombone and Piano*. Ithaca: Ensemble Publications, 1994.

Range: E1 – E4 (optional A1 for lowest note as published).

Clefs: Bass.

Key Signatures: One flat and zero flats.

This three-movement *Sonata* was written for bass trombone, but a tenor trombonist can play it with some of the published octave options. A tenor player with excellent command of the pedal range, however, could possibly play all of the lower-octave options. The first movement is moderately fast and mostly lyrical with some small articulate nuances. The second movement is slow and similarly lyrical. The third movement is much faster, and most of it is quite active.

Bass Trombonists playing Tenor:

The tenor is suited to the lyrical motion of the first movement, though firm control of the C2 in one valve is necessary if the lower-octave options are played. There are a few A1 pitches that need to be played with an easy air so that they can speak clearly.

The second movement has a 23-count A2 that will likely be easier to sustain on a tenor in one breath, especially since it is marked *pp*.

The third movement will more greatly expose any flexibility issues on tenor, since there are a few wide lip-slur patterns as well as staccato octave jumps. The air must stay longer through all of these slurred passages and stay light on the articulation. Any brave trombonists can try to play the descending pattern that ends on E1 just before the recapitulation. The embouchure, however, has to remain controlled so that a clean, full tone can be made. The upper-octave option would be more practical and possible.

Tenor Trombonists playing Bass:

There are some lower octaves in the first movement that are easily executed with the bass trombone's second valve. The slide must maintain immediate motion, adding more clarity to the articulation on slurs within a partial, so that the melody does not get sloppy or gooey.

The 23-count A2 in the second movement will be more trouble on bass to maintain in one breath, even at *pp*. If one breath is not possible, it would be advantageous to take a breath about halfway through.

The articulation needs to stay clear in the third movement. The slurs should sound smoother on bass, but the slide motions have to be more exact so that there is clarity along with the connection. The larger equipment will allow you room to maintain a firm, yet open embouchure as you play down toward the written E1. The section is written *piano*, but there needs to be good tone on every note before considering dynamics.

Sachse, Ernst. *Concertino in B-flat Major: for Trombone and Piano*. Edited by Allen Ostrander. New York: International Music Company, 1957.

Sachse, Ernst. *Konzert für Posaune und Klavier*, F Major ed. Edited by Martin Göss. Frankfurt: Zimmerman, 1988.

Range: B-flat-1 – B-flat 4 (tenor)

F1 – F4 (bass - potential unpublished option for C2 as lowest note).

Clefs: Bass. (both)

Key Signatures: Two flats and three flats (tenor)

One flat and two flats. (bass)

This *Concertino* has three primary sections: a mostly lively section, a slower section that remains rather active, and a theme with variations. Originally in the key of B-flat Major, the

adaptation in F Major is essentially the same, except that it has been transposed down a perfect fourth, and most of it can be played rather easily on a large-bore tenor with F-attachment. Both versions of this solo are within reasonable grasp of either instrument.

In the F Major version, it might be necessary to play any F1 pitches as F2 when using tenor trombone. In the B-flat Major version, the player will need to keep a strong, focused embouchure to be successful in the upper range. Also in the B-flat version, the arpeggios will require less slide motion than the version in F, unless the F-attachment is depressed throughout, meaning that all the relative motion and positions essentially would be the same.

In the B-flat Major version, the bass trombone will require firmer articulation throughout the high range of the piece. Playing with the mindset of a tenor trombonist should help provide focus even though the bass trombone is being used.

Bass Trombonists playing Tenor:

The tenor more easily conveys the brilliance needed in much of the first section. It will also better allow the light quality that keeps the music in motion.

The slow section will need a connected airflow to accommodate the lyric quality needed, even though the section still mostly consists of active arpeggios. The loud moment can be fierce, but the tenor may become too harsh if it is overblown.

In the theme with variations, the tenor trombone will provide the stylistically lighter qualities that help this section. In the B-flat Major version, the tenor should reach the high notes with relative ease. In the F Major version, the only questionable note is the C2 in the final variation, which may need attention for good intonation.

Tenor Trombonists playing Bass:

It will be necessary to play with clearer articulation for the fanfare quality of this style. The high range near the end of the first section could start taxing endurance at first. The player needs to avoid undue pressure on the lips and use sufficient air.

Long air is still necessary in the second section, but there also must be enough clarity in the articulation to not sound sloppy. The *ff* passage will sound extra full and resonant with the bass trombone, so the louder passages may require more pointed articulation.

If the embouchure gets too open in the theme with variations, then the notes will become tougher to center. A directed air throughout the variations will assist in avoiding that tendency. In the F Major version, the second valve will be useful for the C2.

Stevens, Halsey. *Sonatina: for Trombone or Tuba and Piano*. New York: Peer International Corporation, 1968.

Range: E-flat-2 – F-sharp-4 (Trombone)

G1 – F4 (Tuba)

Clefs: Bass.

Key Signatures: No specified key signatures, numerous accidentals.

Halsey Stevens wrote this *Sonatina* with solo parts for either trombone or tuba. A bass trombonist today would use the tuba part, where a tenor trombonist would likely play the trombone part. The first movement consists of contrasting articulate and lyrical sections. The second movement is slower and generally more lyrical, but with a few more articulate places. The finale is more active and driving than the first, with both multi-meter changes and different rhythmically-pulsed meter.

The two solo parts are mostly the same. There are some minor octave changes throughout the piece, and the trombone part has only a few measures that have been altered slightly to better suit the trombone compared to the tuba. A good tenor trombone today could play the tuba part entirely except for one measure without pulling the F-attachment to E. A bass trombonist could play either part.

Bass Trombonists playing Tenor:

The pulse of the first movement varies greatly from the written meter, and the tenor will naturally give more rhythmic pulse with less effort from the player. The tenor will have a suitably lighter quality for the articulated passages, but the *espressivo* passages will need longer air to establish more connectivity.

The second movement is mostly legato, so it is important to stay quick, yet light on the articulation while playing with longer, sustained air. The B1 at the beginning of this movement (tuba part) will likely require the F-valve pulled to E through the entire movement (which will affect all the other positions with the valve). The long air should also help with some of the lyrical sixteenth notes lower in the range. When there are times to be loud, the air should open more, so that the tone does not get thin and pinched.

The finale operates similarly to the first movement. The tenor's lighter tone and clarity will allow more nimbleness, and it will more easily stress the musical pulse throughout the movement. The C2 pitches in the tuba part will be quite challenging, given how quick they pass. It may be helpful to consider picking options between both the trombone and tuba parts.

