

The basics of brass: establishing secure technical foundations

Edward Maxwell

Introduction

This is a practical guide for teaching beginner brass, explaining some basic principles in a user-friendly, jargon-free way. There are books available that explain the physics and physiology of brass playing, but it's usually helpful to explain complex principles in simple language, especially when teaching young students. So if you don't know your glottis from your epiglottis and don't know whether the diaphragm is a muscle, a membrane or a muscular membrane (if there is such a thing), this guide may be for you.

I was once told by a senior brass teacher during a training day: 'Don't worry too much about developing technique or reading music – the most important thing is that students can play a few tunes they can recognise.' I profoundly disagreed. Music lessons cost parents a lot of money. If you were paying good money for football coaching, you'd expect your child to be developing specific skills, techniques and training drills from a professional – very different from having a kick-around in the park with your mates.

It's crucial to instil good habits from the start, so that technique and musicality can develop side by side. Frequently, a poor technique will hinder the expression of musical ideas. It's easy to coach students to work through the grades without these fundamentals in place. However, without secure foundations, the student will hit a dead end, and further progress will be impossible. The vast majority of students will not be pursuing a career in music, but with the correct guidance, all students should be left with a lifelong skill.

We often navigate a precarious course through the icebergs of bad habits. Some may be inconsequential, others catastrophic. If this resource appears to be unduly negative (lots of 'bad habit' alerts), it's because we need to be on our guard against bad habits even when everything seems to be plain sailing. It's important that we use lots of positive reinforcement with the students themselves: we can congratulate them on steering a safe passage while being quietly alert to potential dangers ahead. It's much better to gently nudge things in the right direction than having to make a huge, unexpected and disruptive change of course.

What are we trying to achieve?

When playing any musical instrument, we should be trying to emulate that most expressive and powerful vehicle for emotion: the human voice. Let's consider what we do when we sing:

- 1 We need to be able to produce and sustain a sound. These are the vowel sounds we make when we sing. This requires breath control.
- 2 We need to be able to change the pitch.
- 3 We need to articulate words with a wide range of percussive sounds – these are the consonants. With singing, these sounds are created with the lips and tongue.

When playing a brass instrument, the basic functions are very similar: we need to produce and sustain a sound, change the pitch and articulate notes with the tongue (unlike singing, we use the tongue alone and *not* the lips).

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The sound

‘There is nothing in a trumpet [or other brass instrument] to produce a sound. It will only make a noise if you drop it.’ John Wilbraham, trumpeter and teacher

All instruments need something to vibrate to make a sound. Brass playing can be particularly problematic because, rather than vibrating something external – a string, reed or drum skin, for example – we actually create the vibration ourselves, with our lips. Essentially, the instrument is an amplifier for the sounds our lips make, and our lips usually need a great deal of training to do this effectively. For something mechanical like a piano, sound production is easy. It makes no difference if you’re a concert pianist or a cat walking along the keyboard – it makes the same sound if you press down a key. The internet is awash with videos of cats and dogs playing the piano, but I’ve yet to see a pet producing a sound on a brass instrument.

Trying to buzz the lips without the mouthpiece is often a good way to set the embouchure (what brass players call ‘chops’).

Keep the lips level and slightly curled inwards against the teeth, which should be slightly apart and in line with each other (with most people, that means pushing the bottom jaw slightly forwards). Try gripping a pencil between your teeth so that it faces forwards, then tighten your lips around the pencil. Remove the pencil, pushing your lips a little tighter together so they touch, and then blow. This should create a ‘buzz’ on your lips.

Some teachers dislike this approach because it encourages students to start playing with closed lips, risking creating a rather pinched sound. It does, however, help to develop and strengthen the lip muscles and eliminate any reliance on applying the pressure of the mouthpiece onto the lips in order to create a sound.

Another common approach is to find a straw that fits inside the mouthpiece. Put the straw in your mouth, grip it with your lips so you set your chops around the straw, and blow. Slide the mouthpiece up the straw so that it touches the lips and then remove the straw. You should have a well-functioning embouchure.

It should be noted that teachers often talk about ‘blowing air through the instrument’. In reality, we’re actually making the column of air in the instrument vibrate, and we’re displacing the air already inside, rather than physically blowing air all the way around the tubing and out through the bell. However, this subtle distinction may be lost on a young beginner, and the image of the air moving through the instrument can be useful to encourage them to blow sufficiently: it makes a mental connection between the flow of the air and the flow of the music they are playing.

