More Thoughts on Tuba
by Barton Cummings

In my first article, I wrote about the "metal instrument" that we call the tuba. In this article, I am wish to cover some basic fundamentals that are often misunderstood and this lack of understanding can and often does, lead to bad habits that require a lot of remedial help later in the life of the tuba player. While some of these items will seem basic and elementary, I urge all who read this to evaluate their approach to playing the tuba.

EMBOUCHURE

Simply stated, the "embouchure" describes the position and tension of the lips and the surrounding facial muscles when air is blown through the lips causing them to vibrate. Depending on the amount of tension used, the lips will vibrate at different speeds producing a variety of high and low pitches.

When taking the first step to form your embouchure, use a mirror. It will let you observe how well you are doing. The mirror should be one that can be placed on a table leaving your hands free. At first, use just the mouthpiece alone.

Relax your jaw, face and all of the muscles in and around your lip area. When you are relaxed, begin to firm the corners of the mouth and add a small amount of tension to the lips. The corners of your mouth should be turned down slightly. Never become so tight that you feel uncomfortable or cause pain. Your lips have to vibrate but will not be able to if you are too tight in any area of the mouth.

After you have formed an acceptable embouchure, place your mouthpiece in its proper position. For tuba players, this means that two thirds of the rim will rest on the top lip and one third of the rim will rest on the bottom lip. You should strive to place your mouthpiece in such a way that there will be equal-distance from the right and left corners to the rim of the mouthpiece.

Now that you have successfully formed your embouchure and placed the mouthpiece in its correct position, breathe in through your nose while keeping your lips closed. After this intake of air, release it immediately through your lips. Do this several times while watching yourself in the mirror. Do not puff out your cheeks, push your lips out in a pucker or pull them back in a smile. It is important to have no air leaks at the corners of your lips. Any of these actions will result in poor control, lack of flexibility and unacceptable tone quality. Remember, you are to feel comfortable and your lips should respond freely. You must be careful and avoid too much mouthpiece pressure and too little pressure. Too much pressure can restrict the blood flow to the lips and this could lead to some serious lip trauma, while too little pressure can cause you to develop a stiff, inflexible embouchure. Both too much pressure and too little pressure will inhibit your ability to play the tuba.

Brass players use either a wet or moist embouchure or a dry embouchure. Whether you will choose a wet or dry embouchure will be a personal choice. The wet embouchure is the most popular because it keeps the mouthpiece from sticking to the lips and restricting the player when it comes to catching quick breaths. The wet embouchure is also believed to allow the player more flexibility.

As you practice your embouchure development, keep in mind the four points listed below.

1. Facial and oral cavities, tongue, and teeth in a relaxed position. The throat is to be open at all times.
2. Lip corners kept firm, not tight or clamped, and the teeth slightly open.
3. Mouthpiece resting in a position that is comfortable with two thirds of the rim on the upper lip and one third of the rim on the bottom lip
4. Keep the chin flat and pointed down with the lips in a natural position that is not pulled back or puckered. Avoid bunching up the chin.

MAKING THE FIRST SOUND

Please keep in mind that all of your previous work was done without the mouthpiece or tuba. It is now time to place the mouthpiece in your tuba. Push the shank into the receiver gently with a slight amount of pressure. Turn the mouthpiece clockwise so that it will seal completely within the receiver.

Using your mirror, replace your embouchure on the mouthpiece and breathe in through your nose. Hold this air in your lungs for just a few seconds and then release it through your lips into the tuba. Do this several times.

What Happened?

If you were very lucky, the sound was low. Most likely the sound was pinched and squeaky. Don't worry, this is normal. There are several things to check before trying again.

1. Did you pinch your lips too tight?
2. Did you puff your cheeks?
3. Were your lips too loose and flabby?
4. Did you try and blow too hard?
5. Did you not blow hard enough?
6. Was your mouthpiece in the right position?
7. Were your tongue and teeth in the way?

