WRITING FOR BRASS

OVERVIEW & PURPOSE

Tips and tricks for maximizing the effectiveness of your brass section, be it a solo instrument, jazz, classical, pop or more!

HISTORY/ GENERAL INFO

1. Brass instruments were originally outdoor instruments, used for military functions, hunting, fanfares and civic announcements
2. They were limited in range and scope until the invention of modern mechanisms (valves, etc) that made it easier to assimilate into an orchestra.
3. Brass produces sound by buzzing. Vibration in the lips is then amplified and augmented by the horn. Lots of air required. Allow space for breathing and rest if possible.
4. Multiple types of tongueing possible on all brass instruments. Single, double, triple. Brass instruments excel at Sforzando and Forte-piano attacks.
5. Slur markings are used to indicate no tongue or breaks. All notes in a slur will be performed with one breath, with no re-articulation.
6. Flutter tongue, growls, glissandi, lip trills, available to all brass instruments.
7. Certain brass instruments are transposed. This is to maximize the quality of sound the instrument produces when the tubing is lengthened or shortened to said pitch. Trumpets in Bb, Horn in F, Tuba in F are standard variants.
8. Brass is typically divided into two camps:
    - Horns. Conical bore. Funnel shaped mouthpiece. Rounder sound.
    - Trumpet, Trombone, Tuba. Cylindrical bore. Cup shaped mouthpiece. Brighter sound.

Brass Families

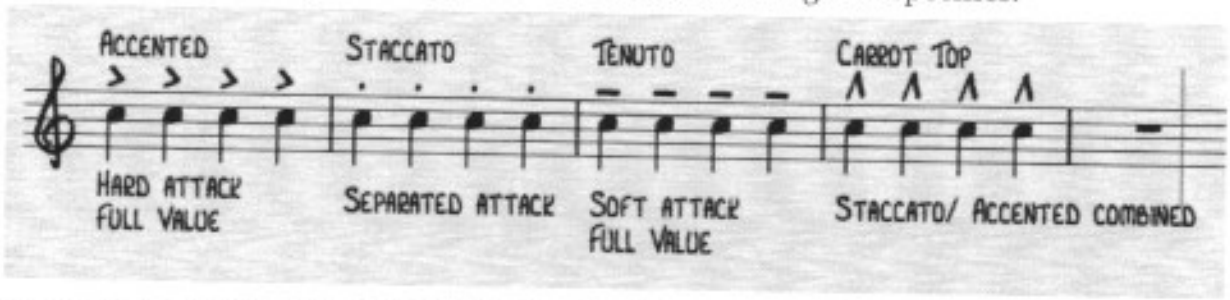
1. HORN. Improperly referred to as French Horn. Two types of horn: natural horn, and valved horn. Horn is a conical bore instrument. You will almost ALWAYS write for valved horn. *F Horn transposes down a natural 5th.* Horn is an excellent BLENDER instrument. Its mellow tone makes it an excellent pair with winds and strings. It is even included in wind quintet music, and is the only brass instrument with that distinction.
2. TRUMPET. Soprano member of the brass family. It excels at both soft and loud playing throughout the majority of its register. Capable of going extremely high, particularly in jazz and pop music. Originally thought of as a percussion instrument back before valves were invented. Trumpet often fulfils this role in modern music as well. *Bb trumpet is the most common type.* Flugelhorn and cornet are also pitched in Bb, and are conical bore instrument, ideal for solo and softer playing. C trumpet is used orchestrally and for solo pieces. The higher the transposition (C, D, Eb, F, Piccolo) the brighter the sound quality.
3. TROMBONE. Ancestor of the Sacbut, the trombone is extremely versatile. Cylindrical bore. Tenor trombone is the most commonly used, *and does not transpose.* Because of its slide, trombone is one of the most in tune instruments, potentially, provided the player's skill level is high enough. Tenor trombone can have a F trigger that can extend their range downward. Bass trombone is used orchestrally and is a common member of the jazz band. It always has an F trigger.
4. TUBA. Bass instrument of the brass family. Conical bore instrument. Warm tone quality makes it an excellent pairing with trombones for low register stuff, but the tuba is also capable of higher, more soloistic passages. The Euphonium/ Baritone is the high voice of the tuba family, and is primarily used for solos and faster passages. Euphonium/ Baritone is most commonly used in Wind Band music, as well as Brass Choirs of varying size. Euphonium has the same range as a Bass Trombone. Baritone has the same range as a Tenor Trombone. *Standard variants of tubas are F, CC, BBb.* Tuba in F is the most common.

FUNCTIONS OF THE BRASS FAMILY (ORCHESTRA AND WIND BAND)

1. Homophonic Unit (either alone or combine with other voices in the group.) Example: 4 Trombones play a passage, each with the same rhythm. Top voice has the melody and the other three support the harmony structure underneath. *(Picture at an Exhibition)*
2. Melody Instrument. *(Mahler V)*
3. Builder of orchestral climaxes. Brass instruments are the BIG GUNS of the orchestra. Very easy to build anticipation with brass entrances. *(Indiana Jones Temple Escape)*
4. Provider of colors and effects. Mutes, glissandos, half-valve, flutter tongue, growl, etc. *(Play examples, then Flight of the Bumblebee)*

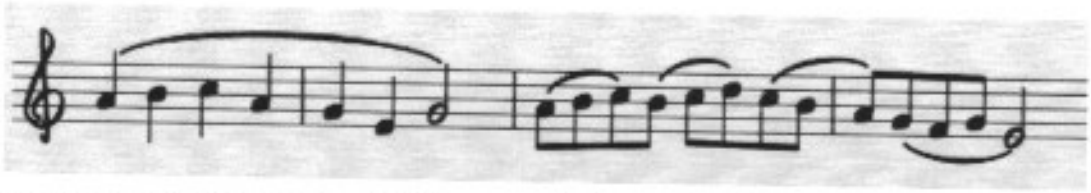
ARTICULATIONS

1. Any articulation can be used. Staccato, tenuto, accented attacks, sFz, fp. Slurred passages are very effective, particularly in smooth, mellow, melodic passages. Brass can articulate softly, or harshly. Not commonly notated by the composer, but dictated by the style of the piece. Use accent markings for specifics.

