

SOUND THE TRUMPET

HOW TO BLOW YOUR OWN HORN



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Write and Understand Written Music and
All About Trumpet*

CHAPTER 1 - WAR AND WORSHIP: A BRIEF TRUMPET HISTORY

History doesn't repeat itself, but it does rhyme — Mark Twain

This Chapter Covers:

- Origins of the Trumpet
- Oldest Known Trumpet
- Uses of the Trumpet
- Trumpets Today
- Trumpets Tomorrow

Terms to Know:

- crook:** a length of tubing used to change the key of a brass instrument.
- harmonic series:** a series of notes which a valveless trumpet can play. Large distance between pitches in the low in the range, small distance between the high pitches.
- natural trumpet:** a valveless, keyless trumpet.
- keyed trumpet:** a trumpet with 1 to 12 keys like a saxophone.
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A Trumpet for Worship or War

In the mid 1300s in Krakow, Poland a young man climbs a high church tower, its stone steps cold from the chill morning. He clutches a trumpet to his chest to keep it warm. It's early but he is awake and excited. This morning he'll play the Hymn to the Virgin from the top of the high church tower. It is the only song he knows well. He's been practicing it for months.

Just over the hills to the east the Mongol horde rides toward Krakow, thirsty for pillage and plunder. The trumpeter climbs the stairs, oblivious, whistling the tune he is about to play.

He climbs to the top of the tower, steps to a tiny stone balcony, turns to the east, waits a few moments, then lifts his horn to his lips when the sun flares at the horizon. The *Hymn to the Virgin* springs forth loud and powerful. The song is to be played four times, once to each of the four directions. He finishes the fourth repetition and is pleased with himself for not making any mistakes. He turns to go back down the dark stairwell. A large dust cloud on the eastern horizon catches his eye.

He turns eastward and shades his eyes as he peers into the bright sunrise. Are those riders? And so many? For a second, he can't believe what he is seeing. He's heard talk of some trouble southeast of his village, a long way off. Could these be the same raiders? Here, and so soon? He stands frozen, his horn dangles limply from his hand. He gives a quick shake of his head in disbelief, looks one more time at the cloud of dust on the horizon and lifts his horn to his lips again.

He hasn't yet learned the songs for alarm, fire, or attack. The *Hymn to the Virgin* is the only arrow in his musical quiver. He points the bell of his horn toward the center of Krakow and blasts as loud as he can. The fifth time he plays the song, it's faster, even louder, and with much urgency. It wasn't until the seventh or eighth repetition that people in the city suspect something is awry. On the fourteenth repetition the call is abruptly cut short mid-song.

Back at the tower, the young man's lips had begun to get sore after the seventh repetition, and now, after thirteen repetitions, his lips feel like ground mutton: pink, soft and painful. *But thirteen is an unlucky number*, he thinks. *Maybe one last repetition before I head for cover*. He lifts the horn and blows one last time.

Below him on the ground a small man on a large horse fits an arrow to his bow, draws back the feathers to his ear and lets the arrow fly. The warning trumpet blast cuts off abruptly and the young man falls into the dark stairwell. But the archer was too late. The brave trumpeter's calls had saved many lives and most of the city. Today, in honor of the trumpeter's sacrifice, the same Hymn to the Virgin is sounded from the same church tower and is stopped mid-song, just where it stopped that day over 700 years ago.

Just the Facts

The trumpet player of Krackow embodied two of the oldest uses for trumpet: war and worship.

Because of their loud volume and the ability to carry messages over long distances, trumpets have been associated with war as far back as we can remember. And for perhaps the same reasons, trumpets also have been used in worship.

Ancient trumpets are simple elongated tubes of bone, wood, or metal often with a flared bell at the end. The didgeridoo, an ancient Australian trumpet still in use today, often has no bell (for more on didgeridoo, see "How Do You Do, Didgeridoo?" on page 249). Some trumpets, like the Alp horn and cornettos, have gentle curves in them.