Tenor Trombonists playing Bass:

More emphasis on pulse will be required, as the thicker bass tone will make the flow smoother at the cost of clarity. One should avoid playing the pedal tones too soft, as they are already low enough to sound softer compared to everything else. The staccatos can be shorter, but still bouncy.

Most of the second movement can be played with a relaxed air, taking advantage of the double valve for the B1 appearing at the beginning (tuba part). It can be too easy to overplay the louder passages, as the embouchure might get too firm and pinch the tone.

In the third movement, the lips should be loose enough so that they can vibrate some of the quick lower pitches. Being too firm could slow down response in the lower registers. Like the first movement, the staccatos must be shorter, using the bass trombone's more natural resonance. Rhythmic pulsing will still need more emphasis compared to tenor.

Tcherepnin, Alexander. *Andante für Tuba oder Posaune und Klavier*. Mainz: M.P. Belaieff, 1950.

Range: A-flat-1 – D4 (Tuba)

B-flat-1 – B-flat-4 (Trombone)

Clefs: Bass.

Key Signatures: Zero, two, three, five, and six flats. One sharp.

Tcherepnin wrote this single-movement work for tuba or trombone that is mostly lyrical throughout, also including a lightly articulated section and a section of building intensity and dynamic. Either part is playable by a tenor trombone with F-attachment or a bass trombone. The differences between the parts are strictly octave changes.

Bass Trombonists playing Tenor:

Playing the tuba part, most of the notes reside in the staff, meaning that more connected airflow will help provide the lyric quality necessary. When the notes become more staccato, the air must remain buoyant or bouncy so that tone remains, particularly when the staccato notes are at the bottom of the staff or below. The low valve notes and pedals (ranging from A-flat-1 to E-flat 2) need to have fuller air than the upper octave (the trombone part) where the valve is not needed. There are a few C2 pitches that will need to be placed well, especially at a tempo where the tone is more audible.

Tenor Trombonists playing Bass:

Most of the piece is in the softer dynamics, so the bass trombone tone can be relaxed and open, particularly on the tuba part. Any staccato passages should be played more crisply to increase clarity from the bass trombone. Using the bass trombone on the trombone part will be much more of an endurance challenge, because most of it plays above the staff, causing the player to fatigue more quickly. It will be necessary to avoid excess pressure, continuing to fuel the embouchure with sufficient air.

CHAPTER VII

REVIEW OF SELECTED ORCHESTRAL EXCERPTS USEFUL FOR DOUBLING

In the survey, only 30% of the respondents would use orchestral excerpts to aid in their doubling abilities. However, those in that percentage who elaborated on their answer indicated that much of the standard orchestral repertoire has similarities that can be useful to assist other aspiring doublers. While only a small percentage actually take this approach, it would seem to be a useful approach to an orchestral trombonist wishing to delve into doubling.

This chapter includes three sections of selected trombone excerpts from public domain orchestral repertoire to demonstrate usefulness of exploring the other trombone parts in order to aid doubling mastery. The first of these sections deals specifically with bass trombone excerpts from earlier works that could be performed on either a large-bore tenor or true modern bass trombone. The second section comprises excerpts where the parts are mostly in unison. The final section consists of excerpts that are generally homorhythmic, but with independent musical lines. Each excerpt contains specific instruction to aid in the performance of each excerpt. While this guide is not comprehensive, it serves as a launching pad to discover more works as helpful learning aids for the prospective doubler.

Bass trombonists developing tenor trombone skills will likely want to begin with the classical-era section first and proceed in order, as the repertoire will be more familiar and help facilitate the transition to the other sections. Tenor trombonists developing bass trombone skills may want to begin with the second section for the same reasons.

Classical-era Bass Trombone Excerpts

The size of the orchestra could be a factor in deciding whether or not to use a large-bore tenor in lieu of a modern bass trombone in earlier classical works. The conductor or principal trombonist may also have input as to what equipment is used. Larger equipment will continue to provide balance for a full-sized symphony orchestra, but using a tenor would accommodate chamber-sized orchestras. If the work requires a choir, such as a mass, the size of the choir would be an additional consideration. In this chapter, the term “tenor trombone” specifically refers to a large-bore tenor.

The decision could depend also on the equipment available to the section. It is possible that the low brass section would choose smaller equipment, which might consist of an alto trombone for the first part, a small-bore or medium-bore tenor for the second part, a large-bore tenor to play the third part, and a bass tuba in the event the work requires it. “Large equipment” usually refers to the standard instrumentation (two large-bore tenor trombones, a bass trombone, and the larger contrabass tuba).

A bass trombonist being able to play classical-era bass trombone parts on a large-bore tenor can bring extra versatility to the section timbre as desired or necessary. A tenor trombonist can build an understanding of the difference in timbre by learning these excerpts on a bass trombone. In doing so, the tenor trombonist should carry the style of the bass trombone back to the tenor, even though the size and body of sound will not be completely replicated.

The following classical-era bass trombone excerpts are examples of both articulate and lyric styles in the standard repertoire that range from E-flat-2 up to G4. That range is expected to be playable on a bass trombone, and it is likewise capable of being played on the tenor trombone. Using these excerpts should allow a transition that can allow a bass trombonist to have timbral

options in the orchestral setting. They will also allow a tenor trombonist to learn the functioning of the bass trombone across a familiar and comfortable range.

Beethoven – *Symphony No. 9*

This excerpt occurs in the final movement of Beethoven’s *Symphony No. 9* just after the recurrence of the “Ode to Joy” melody. This movement includes choir, and the bass trombone plays this melody along with the tenor and bass voices. Beginning at measure 595, the bass trombone and low strings play the unison line with the tenor and bass voices through measure 602. At measure 603 through rehearsal N, the entire orchestra plays in a chorale while the choir sings. From rehearsal N through measure 618, the singular unison line returns with the same instrumentation as measure 595, except that the second trombone has been added one octave higher to match the higher octave now sung by the tenor voices. The dynamics in this excerpt are generally marked as loud, but should be played in a vocal manner to support the choir. The player has to avoid explosive articulation on the *sforzando* markings, aiming instead for the sound to be weighted on the front with a small, sustained decay afterward. The staccato markings should match the length of the words sung by the choir.

Example 1. Beethoven, Movement 4 from *Symphony No. 9*, mm. 595-626.