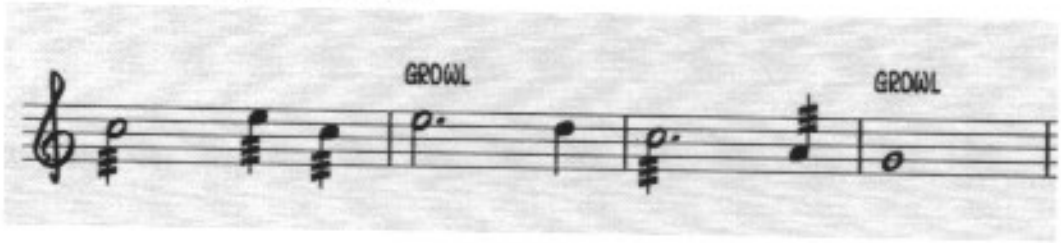


2. Double tongue, triple tongue used to rearticulate passages faster than you can single tongue. Don't notate which tongue type to use. The performer will decide that based on the needs of the piece.

3. Slurred notes are played with one breath, and every note except the first is unarticulated.

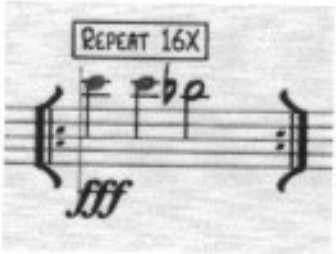


4. Effects (diot, falls, shakes, flutter, growl) See articulation sheet. Flutter tongue is notated by adding *tremolo markings*. Simple add "growl" above the music when the technique is needed.



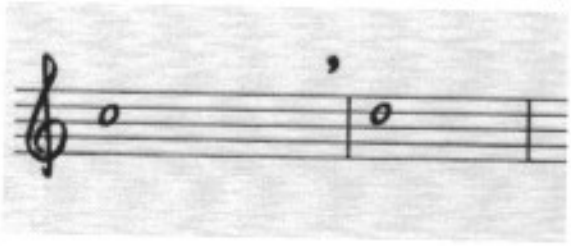
SCORING "SUGGESTIONS" for different styles of playing

1. Score Order from highest to lowest. Horn, trumpet, trombone, euphonium/baritone, tuba.
2. Ear Fatigue! The human ear get get tired out by certain noises. Brass instruments are one of the most fatiguing. Strings are the least. If possible, score the brass strategically. Don't have them play through the entire piece, but save their entrances for when they will have the most power. This makes the listener more able to appreciate the ebb and flow of the composition.
3. Endurance. Playing a brass instrument is demanding! Don't be that guy that has trumpet 2 play the same background figure the entire piece, because he will hate you. Give the brass frequent, short rests when possible. It only takes a few seconds for the blood to come back to your lips and then you're good to go again. If a passage is particularly high, try to give the lead voices a break beforehand.

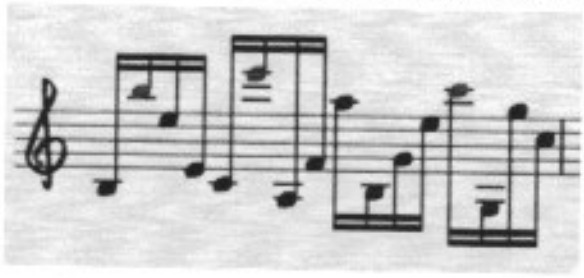


4. ALLOW BRASS INSTRUMENTS SPACE TO BREATH! If you're writing music with

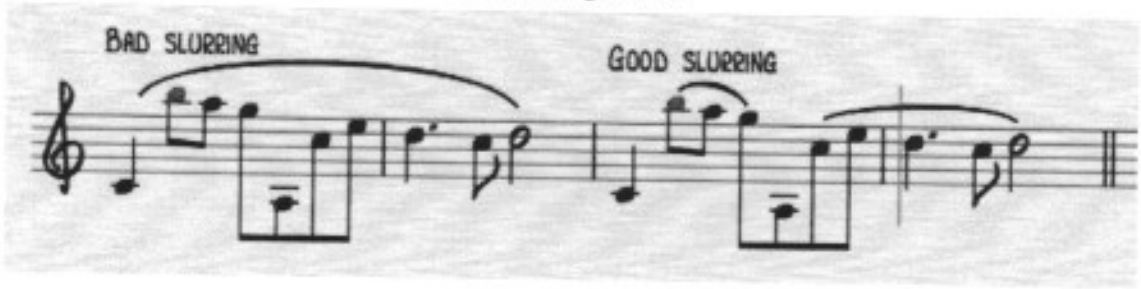
MIDI or you are not familiar with wind instruments, remember that we need air to make the sound. 20 tied whole notes in a row looks great on a score, but eventually the brass players will have to break up the sound to take a breath. Breath markings are notated by putting a comma above the stave.



5. Intervals! Simple rule to follow is this: the larger the interval leap, the more demanding it is to perform accurately. Professional players usually don't have to worry about this very often, but students or college level groups can be wrecked by even a 5th.