After checking these areas, try it again. Be calm, patient and remember, your lips and facial muscles are being asked to act in a new and different way than ever before. Keep trying for short periods and take time to rest in between attempts. Try to lower the pitch each time you play. This is going to take time, lots of effort and much repetition, so don't become discouraged and give up.

Once you have achieved a satisfactory sound in the low register, the process of refinement begins. This involves your breath, jaw, teeth, and tongue.

BREATHING

Even though we all breathe to stay alive, the way we breathe when playing a musical instrument will need improvement and adjustment. Playing the tuba requires you to learn to breathe more deeply with greater control so that you won't have to gasp for air after every two or three notes.

Filling your lungs with air is known as "inhaling" while the releasing of air is called "exhalation". Both of these actions are natural to living and should be relaxed and free of tension at all times. The tongue and teeth are kept in their normal positions with the throat open. The upper torso area is held so that the inhaling of air is unrestricted. As you inhale, try to visualize your lungs as balloons that are being filled with air from the bottom to the top.

In exhaling, the lower abdominal muscles apply gentle pressure to the lungs to help expel the air. Do not exert too much force as this causes tension and exhaling, like inhaling, must be relaxed and free from tension.

When you first begin this process, it is important to inhale and exhale in one continuous motion. After achieving a free flow of air in and out of your lungs, begin to inhale, hold, and release. The first few times you do this, the resulting notes may be cracked or missed. The object is to inhale, hold the air and release it gently.

It is inevitable that you will hear the term "Diaphragmatic Breathing". This is a misconception that has generated great confusion. The "diaphragm" is a muscle located at the waistline and when we breathe, the diaphragm shapes itself similar to an inverted bowl. It is the kind of muscle known as "involuntary". This means that it cannot not act of its own volition and cannot help you to breathe. In fact, the diaphragm is constructed like a set of fingers. When it is activated, these fingers part and rise upward. In truth, there is no such thing as "Diaphragmatic Breathing". Do not be fooled by teachers claiming they can teach you how to use the diaphragm to breathe better.

As a tuba player, you will often have to take deep breaths quickly and quietly. The following exercises have been especially designed to help you develop better breathing technique.

1. Place your hands at your waist and inhale slowly and deeply. Do not throw your chest out or hold yourself in a rigid way. Fill your lungs completely from the bottom up. If you are doing this correctly, your hands will be pushed away slightly. When you have filled your lungs, release the air normally. Do this exercise several times before proceeding to number two.
2. In the sitting position, lean forward and place both hands flat on the floor beside your feet. Keep your arms straight down. Breathe in very slowly filling your lungs from the bottom to the top. You will feel your rib cage expand and at the same time you will feel yourself sitting up. You will need to repeat this process several times.
3. This next exercise will help you increase the amount of air you take into your lungs. Begin by expelling all of the air from your lungs. Next, breathe in completely and deeply as much air as you can for a period of ten seconds. Hold the air for ten seconds and release the air completely over a ten second period. Do this at least three times. When you can do this exercise comfortably, increase the three parts of the exercise by five second increments over a period of time. This exercise should take you several weeks to accomplish.
4. "Catch breathing" is a technique that tuba players use to retain a great amount of air in their lungs to produce the volume of sound required. To practice catch breathing, inhale and fill your lungs to the limit. Wait just a few seconds and then quickly inhale another small amount. Do this several times without letting any air escape from your lungs. Once you have reached the bursting point, slowly release all of the air in your lungs and repeat this exercise for several minutes. This is an exercise that you will continue to do over and over for as long as you play the tuba.

To become effective in your breathing technique, it is important to learn "breath control" and "breath support". Controlling the breath means using the muscles of the upper torso region in combination with a well developed embouchure to maintain a consistent level of air in the lungs to accomplish all musical requirements. Supporting the breath uses the muscles of the lower abdominal region to apply the right amount of pressure on the lungs so the air can be released naturally.

