

The New Tuba Player's Manual

**A reference for teachers and students for whom the
tuba is not their primary instrument**

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Breathing Exercises

Breathing is, of course, essential to the art of making music on any wind instrument. With the tuba, it becomes all the more important when we consider not only the size of the instrument itself, but also the unusually large range of the instrument. When you add touches such as dynamics to the mix, we begin to realize that good breath control is essential to correctly play the instrument. Therefore, it is critical for the player to begin exercises geared towards breathing as early as possible. Below are some techniques to help begin to build breath control. These should be viewed as only ideas, and used as warm-ups; that is, only a short time each day, but done every day in some form.

The more air you have, the better control over your instrument (tuba or otherwise). The object of all breathing exercises is to increase the amount of *usable* air a player has. This is not to be confused with the sensation of running out of air, although at times the two do coincide. Instead, the air we breathe in begins to deteriorate immediately, and must be used within a time specified by the musical material, player's capacity to produce a good tone, and the physical limitations of the player. Contrary to stereotypes, a player who is in better physical shape will have an overall better likelihood for success on the instrument, as their capacity for muscle control and flexibility is increased with better physical stamina.

These exercises are designed to get the player to breathe deeply, and use the muscles associated with the diaphragm instead of the chest area. This allows for a deeper breath, more control over that breath, and more usable air at all times.

Please keep in mind there are many more breathing exercises available – these are just a beginning.

****Warning: Players will usually feel light-headed and dizzy when learning these breathing exercises. This is normal and a good sign – it means they are using more air than they used to. When this happens, simply stop the exercise, relax until the feeling subsides, and go on to something else.****

Exercise 4. Power Breathing

This exercise differs from the others in one major way – it is designed to get the player energized.

The stance is the same – the legs should be about shoulder length apart, one foot slightly in front of the other. This time, the arms are placed together in front of the player, after the air is exhaled. When the player breathes in, the arms come back, so they are even when the player is full. When the player breathes out, the arms come together again, as though the player is pushing the air out of his/her body with their arms. These movements should be smooth and relaxed – no jerking or tensing of the arms should take place.

The player should only take in one or two breaths at a quick tempo, which should completely fill him/her up with air. Then, immediately, the player should begin to breathe out; at first slowly, then after that is mastered, more quickly. ALWAYS keep a steady tempo!

Exercise 5. Paper Test

As an added game with younger students, I often have them hold a piece of paper up against a wall, stand a full arm's length away, and practice blowing a steady stream of air towards the paper to keep it from falling as they lower their arm. I'll give them a goal – 3 times for 2 seconds each before the next lesson, 4 times at 7 seconds each, whatever is appropriate for them. This allows them to start to realize the amount of air they need to have, and the speed with which they will need to use it.

There are some tuning issues which are raised with the harmonic series. Each instrument will have its own intonation issues, but generally, if you were to take the first twelve pitches in any harmonic series, the tendencies will probably be something like this:

- Fundamental, 1st, 2nd and 7th overtones – in tune
- 3rd 5th 8th overtones – sharp
- 4th 6th 9th overtones – flat

Implications on embouchure in different ranges

The change of range from lower, middle, and high tends to push the undeveloped embouchure to loosen and tighten an unnatural amount. Realistically, the basic embouchure does not change much on the tuba (or any brass instrument) throughout the entire range. The lips can either tighten or loosen slightly to manipulate any given pitch, but should stay essentially set in place for all of the pitches. Of course, the jaw will drop for lower pitches, and higher notes are more attainable and controllable if the air stream is aimed slightly lower in the mouthpiece for each higher pitch, with the corners of the mouth pulled back and more firm. However, these changes are minimal, and should not be visually perceptible unless large leaps are involved.

Demonstration of correct embouchure

The best way to teach any student is through demonstration; therefore, it is imperative that the teacher be able to demonstrate a correct embouchure to the student. If this is not possible, have another tuba player demonstrate. With proper demonstration, the student will understand in a matter of seconds what the embouchure looks like, see how relaxed the facial muscles are, and hear the tone which they are attempting to produce. Things to look for with a correctly formed embouchure:



A correct embouchure should include:

1. Clear lines from the nose to the corners of the mouth
2. A lack of tension in the facial muscles
3. The lips should be touching the mouthpiece with only the minimal amount of pressure possible
4. No puffing of cheeks or air pockets

Mouthpiece buzzing – explanation and demonstration

Mouthpiece buzzing is the practice of buzzing on the mouthpiece alone. While this is an excellent and necessary tool for the intermediate to advanced player to improve intonation, the beginner will become frustrated with the change in resistance and will usually be unsuccessful in gaining benefit from the exercise.