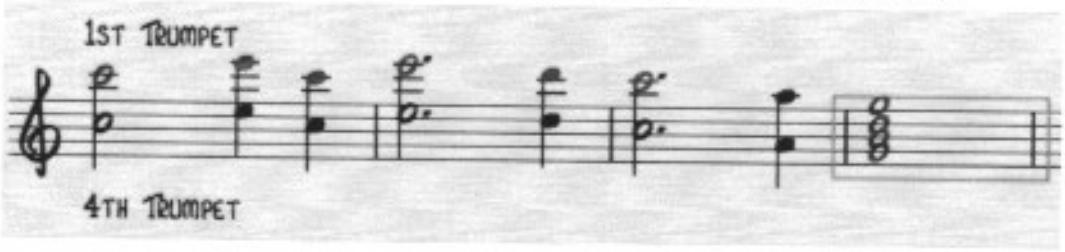


6. Slurred intervals are the most demanding of all.



7. Brass instruments are strong when used as a section, or when blended with other instruments. Don't be afraid to experiment. There are no bad combinations, but remember not to overuse one voice if you have others at your disposal.
8.
9. BRASS QUINTET. Traditionally made up of Trumpet 1, Trumpet 2, Horn, Trombone, Tuba.
10. JAZZ BAND. Typically made up of 4 trumpets, 3 tenor trombones, 1 bass trombones. Trombones are primarily used to outline Root, 3rd, 5th, 7th when used as a section. Trumpets are used to outline upper chord structures. This is to avoid making the band sound muddy. The lead trombone and 4th trumpet

voices will often be in the same register. Doubling is a good idea. Use the 4th trumpet to enforce difficult lead trumpet passages, an octave below!



11. WIND BAND. Cornets are used to play "string" lines with more melody and technical facility, trumpets are often used in tandem with percussion. Baritone/ Euphonium is common, especially as a melody instrument. Trombones, horns and tuba are treated the same as they would be in an orchestra.

MUTES DEMONSTRATION

1. Con sord (sordino) = with mute. Senza sord = without mute.
2. Straight
3. Cup
4. Harmon
5. Bucket
6. Plunger
7. Hat

FINAL THOUGHTS

Make your arrangements fun for the performers!

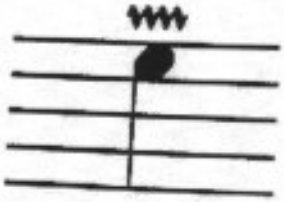
Don't leave instruments out during the climax of the piece.

Try to give each player something fun to do!

If at all possible, find out who your performers are going to be and what their abilities are so you can tailor your music specifically to their strengths.

ARTICULATIONS

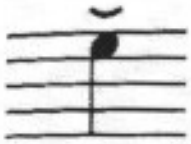
The following articulations and devices provide a variety of effects:



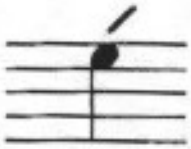
Shake
Similar to a lip trill but faster and with less control (without the use of the valves).

Wide Lip Trill
A slower lip trill on a larger interval.

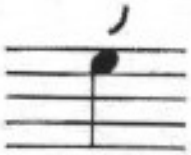
Flip
The note is sounded, raised and lowered to the next note.



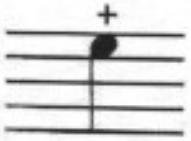
Bend
The note is sounded, lowered and raised to the original pitch.



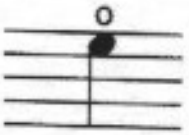
Smear
The note is approached from below, reaching the correct pitch prior to sounding the next note.



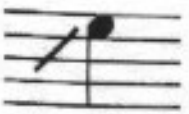
Doit
The note is sounded followed by an upward glissando ranging from one to five steps. (Usually a 1/2 valve for brass.)



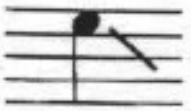
Du
A tone muffled by a plunger, hat or hand over the bell.



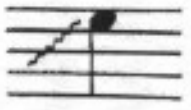
Wah
A tone unmuffled by the release of a plunger, hat or hand over the bell.



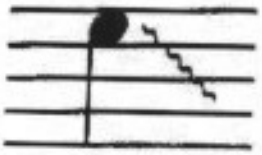
Rip (Gliss Up)
Slide into the note from below. No individual notes are heard.



Fall Off (Gliss Down)
The reverse of the Gliss Up.



Lift
The note is approached chromatically or diatonically.

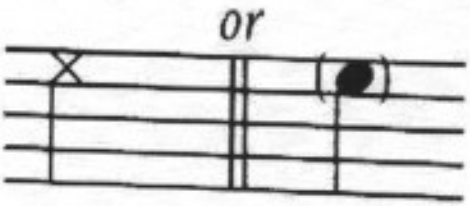


Spill

The reverse of the Lift.

Plop

Before the note is sounded it is approached by a rapid descending scale.



Indefinite Sound or Ghost Note

An undefined or indeterminate pitch.

Turn (Appogiatura)

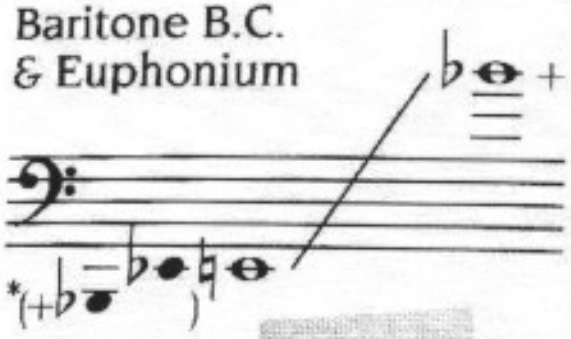
The first note rises up a step then back down before descending to the next note.