It will be important for you as a tuba player to be aware that you will need to refill your lungs on a regular basis during your playing. It is vital that you do not breathe in awkward and unmusical points in the music. You must carefully plan each breath and mark the exact spot on the page where you will replace the exhaled air. This will take some practice and once you have made the decision to breathe at particular points, practice taking breaths at these points just as you practice the notes, dynamics and rhythms in your music.

The last consideration for perfect breathing technique is GOOD POSTURE. Good posture is the first step on the road to musical perfection in your playing. Good posture means never slouching, or being too rigid when you are standing or sitting. Good posture lets you breathe freely while holding your instrument in a comfortable position.

The breathing process may be summed as:

1. Inhaling and exhaling without hesitation
2. Breathing from the bottom of the throat
3. Keeping the body relaxed and filling the lungs from the bottom to the top
4. Refraining from "chest" breathing
5. Planning and practicing all breathing points in your music
6. Breathing through the corners of the mouth without disturbing the mouthpiece placement
7. Remaining free of physical contortions or unnatural positions

THE LOWER JAW

You may not know it, and most of don't, but we humans have only one "jaw" and it is the lower one. The jaw determines the amount of flexibility you achieve, the extent of your range, the beauty of tone, and the quality of your articulation. If your jaw is kept in a rigid position, you will never achieve satisfactory results and your progress will be severely inhibited.
When you descend into the lower register, your jaw will want to open and as you ascend into the upper register it will tend to close. This is the natural tendency for all brass players and is encouraged. In fact, you will want to think of your jaw as being on hinges like a door. Your jaw, like the door, can move in only two directions, down and up.
There is a second hinge that tuba players are concerned with. It is located where the mouthpiece rim rests on the upper lip at the bottom of the nose. Anchor your mouthpiece to this spot and allow it to move up or down depending on the jaw movement. As you ascend the lower rim will want to move inward as the jaw recedes, while descending will cause it to want to move out as the jaw moves forward.
You need to do one more thing and that is to establish a "mid-point". This mid-point lets you play the keynote of your tuba with a full, rich and completely controlled tone. You can find this position by beginning to play the keynote of your tuba with your teeth completely closed and sitting with your back against the back of your chair. By slowly opening your teeth and at the same time leaning forward, you will soon hear your tone open up and take on the qualities mentioned.

ARTICULATION

The tongue begins every note. It acts in the same way as the bow used by string players. It determines the way a note is begun and whether the note will be accented or legato and to what extent. The tongue is a muscle and it lets the air held in your lungs to be released through the lips according to the musical requirements. The tongue is not used to stop notes. Stopping a note is a matter of stopping the flow of air at the bottom of the throat in the area known as the "glottis". Ending a note with the tongue adds and extra articulated sound and destroys the quality of the articulation.

There are four styles of articulation used on the tuba and they are: single tongue, double tongue,triple tongue and the slur. With any of these styles of articulation, you must remember that the movement of your tongue is a combination of up and down and back and forth movements, with the emphasis being on the up and down motion. This only makes sense because the up and down motion does not require the tongue to travel so great a distance as it would if the emphasis was placed on the back and forth motion.

In all styles of articulation, the tongue must be relaxed. A tense tongue leads to late note beginnings, explosive note beginnings and inhibits the speed at which articulation can be executed. A relaxed tongue will also prevent excessive jaw movement or "chewing" which results in a heavy, thuddy kind of note beginning.

It is the single that you will be concerned with during your initial introduction to the tuba. This a type of articulation in which you will use only one syllable to begin any note. Double tonguing is a style of articulation in which notes are produced in multiples of twos, while triple tonguing is that style of articulation in which the notes are grouped in multiples of threes. These multiple-tonguing styles require the use of two syllables and these are usually, "Tu" and Ku".