Andante maestoso $\text{♩} = 72$

595 *ff* *sf* *sf* *ff* *f*

606 *sf* *sf* *ff* *sf* *sf*

618 *f* *sf* *p*

A large-bore tenor trombone would provide clarity in the marked staccatos, and the D4's and E-flat-4's will not require as much strength in the embouchure. The tenor may need to be played more strongly to produce a loud enough sound, but it must be done while still maintaining a vocal quality.

The bass trombone will give more body of sound without the effort. Staccatos will sound more buoyant and resonant than a tenor trombone. It will require that the embouchure is strong enough to remain unwavering on the high notes. The player will need to avoid getting so loud that the horn loses its balance and overpowers the ensemble.

Haydn – *The Creation*

“Achieved is the Glorious Work” is one of 32 movements in Franz Haydn’s oratorio, *The Creation*. This excerpt is the brisk first section in a movement that follows with a slow section, returning to a fast section. It requires range flexibility and a forte sound that remains light and lively. The part is also played by bassoons and low strings, operating as a continuo, but also supplements the bass voices at times. The danger is to play too loud and too heavy, which can inadvertently slow down the vivace feel. There are also no easy places to take breaths in the opening measures. One suggestion is to breathe on the repeated pitches when rests are not available. Marked staccatos should bounce. The half notes should sustain, but decay slightly after the articulation occurs.

Example 2. Haydn “Achieved is the Glorious Work” from *The Creation*, mm. 1-37.

26. Chor und Terzett
Vivace

The image shows a tenor trombone part of a musical score. It consists of seven staves of music. The first staff is marked with a 'Vivace' tempo. The music is in 2/4 time and features a key signature of two flats (B-flat and E-flat). The score includes various musical notations such as eighth and sixteenth notes, rests, and dynamic markings. There are two specific sections labeled 'A' and 'B'. Section 'A' begins at measure 10, and section 'B' begins at measure 16. The piece concludes at measure 37 with a final cadence in the key of B-flat major.

A tenor trombone will help give the excerpt a nimble quality necessary, especially with the octave leaps. The low pitches could get too harsh on tenor trombone if forced. Allowing the notes to bounce will keep them from getting too short and pecky as well.

A bass trombone will need to have good embouchure and air control to achieve nimble octave leaps to the G4s and F4s. In general, priority should go to the light quality of sound instead of being loud. Staccatos should still resonate, even if they are played shorter.

Mozart – *Requiem*, K. 626

Another rhythmically involved excerpt comes from the *Requiem*, a mass by Wolfgang Amadeus Mozart. The entire movement called “Kyrie” uses two themes based on two phrases: *Kyrie Eleison* (Lord, have mercy) and *Christe Eleison* (Christ, have mercy).

Example 3. Mozart, “Kyrie” from *Requiem*, mm. 1-52.

II. KYRIE

Allegro

f

5

9

13

17

21

25

29

33

37

41

45

49 Adagio

In Example 4, the first seven notes of the excerpt execute a syllabic form of *Kyrie Eleison*, giving each syllable its own note and articulation.

Example 4. Mozart, “Kyrie” from *Requiem*, mm. 1-2.

Ky - ri - e E - le - i - son

In Example 5, beginning at measure nine and ending at the third beat of measure twelve, the phrase *Christe Eleison* is broken into three segments. The first three notes are syllabic, and so are the final two notes. The stream of sixteenth notes and eighth notes in between, however, are melismatic with one syllable being stretched through that entire run of notes.

Example 5. Mozart, “Kyrie” from *Requiem*, mm. 9-12.

Chri-ste e - le----- i - son

This excerpt doubles the bass voices with the other low instruments in the orchestra. The sixteenth notes, being melismatic in nature, should be played with connection. The longer notes should have length and articulation that matches more closely with the enunciation and length of the syllables sung by the choir.

Tenor trombone will more easily execute clear syllabic passages, but the melismatic passages could become choppy with that same clarity. A tenor trombonist spending time on this particular excerpt will want to be certain of slide technique, as the movement resides almost exclusively within the staff. Spending time to master the valve technique for B2 and C3 in measure 45 should improve nimbleness in that range. It also may be helpful to play the B-flat-2 in measure twenty with the valve engaged and the slide in a lowered third position.

The bass trombone will have a more natural tendency to be smooth on the melismatic passages. The player must make sure that those passages are not so smooth that clarity is lost. The syllabic passages can have a firmer, but buoyant clarity, or they may begin to sound slurred.

Schumann – *Symphony No. 3*

This bass trombone excerpt, Robert Schumann’s *Symphony No. 3*, also known as the *Rhenish*, is a common challenge because it must be performed after resting for three movements. In this excerpt, the trombonist is playing the bass line of a chorale with the bassoons and low strings. It must be played softly, smoothly, and solemnly (per *Feierlich*). Depending on the

conductor, this could be done either slowly or extra slowly. Even though the part is also played by the bassoons, any breaths taken need to avoid making the musical line sound disjointed. The forte in rehearsal A should be significantly different from the pianissimo, but not such that it becomes edgy. A large breath is necessary to hold the first E-flat-2 for its full value with decrescendo. At measure twelve, the marked *solo* line should have presence and gradually become stronger (per the instruction *nach und nach stärker*). It may be helpful to play the first F3 in measure 17 in sixth position and the subsequent F3 in first position, remembering to add emphasis with the notated marcato.

Example 6. Schumann, Movement 4 from *Symphony No. 3*, mm. 1-18.

Tenor trombone has the advantage of being both clear and smooth when utilizing natural and valve slurs whenever possible. It also allows for a quieter, more delicate pianissimo sound by not being as big and broad. On both E-flat-2 pitches after rehearsal A, the sound of the forte needs to remain rounded. Breath control should also be easier with the tenor.

Bass trombone is more of a challenge due to the naturally larger size and sound of the modern bass trombone. The excerpt can sound much smoother with the size of sound, but one should prepare to play softer and continue to facilitate the smooth quality. The danger is the

possible inability to sustain the air and tone by getting too soft. The air control will be more challenging due to the larger equipment.

Excerpts for Trombone Section in Unison or Octaves

Many pieces in the orchestral repertoire employ trombone with unison lines, which lends the doubler another practical avenue to mastering the secondary instrument. With the full section in unison, the timbre of the tenor trombones and bass trombone can blend together, which results in a more complete sound.

Using excerpts that are unison for all trombones allow either instrument to play within a range that is expected of both. In doing so, one already should have a basic understanding of the excerpt when using the secondary instrument. When playing the secondary instrument, keeping the technique similar will allow the player to hear the tonal difference between the tenor and the bass, which then will allow the player to make any necessary changes to fit the necessary style.

