The Tripod of Sound

by Mike Herriott

The process of sound production on the trumpet (or any wind instrument for that matter) is dependent on three fundamental points, thus the "tripod of sound." These three points are (1) the air source, (2) the air passageway and (3) the embouchure. If one of these is not working properly, the sound collapses.

The Air Source: When the average person (by that I mean; not a trumpet player…) thinks of taking a deep breath their idea is to suck in their belly and raise their shoulders as high as they can - that's why people always say, when trying to squeeze through a narrow space, "breathe in!" However, as brass players we know this simple concept to be incorrect for maximum air intake. What we must do, instead, is allow our torso to expand outwards in order to make room for all the air we want to inhale.

The first part of this is using our diaphragm to bring the air into the lower torso or belly. In doing so we push all of the contents of our belly forward causing that area to expand. The bonus of this is that we can then use the very strong muscles of the abdomen wall to support and control the output of the air. However, moving the air in this way is not the most natural process for some and so we must find ways to make it feel natural.

One exercise that I find really works is to lie on one's back on the floor - or any firm surface for that matter. What happens automatically is that it becomes almost impossible to raise the shoulders and, as well, the belly raises up. This means that the diaphragm is doing all the work in getting the air in. At this point, it helps to place the fingers of both hands along the bottom of the rib cage (on both sides). This way it is possible to get a clearer picture, in your mind, of what's happening. The next step is to practice breathing this way while standing and sitting (most people don't tend to play the trumpet while lying on their back….). Again, place the fingers on the bottom of the ribs to see if you are, in fact, breathing the same way. It is good to really get the feel of breathing this way so that it becomes the most natural way for you to breathe.

Once you really get the hang of the first part of this we move on to bringing in even more air! We do this by using the expanding capability of the chest. We are used to thinking of using our chest as the storage place for air as this is where our lungs are. The one thing to note, however, is the movement of our shoulders; the shoulders should not move up in any way. Once your shoulders rise up, you are cutting off the airflow - which we'll get to soon. I like to think of the whole inhaling process as "filling up like a sand-bag" (I got that analogy from the "Analogy King", Don Buell). By thinking of it this way, we are encouraged to approach breathing as one motion, rather than a jigsaw puzzle.

Now when we get to actually using the air to make a sound, we have the strength of the abdomen wall to control the flow of air. Because the abdomen muscles are so large, it is possible to control the airflow without straining. I like to think of having the bottom of the abdomen wall pushing slightly upwards while the top of it moves outwards. In this way, I am able to keep the air constant and I am also able to control the speed of the air. When I'm playing in the extreme register of the trumpet (double "G" and above) I actually use my lower back muscles as well, it really is a joint effort.

The Air Passage: Once we've got breathing down (and everyone thought that would be the easy part…) we move onto how the air leaves the body. I like the "water pump and the hose" analogy for this. The water pump is our air source and the hose is (any guesses?) the air passageway. In order to play higher we must speed up the air. If we want water to come out of the hose fast we can do one of two things; we can leave the dial on the water pump where it is and just put a thumb on the end of the hose (this makes the water squirt out at high pressure), or we can simply turn up the water pump and leave the hose alone. In the latter case, the water volume is increased immensely and whomever you are having a water fight with gets wet much more efficiently.

In order to carry this concept over to the trumpet we must be aware of what the throat is doing. Some find it helps to think of having an open space the size of a potato in the back of the throat. I find that, when we yawn, we encounter the best example of what we should be feeling when playing. In order to get this, listen for the sound you make when inhaling. Try and get as deep a sound as possible. This will mean that your throat is wide open and, as a result, when you exhale it will be easier to maintain this openness. One must be careful not to hyper ventilate when practicing this.

You'll find that, by doing this and supporting the air, the sound will open up. Most times a double vibration (double pitch) is caused by having a closed or tight throat.

The Embouchure: The simple version of this is; relax the lips and firm up the corners. If you say the letter "M" your lips will be in perfect position for your embouchure setup. The actual muscles of the lips should never be strained in order to make a sound. In order to prevent this, we use the muscles at the corner of the mouth to support the lips. In fact, I find that I use everything from the ears forward to support the lips. If you look at pictures of many professional trumpet players you will find this to be the case - especially those that do a lot of high playing. I practice buzzing without a mouthpiece in order to reinforce this concept. If your lips are tense you will get tired very quickly. Also, if your lip muscles are relaxed, you get a nicer sound.

Summary: In order to make a fire you need fuel, heat, and oxygen. If you take one of these away the fire doesn't exist. This is the same for sound production; air source, air passageway, and embouchure must all work in tandem. If one of these is not happening, then neither is the sound. Always take in a lot of air and, when playing, keep the airflow constant. You'll find this makes you a much happier trumpet player.

I first got my concept of a trumpet sound from listening to great trumpet players on recordings and live (as much as possible). It is important to remember that analysis alone will not help you produce a beautiful trumpet sound. Your ears are your best teacher and, if you listen to what others do as well as what you do, you will find that it comes more naturally.

One more thing: It is so easy for (especially trumpet players it seems) us to get caught up in what we can and can't do on a musical instrument. Playing a musical instrument is meaningless without the music. Remember that the music is always more important than one's vanity. Strive to make beautiful music as your first priority and the instrument will become easier to play.

Mike Herriott began playing the trumpet at six years of age. Born in England and raised in New-foundland by musical parents, he won numerous regional and national awards throughout his formative years as a musician. By the time he was eleven, he was already performing for large audiences and recording for CBC radio and television. Now an accomplished and respected musician in both the classical and jazz genres, Herriott is also widely recognized as a multi-instrumentalist. Living on Canada's West Coast, he is much in demand on trumpet, trombone, and bass, both on stage and in the studio. A musician of great versatility and ability, he has shared the stage with some of the world's finest musicians including Maynard Ferguson, Slide Hampton, Phil Nimmons, Pat LaBarbara, Tommy Banks, Hugh Fraser, Chucho Valdes, Kenny Wheeler, and Ian McDougall.