Baritone and Euphonium, in B♭

WRITTEN RANGE

Sounds as written

Baritone B.C.
& Euphonium



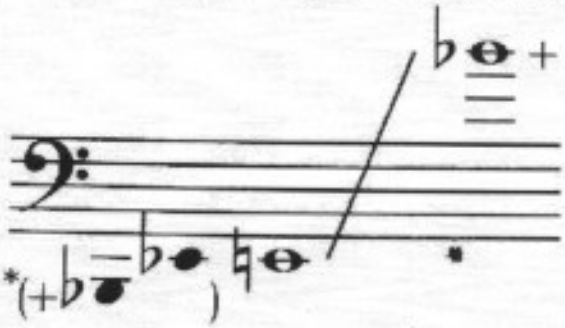
Practical (Written)

dynamic contour

Baritone T.C. (Written)

SOUNDING RANGE

Sounds a major 9th lower



*Possible on instruments with four valves.

GENERAL CHARACTERISTICS

- The baritone and euphonium are so similar in appearance and in range that they are often **used**

interchangeably. At times they may be labeled **tenor tuba** and can substitute for high tuba parts.

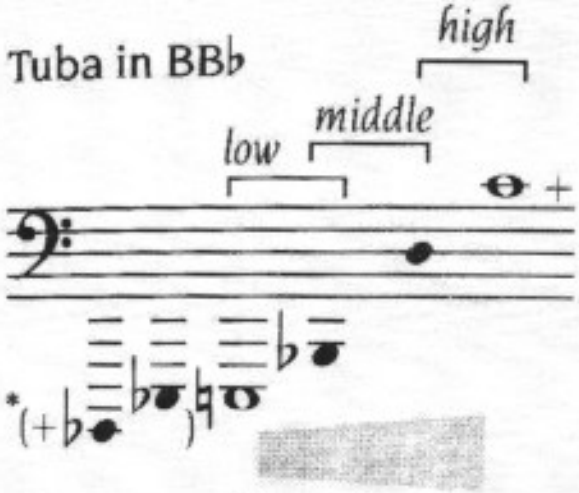
- The tone quality of these instruments is **smooth and mellow,** with the euphonium possessing a slightly broader and darker sound (due to its larger bore).
- Used regularly in bands, they are **capable of great expression** and are employed **primarily as solo** voices. They are rarely called for in orchestral music.
- In comparison to the tuba, they are **more agile, technically versatile and require less air.**
- Since the **fingering patterns** of the baritone are the same as the **trumpet** or **cornet,** the baritone is sometimes written in treble clef (baritone T.C.). The standard practice, however, is to notate the baritone in bass clef (baritone B.C.).
- The **harmonic series** is identical to that of the trumpet in B♭, but an octave lower.
- The **combined use** of the **baritone** or **euphonium** and **tuba** is commonly heard in bands, brass sextets and brass choirs, and may double the tuba at the octave or play an independent tenor voice.

Tubas in BB♭, in CC and in F

WRITTEN RANGE

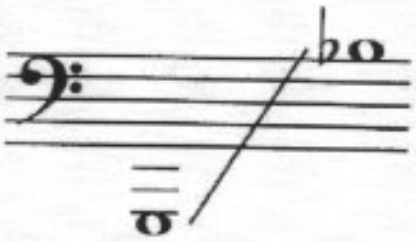
Sounds as written

Tuba in BB♭

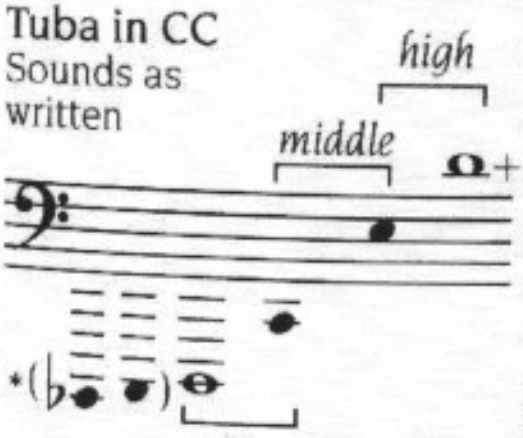


dynamic contour

Practical (Written)

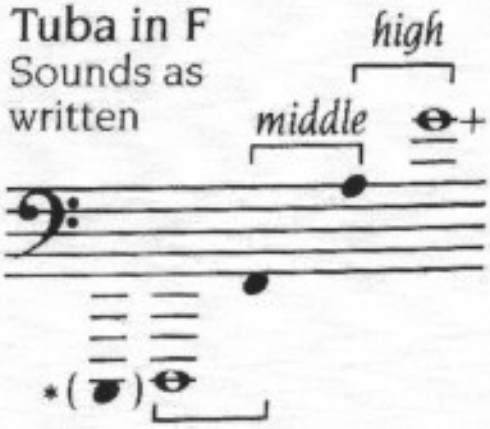


Tuba in CC
Sounds as written



dynamic contour

Tuba in F
Sounds as written



dynamic contour

*These notes are available on 4-valve instruments only.

There is also a tuba in E♭ that is used in brass bands.

TONAL AND DYNAMIC QUALITIES

Low Register

The low register is **dark, has less fluidity** and requires the **most breath control.** Although there is **less agility,** the instrument possesses **good pitch focus.** Below low F, the notes are better avoided altogether.