Bad habit alerts:

- 1 Don’t ‘smile’.** Pulling the lips back will thin the embouchure, resulting in lack of strength and stamina.
- 2 Don’t fold the top lip over the bottom lip.** The lips should be level with each other, and the embouchure should form a solid platform on which to rest the mouthpiece. Look in a mirror to check you can see equal amounts of top and bottom lip.
- 3 Don’t push the chin up.** Tightening the lips by pushing the chin up will restrict the lips’ ability to buzz and result in a thin, strangled sound. Try to keep the chin down.
- 4 Don’t sniff.** Breathe through your mouth. Your body’s natural way to take a deep breath is through your mouth. You need deep breaths to sustain a musical phrase, so get into the habit straight away.
- 5 Don’t puff out your cheeks.** Your facial muscles should be tight. Buzzing the lips without the mouthpiece will solve this – it isn’t possible to buzz with your cheeks puffed out. Buzz first, then place the mouthpiece on your lips as you continue to sustain the buzz. For players of low brass instruments, the facial muscles need to be much looser, but the cheeks should still ideally not puff out. The majority of trombonists and tuba players keep their cheeks firm. Speaking as a trumpet teacher, keeping students’ cheeks pulled in tight is non-negotiable. For low brass players this may move into the ‘negotiable’ category. There are, of course, exceptions to every rule. Very occasionally, you might come across a fine player who puffs out their cheeks, but they will play good despite, not because of, this. The odds are very much against you if you puff your cheeks out, and as a teacher it’s your responsibility to establish a good technique that doesn’t lead down a cul-de-sac.

Mouthpiece placement

Place the mouthpiece right in the centre (up/down and left/right) of your lips. The red of the lips must be enclosed by the mouthpiece. If you've used the 'blowing through a straw' method, the mouthpiece will almost certainly be central.

Bad habit alert: 'setting' mouthpiece into the lips – jamming it against the lips, rather than allowing it to lightly rest. **Solution:** Buzz first, and while sustaining this, place the mouthpiece on the lips.

Tonguing

As soon as buzzing is established, tonguing should be introduced. For me, this is normally in the first lesson. Tonguing *must* be mastered before tackling anything else – another non-negotiable aspect of basic technique.

Most tutor books introduce the concept of tonguing notes individually, but I think it's useful to introduce the idea of linking notes together, essentially dividing up a long note. Just as in speech, where one word smoothly flows into the next, so tonguing needs to have fluency. Think how stilted a talking robot sounds, because it lacks the ability to link words together fluently. So to begin with, avoid starting single notes with the tongue. The essential skill to master is the *flow* of the notes – think of the notes moving horizontally, rather than in vertical blocks.

Some simple exercises:

- 1 Form an embouchure (tell the student to get their chops in a 'buzzing position') and blow air silently through the instrument, without actually buzzing.
- 2 Now whisper 'da-da-da' very smoothly so there are no gaps in the sound – it feels as if your tongue is 'flicking' into the air.
- 3 Repeat this and blow a bit harder, so the lips start vibrating. The essential thing is to *keep blowing* and keep thinking 'da-da-da'. The sound will come, but it's essential to keep the air flowing and tongue moving mechanically.

Tonguing is a spectrum: articulation is not just a choice between 'tonguing' or 'slurring'. If the 'default' tonguing syllable is 'da', try 'ta' for a stronger attack. For legato tonguing, think 'la'. Before trying each one, form an embouchure and articulate the air without the buzz. There is no reason why you can't introduce different modes of articulation early on. Most tutor books suggest 'ta' as the first sound to articulate, but I generally find that leads to heavy, disjointed tonguing and often tongue-stopping (see below), so I prefer a gentler 'da' sound.

Bad habit alerts:

- 1 The lower jaw moves up and down as the student articulates notes.** This is a very common problem and indicates that the student is actually articulating notes with a 'pa-pa-pa'. They are opening and closing the lips and not using the tongue at all. Do not tolerate any movement around the mouth – the jaw does not move if you form an embouchure and whisper 'da-da-da...'.
2 Tongue-stopping. This is when you stop each note by slapping the tongue against the teeth, or the tip of the tongue comes between the teeth – essentially, articulating 'tart-tart-tart'. It gives a disjointed sound and disrupts the flow of the air (and consequently the music). This often results from a teacher using the analogy of spitting something from the end of your tongue (eg a hair or a tea leaf) to start a note. If you're not sure if a student is tongue-stopping – and it should be obvious by the heavy tonguing – get them to articulate the air down the instrument without a buzz. You'll hear a popping sound at the end of each note. To correct this, suggest a lighter 'da' attack.
- 3 Blowing each note in a separate burst of air.** You must imagine that you're dividing up one long note, in order to achieve musical fluency.