To the right is a picture of John Kenny playing the carnyx, an ancient Celtic trumpet made of bronze with a 5 octave range (that's a lot!). It has a boar's head at the top and was used from around 200 BCE. It could be heard when the Romans invaded the British Isles and the carnyx has been depicted in art as far away as India.



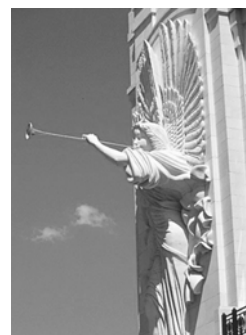
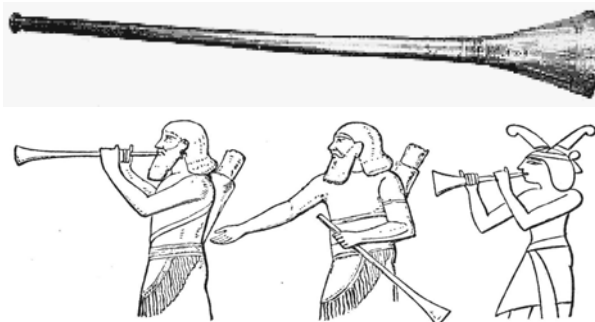
www.carnyx.music.scotland.com/carnyx.htm

In Tibet a type of trumpet used for worship is the *dung*, a trumpet almost fifteen feet long. It's used in ceremonies and its sound is meant to scare off evil spirits. I don't know about you, but a 15 foot dung would probably scare me.

In the ancient Olympic Games there was a trumpet competition as well as the athletic competitions, and it's likely the competitors played naked, just like the athletes did. In Rome, Tibet and Israel, the trumpet was considered so sacred that only priests were allowed to play or touch them.

The oldest trumpet we know of that is still in existence was played in 1353 BCE. It was found in King Tut's tomb. It's 120 cm long (about 2 feet) and is a conical tube which flares to a 26cm diameter bell (about 10 inches). If you want to hear how this ancient thing sounds, go to the sound files for this book at www.sol-ut.com.

Example 1.1 King Tut's trumpet and Egyptian pictographs of trumpet players. Angels play a similar kind of trumpet.



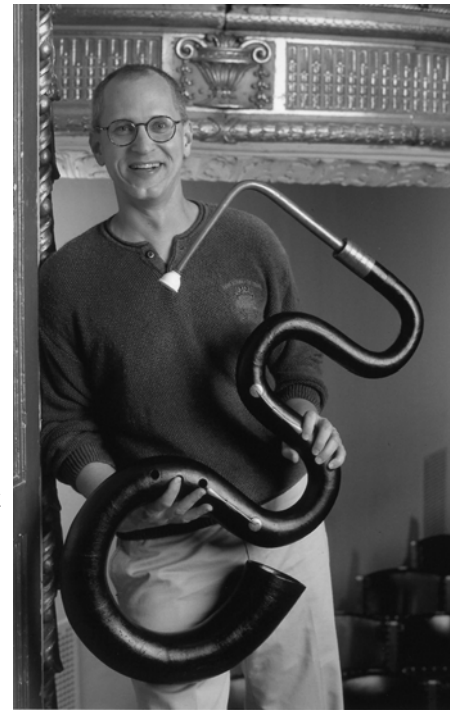


Professor David Staff plays a cornetto (Guildhall School of Music).

As you can see, trumpets didn't always have valves. For thousands of years they were simple straight tubes with a bell at the end. The tube could be made from wood, metal, cane, anything tubular (radical and gnarly tubes were discovered later).

Cornetti are trumpets made of wood and they have little similarity with the modern cornet as the name suggests. Just as with other trumpets, the sound is created with the buzzing of the lips. Cornetti have finger holes along their length with which the pitch is changed, and in this way they are similar to the recorder, but as with all trumpets, it is the lip buzz which provides the sound.