Middle Register

This register is most successful for the tuba, producing a timbre that is **velvety, smooth and mellow.** There is **maximum control** of the instrument without the strain inherent in the high register. In comparison to the trombone playing in this register, a tuba would possess a **rounder, less cutting and spreading tone.**

High Register

With excellent penetration, the tuba possesses a **horn-like, round** tone quality at a soft-to-medium dynamic range. At louder dynamics it is **powerful, robust and exciting.**

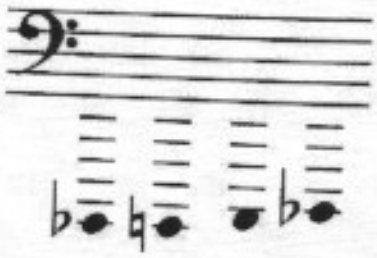
GENERAL CHARACTERISTICS

- The **instrument choice is made by the player** and is determined by personal preference, the range of the part and/or which instrument will provide better fingerings.
- The tuba in F is **subtly brighter** in tone quality than the tuba in CC.
- Most orchestral tubas have four or more valves whereas student models (including sousaphones) are usually made with three. The **lack of the fourth valve** reduces the range and creates intonation problems in the lower register.
- Since the **middle register** of the instrument is the most effective, its **primary function** is that of a **bass instrument.** Its use in this range can strengthen low brass and woodwinds.
- The instrument's **ability to blend** with other instruments is excellent.
- The tuba is much more **flexible and agile** than is commonly thought. In the hands of a good performer, it is capable of executing 16th-note runs, wide skips and trills (if employed in the

upper register only). **Double and triple tonguings** are possible, as well as rarely used flutter tonguings.

TECHNICAL CONSIDERATIONS

- Because of its **heavier quality,** care should be taken to ensure that the tuba does not overpower other brass instruments.
- **Leger lines** should always be used, not ***8va bassa.*** The performer should never be asked to transpose down an octave.
- The following pitches are possible on professional tubas but with very **insecure results.** While not all performers can produce them, if used, they should be approached in a step-wise fashion:



- The **fundamental** is obtainable on the instrument but is best-used for brief, sustained tones.
- **Muting** is rarely used. When called upon, however, the straight mute is the one generally used.

SCORING CONSIDERATIONS

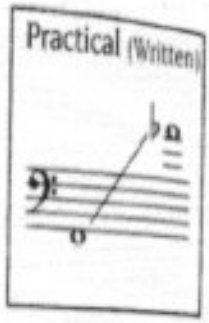
- As the bass voice in a mixed ensemble, the characteristically diffused sound gives the ensemble an **overall smoothness,** unlike the more biting quality that can result when using a bass trombone or baritone saxophone.
- An important consideration when writing for tuba is the **large amount of breath required.** In the low register, especially at a loud dynamic, a note can only be sustained for a short period of time. Parts for the tuba should include sufficient rests to **allow ample opportunities for the player to breathe.**
- The instrument is **only occasionally used** in a solo context.
- When scoring for multiple tubas, **avoid intervals of less than a 5th or 6th** when used in **chord structures.** Except as a special effect, the thick sound resulting from small intervals is ineffective.
- The tuba is effective in modern jazz orchestration, old-time 1920s music or Dixieland-style music.

TROMBONE

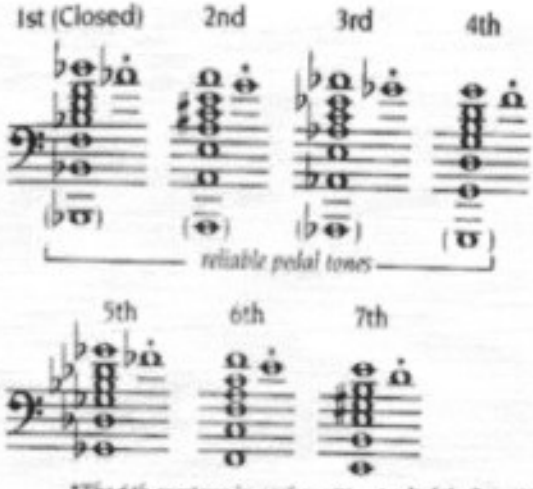
Tenor Trombone

WRITEN RANGE
Sounds as written

*Usable pedal tones (including F attachment)



The trombone *may be written in either bass or tenor clef*



*The 6th overtone in each position is slightly flat. The slide may be used to adjust the pitch, except in 1st position.

ABOUT THE INSTRUMENT

The trombone uses the **overtone series** of the basic pipe to produce pitch.

The Slide

- Movement of a **slide** extends the length of the basic pipe, **creating more pitches** than those produced from the overtone series.
- There are **seven slide positions**, each capable of producing a complete **harmonic series.**

The seven positions, starting with the 1st position:

- Movement between the seven slide positions provides **alternative positions** for a given pitch.
- The **distance between positions** determines the **technical difficulty**—not the distance between pitches.

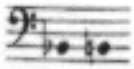
➤ The **upper portion** of the range is **more agile** due to the increased number of alternate

positions. **Solo passages** are best executed in the upper range:

➤ Because the **lower portion** of the range requires larger slide movement and fewer alternate positions, it is **more technically difficult.**

• **Avoid awkward slide position changes.**

For instance, the following example requires a position change from 1st position to 7th position (from closed to fully open). This change is extremely impractical:



1st 7th

• **Pitch** can be corrected easily with slight movements of the slide.

• Only the **pedal tones in the first four positions** are recommended. The **pedal tone in the 1st position is the the easiest and most widely used.** The pedal tones in the 2nd, 3rd and 4th positions are usable, yet tend to be progressively unstable and poor in quality.

The F Attachment

Some tenor trombones have an F attachment (with a trigger) operated by the left thumb.

• This valve **lowers the fundamental pitch** of the instrument **down a perfect fourth.**

• When utilized, a **complete set of new harmonics** is possible in the various slide positions.

• Because the F attachment **eliminates certain awkward changes** of position, technical problems are simplified.

TONAL QUALITIES

• The **low register** is full, yet dark and somewhat 'tubby'. The quality of the low E is slightly poor and should be avoided in exposed passages. This range is not quite as strong as the upper range.

• The **middle to upper registers** are very sonorous, rich and full, becoming progressively more brilliant in the upper register.