Analogy 1: think of a tap running and moving your hand across the water to momentarily break the flow. Blowing each note separately is like turning the tap on and off.

Analogy 2: you're working in a sausage factory, and there's a conveyor belt with one long sausage, which moves continuously. Your job is to keep slicing it with a knife as it moves forwards. This analogy is useful for the tonguing spectrum described above: for 'ta' you're using a big chunky knife; for 'la' you do very thin slices with a very sharp knife. But remember that the conveyor belt doesn't stop. (Unless you're playing staccato, but this shouldn't be taught at the beginning – keep stressing the flow of the music.)

Playing higher

To play higher, we need to make the air vibrate faster. There are three main ways of doing this:

- ▶ Blow the air more quickly.
- ▶ Arch the tongue.
- ▶ Tighten the lips.

Blowing faster is the most effective way to change the pitch initially. It also helps to instil the idea of the flow of the air stream.

The importance of the tongue position is often neglected by teachers, or regarded as an advanced technique. I think it's important to teach this from the start. The principle is that if you arch your tongue, you compress the air so it travels faster.

Analogy: if a river narrows, the water will move faster.

If you whisper 'aa-ee' or whistle from low to high, you can feel your tongue arching. If your student can do this while buzzing, the pitch will go up. It's very hard to develop an awareness of the tongue position – after all, you're not really aware of tongue movements when you talk. However, if your student repeatedly practises whispering 'aa-ee' (first without the buzz; then with it), it will come.

The lips naturally tighten when you try to play high, and over-emphasising the importance of tightening the lips can lead to a strangled, restricted tone in the high register. Remember that the lips should tighten inwards. Keep the corners down and don't smile.

Analogy: think of tightening a PE bag with a drawstring – the hole gets smaller – rather than stretching an elastic band.

Pitching

When students have the physical capability to create different pitches, it's sometimes hard for them to produce the right ones. As I alluded to previously, pressing down a particular key on the piano guarantees a particular pitch. However, a range of notes are available with any fingering or slide position on a brass instrument. Students need to 'sing' the melody in their head as they play, anticipating the intervals between the notes. When learning to read music, it's vital that they develop a sense of how the music should *sound* from the shape of the notes on the page. Encouraging them to sing a piece before they play it helps to develop secure pitching.

Posture

Ask students to sit or stand up straight, keep both feet flat on the floor, and not to cross their legs (this can impede the breathing). For forward-facing instruments, they should hold the instrument up and imagine they are projecting the sound to the back of a concert hall. Too often, students play to their feet. They should always hold the instrument up to their lips, rather than resting it on their lap and then contorting themselves to where the mouthpiece is.

Fingers should be curved, with the fingertips on the valve-tops and not hanging over them. Pressing the valves from one side can cause them to stick and in the long term can damage the valve by wearing it down on one side.

Brass teachers often have to teach the full range of instruments in the brass family, so always ask a specialist for advice. Here are a few common instrument-specific areas to consider.

Trumpet

The left hand takes *all* the weight of the trumpet. The right hand should not grip, but stay nice and relaxed in order to develop finger dexterity and avoid tension. I suggest that students place their right thumb between the first and second valves and keep a gap between the right hand and the leadpipe so the hand is curved as if holding a ball. My pet hate is students pushing the palm of their hand against the leadpipe and jamming the little finger into the finger hook as far as it will go, so the fingers hang over the far side of the valves. On Red Nose Day, I always stock up on red noses, which I give to students to hold when they play (the groove in the red nose slots neatly into the leadpipe), so that their hand is in a nicely curved position. My preferred little finger position is resting on top of the finger hook.



Horn

There are mixed opinions on the right hand position for beginners, but most teachers allow students to hold the bell on the near side with the palm of the hand. It's very tempting to rest the horn on your lap, but this is not a good habit – see the note above about not moving your lips to the mouthpiece, but moving the mouthpiece to the lips. Keep the right shoulder to the lips. Keep the right shoulder back and remember that the horn faces backwards, not sideways.

Trombone

Hold the slide with the fingertips (as if holding a paper aeroplane), rather than gripping with a fist. The left hand takes the full weight of the instrument, leaving the right hand and arm free to move the slide. A common danger for smaller children is, when stretching to reach sixth position, the whole instrument moves to the right and the mouthpiece consequently moves to the side. Their arms will of course grow, but you don't want them to be playing from the side of their mouth in the long term. On balance, you may have to suffer a sharp C until their arms grow.