Berlioz – Damnation of Faust

The “Hungarian March” from *The Damnation of Faust* by Hector Berlioz is a common audition excerpt for both tenor and bass trombone. Trombonists should aim for a loud and rich tone with light, articulate style. The rhythmic section is also played with the tuba, bassoons, cellos, and basses. Extra attention is needed to emphasize pulse on the downbeat of each rhythmic sequence (each of which is marked *fortissimo*), even though it has the shorter eighth note value; otherwise, the emphasis could transfer to the dotted quarter notes due to their longer value without extra attention. Similar slide positions will also help maintain group intonation

throughout the excerpt. In the last four measures of this excerpt, it will be necessary to add some volume to compensate for the change from unison to chords.

Example 7. Berlioz “Hungarian March” from *Damnation of Faust*, mm. 88-115.

The musical score consists of four systems. The first system shows the Trombone part (II) and the beginning of the Piano accompaniment. The Trombone part starts with a dynamic of *p* and includes a *poco cresc.* marking. The Piano part starts with a dynamic of *mf cresc.* and includes a *ff* marking. The second system continues the Piano part with a *ff* marking. The third system continues the Piano part with a *ff* marking. The fourth system shows the end of the excerpt with various chordal textures.

Tenor trombones will give a brighter, more focused sound, and it is not necessary to make the staccato too short. The *fortissimo* needs to be bright without getting harsh. In measure 114, the D4's in the first part could be played in lowered fourth position with a natural slur from B3 similarly to the second part's G-sharp-3 slur to B3. It is written for the first tenor part to rest on the octave leap downward after any of the running lines, but by playing second part, the practice in playing it will already be established in case the conductor or section decides that the trombonist on the first part can play the octave leaps anyway.

Bass trombones need to give clearer articulation to the beginnings of all notes. At the *fortissimo*, the timbre of the tenor trombones will provide the brighter quality needed, and the

bass trombone can focus on clarity and body of tone. In the final four measures, there needs to be enough foundation for the chord played with the tenors.

Rossini - *William Tell Overture*

The running eighth notes in this lengthy excerpt are some of the more challenging in the standard audition repertoire. They must be played in time so that the running notes do not come late after the tied whole notes. The part is identical with bassoons, and the cellos and basses also have runs, but they play repeated eighth notes in place of the tied whole notes. The tempo is in a brisk *alla breve*, meaning that sluggish preparatory breathing could contribute to a late entrance on each set of running eighth notes. The long note can decay as the upper woodwinds and strings play their descending line of fury. That decay can invite a breath for a more precise entrance on each running line. The staccatos should be clear and articulate, which will give enough separation without emphasizing shortness of each note. All of the notes with the *sforzando* instruction can be intensely articulated, but should still avoid too much harshness in the resulting brightness of tone. Tenors and bass should agree on the relative slide position on the final A-sharp of the excerpt.

Example 8. Rossini *William Tell Overture*, mm. 92-131.

The image displays eight systems of musical notation for tenor trombone. Each system consists of two staves, a treble clef and a bass clef. The first four systems feature long, sweeping melodic lines in both hands, often with slurs. The fifth system begins with a dynamic marking of 'sf' and shows more rhythmic activity. The sixth system continues with 'sf' markings and includes some rests. The seventh system shows a change in dynamics to 'p' and features more sustained notes. The eighth system is a short, concluding phrase.

Tenor trombones have the upper octave on all of the longer notes. After the final run, the second A, G, and F-sharp of each pair of quarter notes can be an echo of the first. The sound can

have an overall brightness when in the upper range of the excerpt and should remain clean and clear in the lower range. If done with good tone, one could play the A-sharp-3 in measure 130 in fifth position to remain in the same partial as the other notes in the last three measures.

Bass trombones play the lower octave on all tied whole notes, and most of the longer notes at the end of the excerpt. There needs to be enough sound to balance the upper octave played by the tenors. There should be a rich, articulate tone and body of sound when in the lower range and a simple clarity in the higher range while the tenors take the lead. The tone must remain clean and clear on all of the runs without getting harsh. The quarter note octave leaps that occur after the runs should not decay, nor should they drive. With good tone, the final A-sharp-2 could be played using the F-valve in lowered third position, as the rest of the final three measures will likely be played in the valve.

Schubert – *Symphony No. 9 (The Great)*

The excerpt shown comes from the first movement and is in complete unison except for just a few chords played amongst the rest of the orchestra. The unison lines are solely with the trombones, and the rhythmic pattern is passed in small segments amongst the other wind instruments. This particular excerpt is also an classical-era work, so the large-bore tenor might be suitable for the bass trombone part. It may be necessary to count the unison portion of the excerpt as one beat per measure instead of the marked *alla breve* time signature, allowing the line to flow smoothly as the music builds toward the *ff* in measure 228. The tempo likely will resume a two-beat pulse by measure 228 if not possibly four measures before. Each unison interjection should decay from the downbeat, particularly from the accented downbeats. Each half-note chord should have firm pronunciation with a little decay instead of a driven sustain.

Example 9. Schubert, Movement 1 from *Symphony No. 9 (The Great)*, mm. 199-240.

The image shows a musical score for piano and voice. It consists of five systems of staves. The first system shows the piano introduction with a *pp* marking. The second system includes the vocal line with the lyrics "cre - scen". The third system continues the vocal line with "do - poco a poco". The fourth system shows the piano accompaniment with a *ff* marking. The fifth system shows the piano accompaniment with a *fff* marking.

Tenor trombones can stay delicate on any part where they are used, and build to a full, but tempered *fortissimo*. If the first part is played on tenor trombone, the tone should remain compact and light as if it were played on an alto trombone. The tone of the tenor trombone playing second part should match the style and size of the first part as best as possible, also aiming for a more compact, lighter quality. The *fortissimo* can be somewhat strong, but should still blend into the group texture. Tenor trombone playing the bass part can be the broadest sound, particularly at the end of the excerpt when chordal motion takes place, but the clarity needs to remain similar to the other two parts.

Bass trombones should avoid getting too loud, focusing instead on a body of compacted sound that avoids brightness. The player should also emphasize the clearest and cleanest of tone. Any ring of brightness in the sound will be sufficient from the upper trombone parts, especially if alto trombone is employed on the first part.