Buzzing on the mouthpiece alone requires the player to use their ear to match pitches – the tuba is not needed to change pitch. This exercise also requires a properly formed embouchure, and uses much more air to produce sustained pitches and changes than when playing the tuba – thus, lung capacity is increased.

Before a student buzzes on the mouthpiece, the teacher should again demonstrate for him or her. This way, the student sees and hears exactly what is expected. The mouthpiece should be lightly held between the fingers and thumbs, not grabbed in a forceful manner – we should be relaxed when we play any part of the instrument.

* While the end of the mouthpiece can be covered partially with one of the fingers (usually the little finger) to reach lower pitches, this is not a practice which should continue for a long period of time, as it can prove limiting to the player's development, especially in the lower range.

Adding the Tuba

Posture

The posture of the tuba player is perhaps the most important aspect of performance, and is often overlooked or forgiven because of the instrument's size. However, this can lead to serious issues with air support, which in turn will effect the sound negatively.

When holding the tuba, it is important for the player to do the following:

1. Sit straight, on the edge of the chair
2. Legs should be set about shoulder's length apart, with feet flat on the floor
3. Position tuba so that the player does not have to stretch the neck out of position to reach the mouthpiece, and player doesn't slouch

It may be necessary to utilize a tuba stand for smaller size players. Also, since tubas vary greatly in size, shape, and design, experimentation will likely be necessary to find the correct way to hold the instrument for each player, and may need to be adjusted as the player grows.

Correct hand position

The right hand position should be relaxed at all times, with the fingertips resting comfortably on the valves, close to the nail. Most models provide a loop for the thumb – be careful the thumb does not go into this loop beyond the first knuckle, as this will pull the other fingers out of position.

It is important to make sure the player does not “double-finger” any particular valve. This is a typical problem with beginner players, and especially with the first valve. Problems will later arise with quick passages that require all the valves if this habit is allowed to develop.

The left hand is usually placed somewhere on the tuba that allows for a secure, comfortable grip. On most front-action instruments, the tuning slides for several of the valves (usually the first, third, and fourth valve slides) are positioned so they can be pulled and pushed with the left hand, which allows for more accurate tuning on slower passages. Also, there may be an additional valve for the player to use with the left hand, which of course would require the hand to be placed in a specific position.



A Good Hand Position:

1. Fingers curved
2. All fingers on valves at all times
3. Thumb not inserted into thumb hole (pulls hand out of position, slows fingers, and if the tuba falls, thumb can break)
4. Hand relaxed

Tone production

When the tuba player can hold the instrument correctly, use correct breathing, and form a correct embouchure, they are ready to put it all together and begin to produce sound on the tuba.

Since it is easier to produce a sound on the mouthpiece with it in the tuba rather than by itself, it is best to allow the student to make their first “real” sound on the instrument. An exact pitch is not necessary immediately – rather, it is important for the student to find where the open-fingered notes lie on the instrument (on a Bb instrument, these are the Bb’s or the F below the staff). If the student is getting notes above the second-line Bb, their embouchure is too tight, and they need to relax and lower the jaw to lower the pitch.

Again, with the initial sounds on the instrument, it is most important for the student to become comfortable with the feel of playing the tuba. The first exercises in this method, as with most, are focused on having the student play long tones (see below) in this “middle” range of the instrument, where the highest level of success is probable.

It is essential for the student to have heard good tuba players by this point in their development, either live or through recordings. Without a strong concept of a good sound, producing one will be impossible.

Other Major Performance Aspects

Dynamics

Dynamics on the tuba are extremely similar to dynamics on other wind instruments, especially other brasses. The amount of air being pushed through the instrument determines the relative loudness or softness of the sound. To control dynamics, the player must have control of the air.

A typical problem with dynamics on the tuba comes from a closed throat. Often, the player does not realize their throat is not completely open, and their sound is actually softer than they think it is. It's similar to a caulk gun – the caulk builds up at the smallest opening, and can only be pushed through in a small amount. In addition to the throat, the player needs to make sure the tongue is low in the mouth, allowing the air to again flow freely.

Articulations

Articulations on the tuba, as with all wind instruments, are primarily done with the tongue. There are some exceptions – some advanced techniques require throat manipulation or alternate fingerings, but these are for the advanced player only, and require a professional tuba player/instructor to teach these techniques.

The tongue should always begin and end in a relaxed position on the bottom of the mouth. Its movements should be quick, and the air flow should only be disrupted with the tongue – think of a faucet pouring out water, and moving your finger across the nozzle. The flow doesn't slow or stop, but the water direction and power changes. In essence, you are doing the same thing with the air.