Euphonium and tuba

The valve technique is the same as the smaller members of the brass family. Keep your back straight, hug the instrument and hold the mouthpiece up to your lips rather than stretching up or down to it.

Further development

Long notes

These are great for strengthening the facial muscles and developing the sound quality. Alternating quiet and loud notes, or adding crescendos and diminuendos, help to develop control over the tone. I like to do timed long notes with my students, and I keep a chart in their practice notebooks, so they can see their progress and get a reward if they beat their record.

Lip slurs

Lip slurs are the best workout for a brass player: they help to develop control, range and flexibility, and build up strength and stamina. The term 'lip slur' is arguably something of a misnomer – the arching of the tongue can control the slur in tandem with the lips. In fact, by minimising the lip movement, the embouchure will remain a solid muscular platform and will not tire so quickly. Whistling is a good model for the tongue movement. Otherwise, whisper 'aa-ee-aa'. A consistent air flow is essential, so the notes glide smoothly and don't bulge. Don't bump from one note to the next.

Analogy: imagine you're cycling up and down small hills, not bumping up and down steps. Keep the momentum of the air and sound between the notes.

Breathing and support

Take deep breaths through the corners of your mouth. Your stomach should expand when you breathe in.

Bad habit alerts:

- 1 Don't sniff.**
- 2 Don't suck air through the mouthpiece.** If you do, you'll get a mouthful of valve oil fumes and unpleasant bacteria (if you haven't cleaned your instrument for a while).
- 3 Don't breathe after every note and don't take unnecessary breaths that disrupt the flow of the music.** Breathe in phrases, as if you are singing – think of each breath as the punctuation in a musical sentence. Take *deep* breaths and then use the air to keep the music flowing.

Analogy: if you're going on a long drive, you'll fill your car up with petrol and go. You don't stop at every petrol station along the way.

It's usually best to explain the breathing process in a practical way, without going into complicated physiological explanations that a child rarely understands. I've heard children say 'I need to use my diaphragm', because that's what their teacher has told them, even if they have no idea what this actually means.

Analogy 1: imagine you're filling an empty washing-up liquid bottle with water. Squeeze the air out of the bottle and put the nozzle in a bowl of water. As the bottle expands, water is sucked into the bottle. In exactly the same way, if you expand your body by pushing your stomach and chest out, this sucks air into your lungs. You now have a full bottle which you want to squirt at your brother or sister. If you grip the bottle at the bottom and squeeze, you'll force out a powerful jet of water. In the same way, if you squeeze your tummy muscles, you will blow out a consistent stream of air. Using these muscles is what we call breath support, and they should be tight all the time you are blowing – this is what controls the flow of air.

Analogy 2: imagine your body is a balloon inflating. It obviously expands as it fills up with air. If you let go of the end, the rubber pulls inwards to force the air back out of the opening (and it even buzzes like playing a brass instrument).

It might seem strange teaching someone how to breathe when they've done this continuously since they were born, but you can still develop a better awareness of the body's natural processes. Yawning is a natural way of taking a deep breath, so get a student to fake yawn (hopefully they aren't bored enough to need a real one) to feel the process. To locate your stomach muscles, put your hands on your stomach and cough. You'll feel muscles 'kick'. If you want to play a high or loud note, these 'coughing' muscles can create an extra burst of air.

It's not often that you can do some practice in bed, but lying down in a relaxed way, feeling your body expand as you breathe in will develop an awareness of the breathing process. Watch a cat or dog sleeping in front of a fire – see how its body expands as it breathes in.

Do not touch a child to check their breathing. Ask them to push their own hands against their stomach, to see how they move when they inhale and exhale.

Warm-up

A warm-up is essential to make sure that each of these elements to brass playing is working smoothly, so that we can play in a relaxed way, without tension in our body and undue mouthpiece pressure on the lips.

The warm-up should incorporate:

- ▶ Some basic physical body exercise – check that the student is awake and able to take deep breaths.
- ▶ Buzzing
- ▶ Long notes
- ▶ Lip slurs
- ▶ Tonguing

Think of this as routine maintenance. Weak areas can then be consolidated with more focused technical exercises.

Sharing ideas

We often teach in a vacuum and don't always have the opportunity to share ideas. Every student presents a unique challenge that requires a customised approach, so the more diversity of tools at our disposal, the easier it is to find creative solutions to particular problems. Don't be too dogmatic – if one method doesn't work, try another. We should be sharing ideas and continually re-evaluating our teaching. Always be adaptable and open-minded to new ideas and discuss your teaching with colleagues. Be prepared to offer advice, and remember that asking for help is a strength, not a weakness.