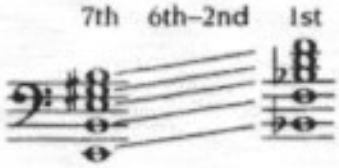
- At **softer dynamic levels,** the tone quality is horn-like and full.
- At **louder dynamic levels,** the timbre becomes bright, massive and strong.

TECHNICAL CONSIDERATIONS

- Double, triple and flutter **tonguings** are all easily possible. Rapidly repeated notes and quick, short musical figures are not problematic.
- **Lip trills** are produced by the lips on adjacent harmonics a whole or half step apart.
- **Trigger trills** (valve trills) between some notes a whole or half step apart are possible by rapidly depressing and releasing the F attachment while the slide remains stationary.
- **Tongued legato** is utilized to avoid glissandos when changing slide positions. The air is stopped inperceptively between notes. A **true legato** is achieved only between two adjacent harmonics in the same series. If a slide position change is required to slur two notes, skillful coordination of the tongue and slide change will be required.

SPECIAL EFFECTS

- Like the horn, an **arpeggiated glissando** over the **entire harmonic series** in a single position is possible.
- **Glissandos** require a movement from one slide position to another using the **same harmonic number of the overtone series:**



As the example above shows, glissandos are only possible up to the ***interval of a tritone.***

MUTING

The following mutes and muting techniques may be used:

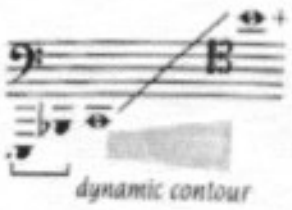
- Cup Mute
- Harmon Mute (no stem)
- Straight Mute
- Solotone
- Hand over Bell
- Plunger
- Hat

SCORING TIPS

- The trombone is primarily considered the **tenor voice** in ensemble writing.
- Power and presence increases when **doubled on a unison.**
- The usual scoring for **jazz bands** is three trombones and one bass trombone.
- Elementary, high school and jazz bands require the trombone to be written in **bass clef** only.
- Since the dynamic range from very soft to very loud is consistent throughout its range, **balance with most instruments** does not present a problem.

Bass Trombone

WRITTEN RANGE
Sounds as written



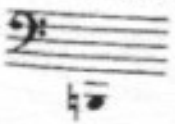
*Usable pedal tones (including F attachment)

Practical (Written)

The bass trombone *may be written in either bass or tenor clef*

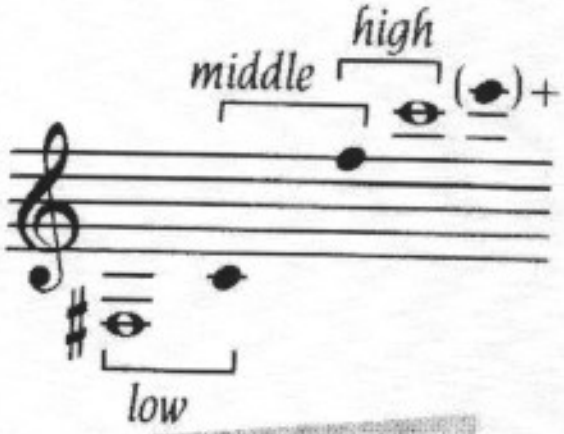
ABOUT THE INSTRUMENT

- The bass trombone has the same tubing length as a tenor trombone (with an F attachment), giving it the **same range** and **technical capabilities as the tenor trombone.**
- Bass trombones are equipped with an **F valve/attachment** and usually another in E. The use of the E attachment enables the bass trombonist to play a low B-natural:



Trumpets in B♭ and in C

WRITTEN RANGE

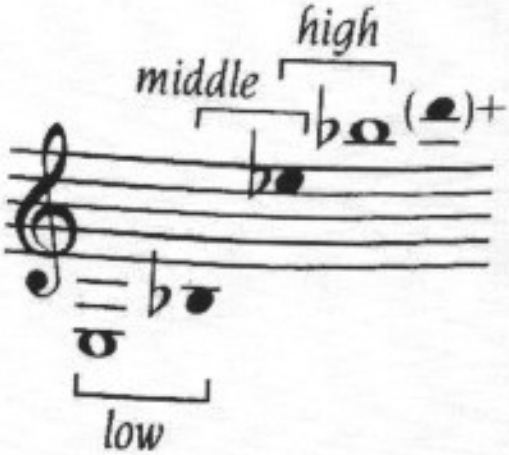


dynamic contour

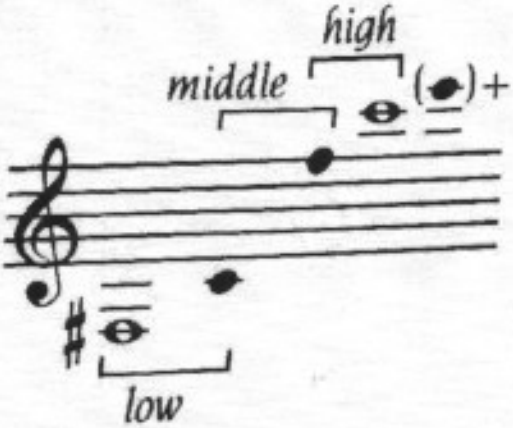
Practical (Written)

SOUNDING RANGE

Trumpet in B♭ sounds a major 2nd lower



Trumpet in C sounds as written



ABOUT THE INSTRUMENT

The trumpet uses the **overtone series** to produce pitch through the changing of **three valves.**

GENERAL CHARACTERISTICS

The trumpets in B♭ and in C are essentially identical with a few exceptions:

- The trumpet in C is generally **brighter** and **more brilliant** than the trumpet in B♭.
- Each trumpet differs in its **solutions to fingering problems** as well as a differing **response to certain pitches.**
- A definite benefit of using the **trumpet in C** is that it is a **non-transposing instrument.**
- The trumpet in B♭ is the standard instrument in the **concert band** and **jazz band** yet the brighter trumpet in C is more frequently used in **orchestras.**
- The **choice to use** either trumpet in B♭ or in C is generally made by the performer.