Wagner – Prelude to Act III from *Lohengrin*

Along with the trombones, the line from the excerpt shown in example 10 is in unison with horns, bassoons, and cellos. Tuba and trumpet are also in unison for parts of the same excerpt. The excerpt should be played very lively (as directed with the marked *Sehr lebhaft* at the beginning of the prelude). The tone can be proud and rich, but needs to balance with the other instruments. The written marcatos can be played with weighted emphasis. The triplet figures should be crisp, but flowing.

Example 10. Wagner, Prelude to Act III from *Lohengrin*, mm. 32-49.

Tenor trombones will take the lead in this section, adding color to the horns, since they already played the theme for one cycle. The tone should be clean, focused, and rich to complement the tone already set by the horns, bassoons, and cellos.

Bass trombones should aim for clarity with enough power to give extra body to the unison tone, as there will be time in the second excerpt (example 11) to be more prominent. This excerpt sits much higher in the range for bass trombone, so the tenor trombones should carry the weight of the line.

Starting at the triplets in measure 95 in example 11, the unison melody has now split into octaves. Tuba now plays for the entire excerpt, and double bass has been added for the lower octave as well. Trombones can play stronger now that they have been split into the upper and lower octaves.

Example 11. Wagner, Prelude to Act III from *Lohengrin*, mm. 88-116.



Tenor trombones should be similar to the previous excerpt, other than a possible small ritardando before the final long chord. They might also need to be stronger with the bass trombone playing down one octave, taking away some tone compared to the previous unison.

Bass trombone needs to make sure to provide more power for the lower octave, even being doubled with tuba and double basses. It will be easy to drag the triplets or be otherwise unclear if not striving for quick response and efficiency of volume.

Homorhythmic Excerpts for Trombone Section

In this section of homorhythmic excerpts, trombones can continue to emphasize similar styling among the three or four trombone parts, but it also becomes necessary to pay attention to the role of chord function. These particular excerpts are generally on the slower side of tempo, but that allows more time to practice listening to the function relevant to each chord tone. The same issues for matching style and dynamics occur regardless of tempo or complexity of rhythm.

Unlike the other two sections, focusing on homorhythmic excerpts allows expansion of a player's aural abilities. Not only is the trombonist attempting to play the different parts in the same style, but there is also understanding of chord function and the role of each part being developed. For excerpts of this type, save for classical-era classical repertoire, a trombonist should use the appropriate instrument for the part in question (generally tenor for the first and second parts, bass for the third part).

Brahms – *Symphony No. 4*

The fourth movement of this classical-era excerpt has a section that includes a slow permutation of the opening theme followed by the original theme, except that the last two measures begin a modulation into another permutation. Trombones start this repetitive motivic gesture with the bassoons, eventually adding horns, trumpets, and more woodwind instruments. One difficulty of this excerpt includes differentiating between the various soft dynamics written. The *ppp*, *pp*, and *p* dynamics are marked as well as a crescendo and some decrescendos. Another difficulty is finding balance in the slurred, yet staccato markings. In string notation, the bow would stop briefly and then resume in the same direction. They could be considered like tenuto markings, where there is enough articulation to give a stop-start quality, but enough length to facilitate the marked slurs. The following *f* and *ff* dynamics must have their own contrast as well, avoiding a harsh tone on any part. The *sforzando* of the excerpt's final measure should also use a weighted air (instead of being punched or stabbed) followed with the written decrescendo.

Example 12. Brahms, Movement 4 from *Symphony No. 4*, mm. 113-136.

The image shows a musical score for piano accompaniment, consisting of three systems of staves. The first system (mm. 113-116) has dynamics *pp*, *espress.*, and *ppp*. The second system (mm. 117-120) has dynamics *pp* and *p*. The third system (mm. 121-124) has dynamics *dim.*, *pp*, *f*, *ff*, and *sf*.

Tenor trombones could be used on all three parts, or the first part could also be played on alto trombone. On tenor, the first part should aim for focused, yet rounded timbre. The other parts can be played with more body of sound to support the upper voice. When playing the bass trombone part, one must avoid playing the E2 (likely using the valve in a lowered second position) so strongly that it jumps out of the orchestra's texture. When playing the bass trombone part, the tenor's loud quality could get unacceptably harsh more easily. The player should aim instead for a full, unforced sound.

Bass trombone will provide a bigger sound for the upper voices, but will be broader in tone and sound louder. The challenge here is to continue to play soft enough to stay in the texture at all times, yet provide context through all of the various soft dynamics. Exceptional control at extreme softs is a plus. The following loud dynamics do not need to be forced. An easy, full tone will be plenty.

Mahler – *Symphony No. 2*

One of the excerpts for a four-trombone section and tuba, from Gustav Mahler's *Symphony No. 2* (known also as *Resurrection*), exploits the beginning portion of an early Gregorian Chant (*Dies Irae*- meaning Day of Wrath) in the first part, supplemented with the other three trombones and tuba in the form of a chorale, building to a more positive arrival instead of remaining gloomy and dark. While parts one and two would be played on tenor, and part four would be played on bass, the third part could be played with either tenor or bass.

In the beginning, the first trombone has marcato while everyone else is marked with tenutos. In the energetic portion at measure 154, the marcato notes need more emphasis and building power, paying attention to the style given by the trumpets. The dynamics are specifically marked, and should be appropriately followed, preparing for a brilliant sound when approaching rehearsal 11 before the final decrescendo to piano.

Example 13. Mahler, Movement 5 from *Symphony No. 2*, mm. 142-162.

The image shows a musical score for four trombones and tuba, measures 142-162, rehearsal mark 10. The score is in 4/4 time and features a key signature of three flats (B-flat, E-flat, A-flat). The tempo/mood is marked "Choralmässig" and the tempo is "früher". The score is divided into four parts: Tb. 1, Tb. 2, Tb. 3, and Tb. 4. Each part is marked "G.P." (Grave) and "pp" (pianissimo). The first part (Tb. 1) is marked "marcato" and features a series of accented notes. The other three parts (Tb. 2, 3, 4) are marked "tenuto" and feature a series of sustained notes. The score includes dynamic markings, articulation marks, and a decrescendo hairpin.

Musical score for rehearsal 10, featuring four staves. The tempo is marked "Etwas energischer". The dynamics are marked *p* (piano) throughout. The score includes various musical notations such as accents (^) and slurs.

Musical score for rehearsal 11, featuring four staves. The tempo is marked "im Tempo" and "Wieder breit.". The dynamics are marked *f* (forte), *cresc.* (crescendo), *ffp* (fortissimo piano), *f*, *ff* (fortissimo), and *p* (piano). The score includes various musical notations such as accents (^), slurs, and a ritardando (*rit.*) marking.