In multiple-tonguing, the syllables must be even in weight and length. The "Tu" must not be longer or louder than the "KU". It is best to practice only the K syllable alone for two weeks beginning with quarter note equal to sixty beats per minute and gradually increasing the tempo. Uniformity of note beginning, middle and ending is your goal. When this has been achieved, you should then begin to use both the T and K syllables together with the same goal of equal length and weight for each. Multiple tonguing should only be learned after you have mastered the single tongue. Double and triple tonguing techniques are used for the purpose of clarity and are not to be substituted in place of the single tongue.

As you begin your first attempts at articulation, try not to "attack" any notes. Think instead of "pronouncing" the notes by saying the word "too". You would of course not actually sound this word verbally, but would use your air stream, tongue and mouth to form this word as you engage your tongue. You may not achieve perfect results the first time you try to use your tongue. Keep at it and eventually you will find just the right place for your tongue and exactly how to begin each note you play. It is important to remember that all syllables be pronounced in a manner as closely related to speech as possible. Do not swallow your syllables by placing them too far back in your throat.

You may find yourself producing articulations by letting your tongue go between the teeth and through the lips. This type of articulation is dangerous for tuba players because it can cause heavy and ponderous note beginnings.

Many teachers and performers of brass instruments advocate what is commonly referred to as the "tongue arch". Simply stated, this process is achieved by arching the back of the tongue up when ascending and lowering the back of the tongue when descending. No recommendation for or against this method is offered. It will be a matter of individual choice.

In simple terms, slurring is the movement from one note to another in smaller or greater numbers. The difference in slurring and tonguing is that only the first note of a group would be articulated and the rest of the slurred passage would be played by smoothly connecting the notes to one another without using the tongue.

Slurs often present problems for players, especially if they are to be executed in ascending passages. The lower jaw functions in slurring precisely as it does in strict articulation. It will open or close depending on the register and the pattern of the slur group. You must be careful no to over-compensate by having too much or even too little jaw movement because this could impede the smoothness of the slur.

Other problems you may encounter with slurring will involve the breath and valve manipulation. You must have continuous air flow from the beginning to the end of the slur group in order to achieve the continuous sound called for in slurring. The common mistake in valve manipulation is to depress and release the valves too slow causing distortions in the slur group. No matter what the tempo, always use a quick, firm finger technique.

In slurring, the use of different syllables is sometimes advocated as a means of aiding the completion of a slur. Once again, this technique has been used effectively. One drawback to this changing of the oral cavity is that the tone color is affected by the use of different vowel sounds in the same way that our spoken words are affected. If you choose to experiment with these ideas, do so while listening very carefully to any changes that occur.

Correct valve negotiation is integral to fine articulation. Valves must be depressed firmly and quickly regardless of the tempo. After the note has been sounded and held for its proper length, the valves should then be released and allowed to recover freely. In slow tempos the tendency is to depress the valves slowly, thus making a small smear of the sound, while in rapid tempos, many players will jam the valves down and then release them too quickly. For those who are mature enough, physically, you may wish to try this next exercise after you have studied for a few weeks. It is one that will assist you in the development of tongue and finger coordination.

Begin by standing and holding your tuba in its proper playing position. Place your fingers on the correct valve and using your metronome, take one step for each click when you set the metronome at quarter note equal to 60 beats per minute.

When you find this beat and can move to it in a steady walk, begin your training by pressing the first valve down on your left foot and releasing it on your right foot. Proceed through each valve and valve combination in order. Listen carefully and make sure that when depressing more than one valve they all reach their descent at exactly the same time.

Once you have worked on this part of the exercise for a time, then begin to play notes using the individual valves and the various valve combinations. The object is to articulate at the precise moment of valve movement. This exercise should become part of your everyday routine.

As you become more involved with music, you will notice "slurred" notes. This is part of the articulation process and takes time and practice to perfect. Slurring means that you begin the first note of a passage with your tongue and then with a combination of embouchure, jaw and air stream, move from one note to another without using your tongue. In ascending passages, you will close your jaw and in descending passages, you will open it.

To become proficient in the articulation process, remain patient and practice every day until articulation becomes a basic part of your technique.