TONAL QUALITIES

Low Register

- In this register the tone is **darker** than the middle register, yet remains full. These notes tend to **project poorly** and are prone to **intonation problems.**

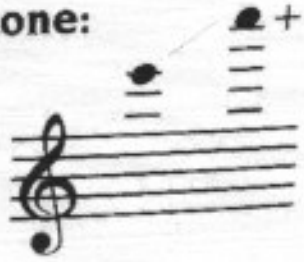
Middle Register

- This is the most widely used register. Here the tone quality is **brighter** and the instrument has **better projection** than in the lower register. **Dynamic control** and **intonation** are excellent.

High Register

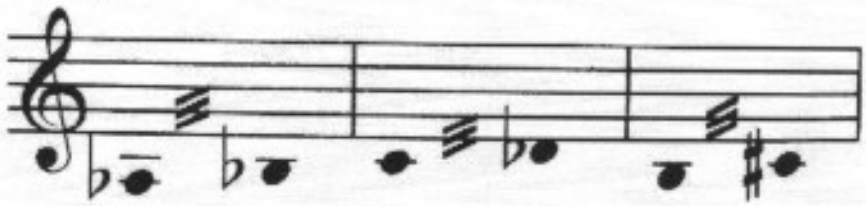
- Here the tone is **brilliant** and **penetrating** but is more difficult to produce softly. Notes in this register are best approached from below.
- An **extended upper register** is available to very strong players, with **difficulties in control.** The difficulty in producing such notes is often at the expense of good tone quality and the result is a very **loud, pinched** and **shrill tone:**

Written:



- Three types of **vibrato** are possible: diaphragmatic, jaw and mechanical. They are usually left to the **discretion of the performer** and may depend on the style of music.
- **Lip trills** are produced by the lips on adjacent harmonics.
- **Trills** of major and minor 2nds are possible except for the following:

Written:



- In the low and high registers, the following notes may be **difficult to play in tune:**

Written:

- Fast or prolonged passages in the following range are especially **problematic:**

Written:

SPECIAL EFFECTS

- Like the horn and trombone, an **arpeggiated glissando** over the **entire harmonic series** in a single position is possible.
- **Bells up** directs the performer to lift the bell of the trumpet up and towards the audience. The projection and tone become incisive and direct.

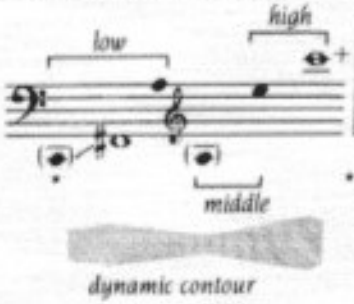
SCORING TIPS

- The instrument is primarily scored as the **soprano part** of a brass ensemble.
- The trumpet is capable of **tremendous power** and **crescendos** making it a favorite for **fanfares.**
- Because of its excellent projection, the instrument is widely used for **solo passages.**

HORN

Horn in F (French Horn)

WRITTEN RANGE

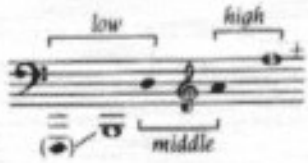


Practical (Written)

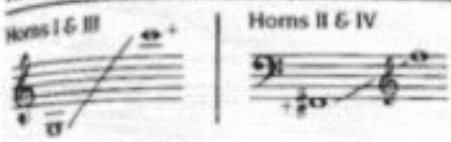
*Pedal tones may be used with the low C being the most impractical to implement

SOUNDING RANGE

Sounds a perfect 5th lower



HIGH & LOW HORN RANGES (Written)



TONAL AND DYNAMIC QUALITIES

Low Register

In this register the tone quality lacks focus, is **tuba-like, unsolid and quite dark.** This subdued tone is more apt to provide a supportive "presence" than a confident tone. **Projection is poor** and **intonation problems** are more likely to be encountered in this register.

Middle Register

Here, the horn in F is the **most characteristic-sounding.** The tone quality can vary from **warm, dark,** and **haunting** to **velvety, noble** and **heroic.** At louder dynamics and/or when ascending the register, the tone becomes **brighter** and projection increases. The **best control** of the instrument is offered in this register.

High Register

Ascending the high register, the tone becom **progressively more brilliant and exciting** higher the player ascends, the more difficult to play at softer dynamic levels. Consequent notes **above written high G** are almost impo ble to play softly.

GENERAL CHARACTERISTICS

- The horn in F is invaluable for its **wide range, very flexible timbre and dynamic variance** within the proper register. It is an excellent choice for solo passages since it is capable of conveying a wide range of emotion, from tender ness to heroicism.
- The characteristically diffused tone of the horn enables the instrument to become a vital link between the woodwinds and the brass. The **abi ity to blend** in an ensemble, whether woodwind or brass, is excellent. It is an instrument that is weaker in combination with brass instruments, yet is stronger than the woodwinds.
- Horns are the only brass instruments that tradi tionally **do not require vibrato**.