Tenor trombones playing the first part need to emphasize the marcatos, even at *pp*. Second part needs to support the first with clarity but without extra emphasis. The second trombonist should, however, bring out the marcato quarter notes in the context of *pp* seven measures after rehearsal 10. Both first and second parts need to bring out color change with the B3 in the measure before rehearsal 11. Playing the third part, the dynamic must remain balanced so that it provides enough support to the upper voices, especially as the first part reaches its highest notes.

Bass trombones playing the third part need to provide the same support for the upper voices, but the larger size of instrument should be played softer while doing so. The fourth part

is mostly doubled (in octaves) by tuba, so it is important to balance with the tuba, yet be in support of the first part.

Tchaikovsky - *Symphony No. 6*

One of the softest markings for trombone in the standard repertoire is in the finale of Tchaikovsky's *Symphony No. 6*, starting at *piano* (with small crescendo-decrescendo nuances), and softening to *ppppp*. Other than a fading tam-tam, the only sounds being played are in this chorale by the three trombones and tuba. The primary concern here is control of all the soft dynamics, regardless of the instrument, and still accomplishing the necessary crescendos and decrescendos. The excerpt tempo also gets slower, so more control is needed to sustain the softest notes for longer.

Example 14. Tchaikovsky, Movement 4 from *Symphony No. 6*, mm. 137-149.

The image shows a musical score for four instruments: Trombone 1, Trombone 2, Trombone 3, and Tuba. The score is for measures 137-149 of Tchaikovsky's Symphony No. 6. The key signature is one sharp (F#) and the time signature is 3/4. The tempo is marked as [Andante (♩ = ca. 56)] and the performance instruction is **poco rallantando**. The dynamics range from *p* (piano) to *ppppp* (pianississimo). The score includes slurs and dynamic markings for each instrument, showing a gradual softening over the measures.

142 **quasi adagio**

The musical score consists of five staves. The top two staves are for trumpets, and the bottom three are for trombones and tuba. The key signature has two sharps (F# and C#). The tempo is marked 'quasi adagio'. The score begins at rehearsal mark 142. The first measure has a dynamic marking of *p*. The following four measures show a dynamic crescendo: *pp*, *ppp*, *pppp*, and *ppppp*. The fifth measure is a triplet of notes, indicated by a '3' above the staff. The final measure of the excerpt is also a triplet of notes, indicated by a '3' above the staff.

Tenor trombones sound softer, but play higher. With the bass trombone and tuba having more moving notes to cause more chord changes, one must be prepared to adjust for intonation from one note to the following repeated notes in parts one and two.

Bass trombone must have good control of softs as well, making sure not to overarticulate any chord changes. The final A-sharp-2 with the F-valve in lowered third position may be easier to play softer than without the valve in first position.

Verdi – *Nabucco Overture*

The Overture to Verdi's four-act opera, *Nabucco*, begins with a proud, yet distant low brass chorale from the beginning to rehearsal 1. While the fourth part is marked for *Cimbasso*, usually a tuba is used in its place, and bass trombone plays the third part. The rest of the orchestra joins at rehearsal 1, where most of the wind instruments play the same loud, rich, and articulate rhythm. Rehearsal 2 resumes with only the low brass for the remainder of the shown excerpt. The low brass should avoid sounding heavy with the distant fanfare, but maintain the marked *maestoso* quality of sound. The note lengths must match. Also, the sixteenth notes in the *ff* section could be true sixteenth notes, or stylized 32nd notes, depending on the conductor's

preference. In the second measure before Rehearsal 1 and the third measure after Rehearsal 2, the downbeat eighth note must be played its full length with resonance.

Example 15. Verdi, *Nabucco Overture*, mm. 1-16.

The image displays a musical score for four instruments: Trombone 1, Trombone 2, Trombone 3, and Cimbasso. The score is in 3/4 time, marked *Andante* with a tempo of approximately 66 beats per minute. The key signature is one sharp (F#). The score is divided into three systems. The first system (measures 1-6) is marked *p maestoso*. The second system (measures 7-12) is marked *ff* and includes a rehearsal mark '1' above measure 8. The third system (measures 13-16) is marked *p* and includes a rehearsal mark '2' above measure 13. The Cimbasso part features a rhythmic pattern of eighth notes in the first system and a more complex pattern in the second and third systems. The Trombone parts consist of sustained notes and rhythmic patterns.

Tenor trombones can play in the *piano* sections with a rounded, yet focused sound. The *ff* section can be brighter to add color with the full orchestra. The first part should remember to bring out the lone eighth note sequences against the quarter notes of the other parts in the soft sections.

Bass trombones can take it easy on volume more so than the tenors in the soft sections, but the *ff* section can have some brilliance. The player should also listen intently to the cimbasso line on all half notes to solidify the octaves and major thirds.

CHAPTER VIII

CONCLUSION

Any trombonist wishing to double tenor and bass trombone should remember the phrase, “Similar is simpler.” This phrase is the guidepost that will build greater ease of doubling when one is trying to select the most useful equipment, establish the best embouchure and practice habits, and find materials to more smoothly aid the development of the secondary instrument.

The majority of survey respondents indicated by their choice of mouthpieces that they use tenor and bass mouthpieces that are proportional in size. Despite a smaller number of responses that show mouthpiece choices contradicting this, the overall response for selecting helpful mouthpieces for doubling is to match them proportionally. Generally, a tenor mouthpiece with a large rim diameter similarly should be paired with a bass mouthpiece with a large diameter. Likewise, one should use proportionally small rim-diameters on each if the smaller rim diameter feels better on the embouchure. The same would be true if choosing mouthpieces with middle-sized rim diameters for both mouthpieces. With the mouthpieces similarly proportioned for their respective instrument, doubling technique should become simpler.

The specific tenor and bass trombones used vary greatly among the survey respondents, but in general, if they were not using the same brand of tenor and bass, they were most often using instruments with components having similar compositions. Their component parts of each trombone typically would use either the same alloy or alloys adjacent in composition. The tenor

and bass bells might both be yellow brass, or one may be gold brass while the other is red brass. Not often were many components of one trombone in red brass while most of the components of the other were in yellow brass. Ideally, a similar brand would allow the player to more easily double, as the craftsmanship would be similar, regardless of the size difference between tenor and bass. If the component alloys mostly match between the trombones, this would be the next best possibility for the ease of doubling, maintaining as much similarity as possible.