The faster and/or lower the articulation, the more the tongue needs to work. As we progress lower and faster, move the tongue slightly further back in the mouth, and play closer to the tip of the tongue, moving it further back towards the point where the roof of the mouth begins to ascend.

Different teachers have different ways of teaching the various articulations. I'll touch on a few of the techniques I have used successfully.

Legato

Legato playing is performed by a combination of slurring (discussed below), and a steady flow of air. The essence of playing in the legato style is to keep the music smooth and connected, as if singing in a continuous breath.

On passages where breathing must take place and disturb the line, the best way to do this is to find the least disruptive “break” in the line, and sneak in a short, quick breath. With the player using the breathing exercises discussed earlier, this should allow enough support to sustain to the next break.

Slurring

This smooth transition from one note to another is perhaps one of the most difficult effects to produce on the tuba. The slur is also one of the most basic and important, and needs to be emphasized and practiced every day, and introduced to the new tubist as early as his or her ability will allow, even as early as the third or fourth lesson, if at least four or five notes can be played solidly.

Many players and teachers use the “Ah” and “ee” syllables to teach the concept to students, and to reinforce it. The important aspect of these is that as the notes go higher, the speed of the air (not necessarily the dynamic) must increase, and the space within the mouth (not the throat) and between the teeth must decrease.

In order to create an effective slur, the other aspect that is required is the ability to hear the second note before it is played. Again, the “Sing-Buzz-Play” exercise is of great importance, and will allow the student to produce effective slurs much easier.

Purchasing an instrument

Purchasing a tuba is a big deal. The decision to make this large purchase should follow great thought, and an evaluation of the future needs of the district music program, or the individual player the instrument is being purchased for.

When deciding to purchase an instrument, it is important to reach out to professional tuba players in your area. These players can play on several instruments, making sure that there is not a stuffy tone, rough pitches, and that everything works properly. If a professional player is not available, have either a strong player from your school or another school play the instrument, or play it yourself.

Instruments are designed to be student, intermediate, or advanced. These can correlate to elementary, middle school, and high school levels roughly. An intermediate tuba will suffice at the high school level, though it is not the ideal situation; a student horn should be avoided if at all possible.

Since instruments are always changing, it is beyond the scope of this book to suggest specific instruments. However, well-known brands such as Yamaha, B&S, Meinl, Meinl Weston, Kalison, Hirsbrunner, and Mirafone, among others, tend to be good choices.

Some other considerations:

- Valves: Front or Top
 Piston or Rotary
 3 or 4 valves

- Plating: Silver (more expensive, but better at hiding repairs. Slightly
 brighter tone)
 Lacquer (brassy / gold color)

- Cost: For student and intermediate models, usually between \$2,500 and
 \$4,000 – do not pay more than \$5,000 for a student model.

Piston Valves

- Oil your valves at the very least once a week, probably every other time you play. Oil one at a time, and be careful to not force them back into the casing – they only go one way.
 - Clean the valves one at a time, so as to not mix the parts.
1. Take out the valve.
 2. Dry off the valve.
 3. Under warm water, clean the valve with soap until it is smooth. Only use something smooth, like a washcloth.
 4. Completely dry off the valve. There should be no dirt, oil, or water anywhere on the valve.
 5. On the tuba, take the bottom cap off of the valve casing.
 6. Dry the bottom cap, then wash and dry it.
 7. Take a clean, dry cloth and clean the inside of the valve casing. It may take a couple of cloths, and be somewhat tough to reach all the way through. The best method may be to take one end, weed it through the casing, and move it back and forth through the valve casing.
 8. Put the bottom cap back on the valve casing.
 9. Thoroughly cover the valve in oil. Note: DO NOT OIL THE VALVES THROUGH THE BOTTOM OF THE CASING! This does not allow the oil to reach the valve itself.
 10. Make sure the bottom and top of the valve are screwed in completely.

Greasing slides

The following should be done for all slides that move, or are supposed to. I highly recommend that every day, after the tuba is warmed up, each slide is moved, to ensure that over time they don't stick. Please make sure that you depress the valves as appropriate, to avoid changes in air pressure within the slide that could damage the instrument.

1. Make sure you keep track of the proper placement and direction of each slide. I recommend placing each slide on a paper towel that is labeled.
2. Completely clean the slide. Soak in warm, soapy water (using soap designed to fight grease).
3. Scrub all remaining grease from slide, using a sponge with a rougher surface. Use nothing that can eat the metal. Be careful to avoid scrubbing the lacquer.
4. Scrub out the inside of the slide with a soft brush, using warm, soapy water (using soap designed to fight grease).
5. Rinse the outside and inside of the slide thoroughly, to ensure no more dirt or soap residue remains. Completely dry the slide.
6. Re-grease slide. Make sure the use of grease is the minimal amount necessary to allow slides to move freely.