TECHNICAL CONSIDERATIONS

- Like the trumpets and trombones, the horn in F **utilizes the harmonic series** to produce pitch (See *Tenor Trombone*). Since the horn player primarily plays in the range of the instrument's higher partials, the horn is sometimes unpredictable in regard to accuracy and security.
- Typically the horn in F **lacks the agility** found in other brass instruments. Smooth melodic passages are most successful. Fast scale-like passages, quick or awkward leaps, and leaps of over an octave should be avoided.
- Because the instrument has a **tendency to speak slowly,** articulations, attacks and repeated notes have a tendency to be less crisp and precise. Double and triple **tonguings** are possible although flutter tonguing is problematic in the extremes of the instrument's range.
- Overall, trills tend to react sluggishly. **Valve trills of a minor 2nd** are possible throughout the entire range. The smoother and more characteristic **lip trills** are possible in whole-step intervals above written Bb.

Written:

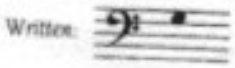
- The **extreme high range** should be approached by either a scale or an easily heard interval. The dynamic level should be fairly loud.
- **Prolonged muting** can be tiring to the embouchure.
- In the low register the horn in F is prone to **into nation problems.** Notes above high G are more difficult to produce and tend to be more insecure.

NOTATING HORNS

- Due to their extremely wide range and traditional scoring practice, horn players are accustomed to playing either the **high or low ranges** of the instrument. The use of four horns is standard in an orchestra with the odd-numbered combination (I & III) playing the higher part and the even-numbered combination (II & IV) playing the lower part. (For general division of the ranges see *High & Low Horn Ranges*.) They are scored as such:

- In the example on the preceding page, note that the horns are in an **interlocked voicing.** Horns I & II are normally written on one staff, while horns III & IV are written on the other and are considered high/low matched sets. Even when only three horns are playing, horn III will be scored between horns I & II.
- Horn I will play the majority of the high **solo passages** with the remaining solo passages assigned to horn III. Solos for horns II and IV are more equally assigned with horn II playing the higher, more agile parts, and horn IV usually playing the parts falling within the lower part of the range. When necessary, a passage that extends beyond the player's regular high/low range is easily played because the player is expected to be competent throughout the horn's entire range.
- When scoring for concert band, horns I and II may be written on one staff and horns III and IV on another. When utilizing block (stacked) voicings, the chord is **voiced from the top note down, starting with horn I.**
- In orchestral scoring, horns in F are **traditionally scored without a key signature.** In the concert band, horns are **scored using key signatures.**

- It is standard practice for **the horn in F to be notated in treble clef.** Although the player is capable of reading in the bass clef, they are apt to be less proficient at it. Notes written in bass clef should not extend above written G:



SPECIAL EFFECTS

- **Brassy**, or **cuivré**, denotes a "brassy" timbre produced by causing the metal to vibrate in a particular manner. The dynamic must be very loud or muted to create this forced effect.
- **Bells up** instructs the performer to lift the bell of the horn up and parallel to the ground. The projection and tone become incisive and direct.
- **Lontano** is an effect of separation or distance produced by employing a partial or completely stopped tone, and/or by playing extremely soft.
- Like the trumpet and trombone, an **arpeggiated glissando** over the **entire harmonic series** in a single position is possible:

Muting

The horn is normally played in a manner which requires the performer to place the right hand partially into the bell of the instrument.

- **The Stopped Horn:** The performer places the right hand as far into the bell as possible, almost completely blocking the flow of air.

  At soft dynamics, a **distant, delicate and buzzy** effect is produced. At loud dynamics the sound is more **nasal and metallic.** To enhance the metallic quality, *cuivré* or *brassy* may be indicated. The effect is instantly implemented or discontinued.

  The indication *stopped* begins the muted effect and *open* ends it. Likewise, a **(+)** over the stopped note or **(o)** over the unstopped note achieves the same purpose.

- **Half-Stopped Horn:** This more subtle effect is achieved by placing the hand into the bell only far enough to **reduce the volume** and/or to veil or cover the tone. Pitch alteration also occurs and is adjusted. As opposed to the fully stopped effect, half-stopping *lowers* the pitch a half step.
- **Straight Mute (Transposing Mute):** This commonly used mute produces a **sharp, biting and metallic** sound. It is cone-shaped and made of either metal or cardboard. (The metal mute provides a brighter and more biting sound.) The mute is used as an **alternative to hand-stopping** when the passage being played is rather lengthy.
- **Half Mute:** Produced by inserting a straight mute partially into the bell. Used primarily in the high register.
- **Ball Mute:** Used in place of the hand in order to stop the tone (especially in registers where hand-stopping can create intonation problems).
- **The Hand Slide or Bend:** This effect produces a smooth glissando at primarily soft dynamics. The effect is produced as a result of the hand entering the bell (half-stopped), allowing the instrument to fall a half step.

SCORING TIPS

- **Performance security** increases when doubled at the unison or octave, when difficult notes are approached properly and when extreme dynamics are avoided.
- In a variety of musical situations the horn's ability to blend is excellent at **providing warmth and depth.**
- In a **solo capacity,** the range and frequency of the passages should dictate which horn (I, II, III or IV) should be used.
- The **middle register** provides the most secure playing range, with a plush, rich tone quality.

Double Horn in F and B♭

- The double horn in F and B♭ is a combination of **two horns in one:** one pitched in F and the other pitched in B♭. A lever allows simultaneous switching from one horn to the other.

- The **tone quality is identical** to the horn in F. When pitched in B♭, the tone is naturally brighter and less round.
- The double horn is **always written as if for the horn in F.** Transposition is not a problem for the performer.
- Certain very low pedal tones are made available when pitched in B♭.

Triple Horn in F, B♭ and F Alto

- Another hybrid horn, the triple horn is additionally equipped with a third, **F Alto,** capability. Pitched a **perfect 5th higher than written,** the F alto division allows **increased accuracy** in the high register.
- Two valves, operated by the left thumb, enable the player to choose which "horn" they prefer for a given passage.
- **Rarely used,** the triple horn is likely to be available to only a few professional players.