The embouchure shape and operation between tenor and bass trombone was the same for most of the respondents, except that the embouchure may a little larger for bass trombone. While some respondents believe in ignoring those ideas altogether, understanding the basics of how one's embouchure functions and allowing it to carry similarly between both tenor and bass trombone can be most useful. Understanding one's embouchure and maintaining it for both instruments can minimize any contrary efforts needed to operate either trombone.

The unavoidable aspect of doubling, according to the majority of survey respondents, is that the bass trombone will require at least a little more air than the tenor trombone when playing identical material. This is a result of a slightly more open aperture to blow broader air through the bass trombone. While this may be the norm, it should be possible to allow the larger physical size of the bass trombone to produce the broader size of sound while still maintaining a similar embouchure without unnecessarily opening the aperture too much. The size of the bass trombone may still take more air compared to tenor, but maintaining the most similar embouchure possible should help negate some of the issue. It may still be necessary to inhale more often to compensate for the extra air needed for a larger instrument.

In general, respondents said that the tenor trombone should maintain a warm sound with the allowance to get bright when necessary. They also said that the bass trombone should have a

warm, supportive sound with the ability to play powerfully. By playing with a similar embouchure and similar flow of air, the tenor and bass will both maintain a warm sound, and when both are played more powerfully, the smaller size of the tenor will allow more bright quality of tone, and the larger size of the bass will still allow more body of sound before it gets a bright, edgy tone.

The three basic strategies to help doublers practice both instruments daily are to begin with the primary instrument for familiarity, to begin on tenor trombone to reinforce good control of embouchure, and to begin on bass to improve breathing and overall strength in the embouchure. All three of these possibilities are useful, and could be applied differently from one day to the next. This would allow the player to target and develop the different physical aspects of playing, and on the days where the primary instrument is used, the bonus of familiarity would likely reduce one's personal stress level.

The majority of respondents mentioned using similar practice materials to aid in doubling tenor and bass trombone. Since tenor and bass trombonists generally require much of the same range for their repertoire, it makes sense to find material that encompasses that range, also making sure to include exercises that use the F-valve on both instruments and promote the use of the bass trombone's second valve. With etudes that target the different fundamental aspects of trombone playing, regardless of the octave in which they are practiced, similar materials allow the trombonist to make more mental, aural, and physical connections between the tenor and bass trombones.

Only a minority of respondents utilized solos to aid in their doubling development. However, finding solo material that can be played by both tenor and bass trombone, much like the practice materials, gives the player another route to build one's technique on both horns.

Repertoire that is written with either tenor or bass trombone in mind would be particularly advantageous. If a piece is meant for a specific instrument, then one should use the appropriate trombone in performance, but any of these materials can be practiced on either horn. If the music is specifically written for either tenor or bass trombone, or if the music has parts available for each, then such music is ideal to learn and develop on both instruments.

Similar to the use of solos for doubling, only a minority utilized orchestral excerpts to aid in their doubling between tenor and bass trombone. By finding excerpts from the standard orchestral repertoire, trombonists have another way to facilitate their development of the secondary instrument. Finding similar material is helpful for quicker improvement of one's doubling abilities. Using excerpts that could be played by both tenor and bass trombone is the most useful. One can exploit classical-era bass trombone excerpts that could be played by either instrument. Using excerpts that require the bass and tenor trombones to play in unison is another excellent transition method. Excerpts that are homorhythmic in nature also work well, such as chorales, because the musician then begins to listen to the role of each particular instrument within the excerpts.

If a trombonist is going to double between tenor and bass trombone, it is important to minimize the extra work necessary. To help achieve that goal, one should make sure to work for as many similarities as possible for the quickest, simplest progress.

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APPENDIX: SURVEY QUESTIONS

The following questions and answer options were used through Qualtrics survey tools available at University of Colorado Boulder. The online survey described the conditions of the survey and asked for consent before proceeding to these questions. The format of these questions is presented to facilitate the non-interactive format of this medium compared to the online survey. Informed consent was given by all participants prior to seeing any survey questions.

1. What is your name?
 - a. (First and last name)
 - b. I wish to remain anonymous.

2. What is your primary musical occupation?
 - a. (Primary Occupation)
 - b. I wish to remain anonymous.

3. Which is your PRIMARY instrument?
 - a. Tenor Trombone
 - b. Bass Trombone

4. How many years have you been playing your PRIMARY instrument?
 - a. (Insert number of years)

5. For what obligations do you play your PRIMARY instrument? Mark all that apply.
 - a. Orchestral (Classical)
 - b. Jazz (Big Band, Combos, etc)
 - c. Chamber Ensembles
 - d. Commercial (Popular Music, Movies, etc)
 - e. Other – Please Describe
 - i. [brief description]

6. How many years have you been playing your SECONDARY instrument?
 - a. (Insert number of years)

7. How often do you perform with your SECONDARY instrument?
 - a. Rarely (about once every three months or less)
 - b. Sometimes (about once every 1-2 months)
 - c. Often (about twice per month, or nearly as much as the primary instrument)
 - d. Regularly (just as often as the primary instrument)

8. For what obligations do you play your SECONDARY instrument? Mark all that apply.
 - a. Orchestral (Classical)
 - b. Jazz (Big Band, Combos, etc)
 - c. Chamber Ensembles
 - d. Commercial (Popular Music, Movie Soundtracks, etc)
 - e. Other – Please Describe
 - i. [description]

The following questions (9-13) are about your EQUIPMENT SELECTION.

9. Please describe the configuration of the TENOR TROMBONE that you MOST COMMONLY use. In this description, please indicate the brand and model (indicate any custom design and component model numbers if applicable). With as much detail as you feel is appropriate, include an overall description of the instrument. Such details could include, but are not limited to: bore size, slide weight and alloy, leadpipe size and color (if interchangeable), type and configuration of valve (or no valve), bell size and color, and any customizations.
 - a. [description]
10. Please describe the configuration of the BASS TROMBONE that you MOST COMMONLY use. In this description, please indicate the brand and model (indicate custom design and component model numbers if necessary). With as much detail as you feel is appropriate, include an overall description of the instrument. Such details could include, but are not limited to: bore size, slide weight and color, leadpipe size and color (if interchangeable), type and configuration of valve (or no valve), bell size and color, and any customizations.
 - a. [description]
11. Please describe the configuration of the TENOR MOUTHPIECE that you MOST COMMONLY use. In this description, please indicate the brand and model (indicate custom design and component model numbers if necessary). With as much detail as you feel is appropriate, include an overall description of the mouthpiece. Such details would include, but are not limited to: weight, type of plating (such as silver or gold), cup shape and depth, throat width, rim bite, and backbore opening.
 - a. [description]
12. Please describe the configuration of the BASS MOUTHPIECE that you MOST COMMONLY use. In this description, please indicate the brand and model (indicate custom design and component model numbers if necessary). With as much detail as you feel is appropriate, include an overall description of the mouthpiece. Such details would include, but are not limited to: weight, type of plating (such as silver or gold), cup shape and depth, throat width, rim bite, and backbore opening.
 - a. [description]