Rattles

Rattles occur, and many are not possible for you to fix. However, some are. Here are the most common issues:

1. A loose screw. This is easy to fix, but be careful not to overtighten.
2. A valve cap not being completely tight. Again, an easy fix, but don't evertighten.
3. Missing or worn cork in the spit valve, causing the metal casing to vibrate when played.
4. Loose solder joint. This is a fix for the repair shop. Do not attempt to fix a solder joint yourself – there are several different types of solder used on a brass instrument, which melt at various temperatures and you will harm the finish on your instrument.
5. Design of the tuba. Not an easy fix. These are rare, and usually occur along with dents and dings, usually on the bell. The harmonics of a pitch are affected, and while not typically a noticeable issue, may sometimes create a different vibration that can be a rattle-like sound. This is a repair shop item.

Common problems and solutions

Instrument-specific issues

The tuba requires very little maintenance, especially if cared for correctly. However, like all instruments, problems do arise. The list below is not complete, but does provide solutions you can try for most common problems prior to sending the tuba out for repair.

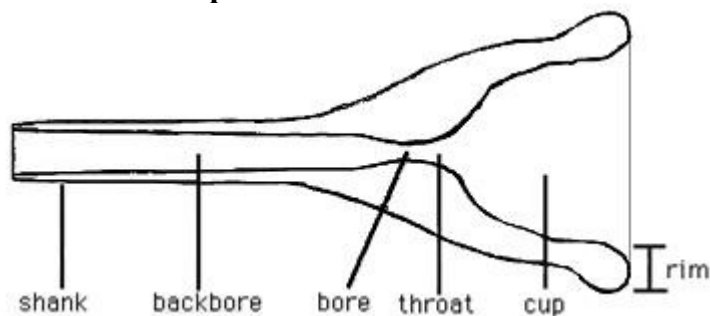
If you are nervous about a repair, or none of the given solutions works, a qualified repairperson should be able to resolve the issue.

Problem	Possible Solution
Sticky valves	<ol style="list-style-type: none">1. Apply oil to the valve(s)2. Clean the valve(s) and casing(s)3. Send out instrument for repair – possibly bent or dented
Stuck slides	<ol style="list-style-type: none">1. Depress valve to release pressure2. Clean and re-grease slide3. Remove grease from slide, and apply thinner coat4. Lightly tap slides with soft rawhide mallet5. Send out for repair
Slow valves	<ol style="list-style-type: none">1. Apply oil to the valve(s)2. Clean the valve(s) and casing(s)3. Send out instrument for repair – possibly bent or dented
Slides moving themselves	<ol style="list-style-type: none">1. Re-grease slides, using slightly more2. Check to make sure slides are in correct location3. Send out for repair
Rattling	<ol style="list-style-type: none">1. Make sure all screws, felts, and corks are snug and in good condition2. Oil the valves3. Oil the linkage (rotary valves)4. Send out for repair
Air leaking	<ol style="list-style-type: none">1. Check spit valve for worn or missing cork2. Check for hole in brass, especially at solder joints3. Check student embouchure4. Send out for repair
Clanging valves	<ol style="list-style-type: none">1. Oil the valves2. Check alignment of valves3. Check for worn or missing felts and/or pads4. Check for loose screws5. Send out for repair

Performance-specific issues (continued)

Difficulty lip slurring up	<ol style="list-style-type: none"> 1. Embouchure too relaxed 2. Student can not hear pitch prior to playing it 3. Embouchure unfocused – student letting instrument do the work 4. Trying to force the pitch – needs to relax 5. Insufficient air support
Difficulty lip slurring down	<ol style="list-style-type: none"> 1. Embouchure not relaxing enough 2. Jaw too closed
Airy tone	<ol style="list-style-type: none"> 1. Insufficient air support 2. Embouchure too tired 3. Insufficient air use 4. Poor sound concept

Mouthpieces – Parts and Functions



Wide Rim	<p>Increases Endurance Limits Flexibility Good for thicker lipped players</p>
Narrow Rim	<p>Improves Flexibility Improves Range Decreases Endurance</p>
Round Rim	<p>Improves Flexibility Muddy low-register attacks</p>
Sharp Rim	<p>Brilliant tone Cleaner attacks Limits Flexibility</p>

Starting Exercises for Switching Students

These exercises are designed for the student who is switching to the tuba from another instrument, and already has a grasp of the basics of rhythm and note reading. It is highly recommended to begin with these exercises to ensure success with the instrument prior to moving into a good elementary method book, likely halfway through. These exercises, as well as additional tuba materials, are available through www.blostein.net.