13. When you selected your SECONDARY instrument and mouthpiece, did you have any different thought processes or considerations compared to when you selected your PRIMARY instrument? If so, please explain. If not, just say “No.”
- [response]

The following questions (14-19) deal with EMBOUCHURE, AIR, SOUND, and TONE

14. Is your embouchure different between your primary and secondary horns? If so, please say “yes” and explain. This may include thoughts on issues like formation of the lips and other structures, mouthpiece placement and anchoring (if applicable). If not, please say “no.” Whether for both or for each, please explain your embouchure method(s).
- [short response]
15. When playing through the entire range of BOTH trombones, do you manipulate/shift your embouchure similarly?
- Yes
 - No
16. In comparison to any given any note or passage played on TENOR, how much air overall do you feel you need to play the same note or passage BASS?
- Much less air
 - Less air
 - A similar amount of air
 - More air
 - Much more air
17. What are the similarities and differences of your air flow between TENOR and BASS?
- [short response]
18. How would you describe your IDEAL TENOR sound and tone?
- [short response]
19. How would you describe your IDEAL BASS sound and tone?
- [short response]

The following questions (20-36) will focus on WARMUP, PRACTICE, and PERFORMANCE

20. Compared to your PRIMARY, how often do you practice your SECONDARY instrument?
- Occasionally
 - About half as often
 - Just as often

21. If you perform BOTH trombones on a single event, such as a concert or recital, do you have specific strategies to do so successfully? If so, please describe such strategies. If not, leave select “b.”
- [possible short response]
 - I do not perform with both horns on a single event.
22. Do you ever practice BOTH trombones in a single session or keep them separate? Identify which. If you practice both in a single session, please explain how you incorporate them within that session. If you keep them separate, please provide your thoughts and reasons for doing so.
- [answer/explanation]
23. On days where you practice BOTH trombones, but not in the same session, do you have a specific plan or strategy to your practice? One example of this may include which horn you practice for a specific session. Feel free to use as much detail that you feel is appropriate. If you do not have a particular plan, leave blank. If you always practice both horns in a single session, select “b.” If you only practice one horn on a particular day, select “c.”
- [response]
 - I always practice both horns in each session.
 - I only practice one trombone on a particular day.
24. Do you have any mental techniques or strategies to help you improve or maintain your doubling abilities? If so, please explain and reference useful resources. If not, leave blank. If this question does not pertain to you, select “b.”
- [possible short response]
 - I don’t use any specific mental techniques or strategies at all.
25. Do you have any breathing and air control routines or strategies to help improve or maintain your doubling abilities? If so, please explain and reference useful resources. If not, leave blank. If this question does not pertain to you, select “b.”
- [possible short response]
 - I don’t use breathing exercises at all.
26. Do you perform similar free-buzzing exercises (lips-only, no mouthpiece or other support) that help you double? Please specify “Yes” or “no.” If you have specific free-buzzing strategies that help you double, please also explain those strategies. If this question does not pertain to you, select “b.”
- [Yes/No; possible short response]
 - I don’t do free-buzzing exercises at all.

27. Do you perform similar mouthpiece/visualizer buzzing exercises on BOTH mouthpieces? Please specify “Yes” or “no.” If you have specific buzzing strategies or books that help you double, please also explain those strategies and possible etude books you use. If this question does not pertain to you, select “b.”
- [Yes/No; possible short response]
 - I don’t do mouthpiece buzzing exercises at all.
28. Do you work similar lip slur/flexibility exercises on BOTH horns? Please specify “Yes” or “no.” If you have specific lip slur strategies or books that help you double, please also explain those strategies and possible etude books you use. If this question does not pertain to you, select “b.”
- [Yes/No; possible short response]
 - I don’t do lip slur/flexibility exercises at all.
29. Do you use similar articulation exercises on BOTH horns? Please specify “Yes” or “no.” If you have specific articulation strategies or books that help you double, please also explain those strategies and possible etude books you use. If this question does not pertain to you, select “b.”
- [Yes/No; possible short response]
 - I don’t use articulation exercises at all.
30. Do you perform any long tone exercises on BOTH horns? Please specify “Yes” or “no.” If you have specific exercises that help you double, please also explain those, as well as possible etude books you use. If this question does not pertain to you, select “b.”
- [Yes/No; possible short response]
 - I don’t perform long tone exercises at all.
31. Do you ever overlap lyrical etudes and exercises (Tenor material on Bass and vice versa)? If yes, please identify useful lyrical etudes and exercises. If not, leave blank. If this question does not pertain to you, select “b.”
- [possible short response]
 - I don’t play lyrical etudes at all.
32. Do you ever overlap technical etudes and exercises (Tenor material on Bass or vice versa)? If yes, please identify useful technical etudes and exercises. If not, leave blank. If this question does not pertain to you, select “b.”
- [possible short response]
 - I don’t play technical etudes at all.
33. Do you ever overlap solos on both horns? If so, please identify useful solos. If not, leave blank. If this question does not pertain to you, select “b.”
- [possible short response]
 - I don’t play solos at all.

34. Do you ever overlap orchestral excerpts on both horns? If so, please identify useful excerpts. If not, leave blank. If this question does not pertain to you, select “b.”
- [possible short response]
 - I don’t play orchestral excerpts at all.
35. Do you ever overlap jazz tunes/exercises on both horns? If so, please identify useful jazz tunes/exercises. If not, leave blank. If this question does not pertain to you, select “b.”
- [possible short response]
 - I don’t play jazz tunes/exercises at all.
36. Do you record yourself on both horns to assist in your doubling abilities?
- Yes
 - No
 - I do not use recording devices at all.

The remaining question (37) is one more chance to explain or add any other thoughts or suggestions that you find relevant to doubling Tenor and Bass Trombone that were not covered.

37. In this box, please feel free to provide any doubling advice not otherwise addressed. If you have nothing more to add, leave blank.
- [essay response]