The *serpent* to the right is a very interesting early instrument which also uses vibrating lips to produce its tone. Invented in 1590 by Frenchman Edme Guillaume, the serpent has a much lower tone than the cornett pictured above. The serpent is one of the oldest instruments still in use today. You can hear Boston Symphony trombonist Douglas Yeo play this instrument at <http://www.yeodoug.com/articles/serpent/serpent.html>.



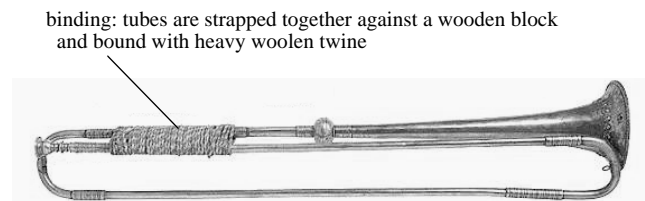
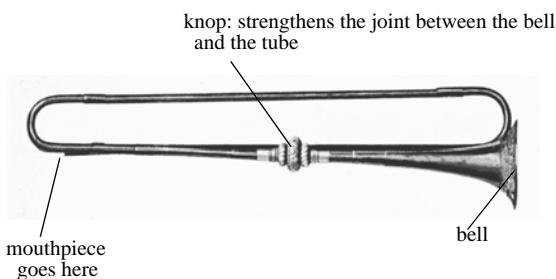
Douglas Yeo with church serpent in C by Baudouin (Paris, c.1810, pearwood, two keys) Symphony Hall, Boston

It wasn't until the 1300s that someone thought to bend the straight trumpet into loops. The result was a trumpet about twice as long as the modern one, which we now call a *natural trumpet*. They were easier to hold than the long cumbersome straight trumpets which they quickly replaced. Natural trumpets are similar to the modern bugle, being just a simple length of tubing wrapped around itself a few times with a mouthpiece at one end and a bell at the other.

Around the middle of the 1700s holes were added at critical points in the tubing. These holes allowed the performer to tune out-of-tune notes.

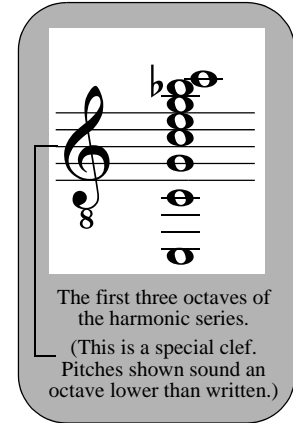
photo © Michael Lutch, courtesy of Douglas Yeo (yeodoug.com). Used with permission. All rights reserved.

Example 1.2 Two natural trumpets.





Trumpets without valves of some kind are limited to notes in the harmonic series, also known as the overtone series. The harmonic series is a naturally occurring phenomenon; the same ratios of the harmonic series can be seen in the petals of a flower, a nautilus shell, and other beautiful things in the physical world. The harmonic series is a fairly complex idea. All you need to know about the harmonic series for our purposes is that between low notes there are large gaps in pitch. For instance, the first two notes of the harmonic series are an octave (8 diatonic notes) apart. As you go higher in the harmonic series, the pitches are closer together. You can see this in the musical notation of the harmonic series to the right. See the big gap between the lower notes? A natural trumpet can't play the notes within the gaps at the low end of the harmonic series.



Natural trumpets and keyed trumpets are limited to one tonal center, or key signature, because they are a fixed length. The length and diameter of tubing determines the pitch, so the only way to shorten or lengthen your instrument was to insert longer or shorter piece of tubing (a *crook*) to get a different starting note, or tonal center.

Keyed trumpets solved this problem a little bit. Keyed trumpets appeared in the late 1700s, though their creation is somehow credited to Anton Weidinger of Vienna, in 1801. Keyed trumpets had anywhere from 4 to 6 keys much like saxophones keys, though smaller. These keys allowed the instrument to play other notes in the harmonic series. Later, around 1810 the keyed bugle came into use, and it could have as many as 12 keys.

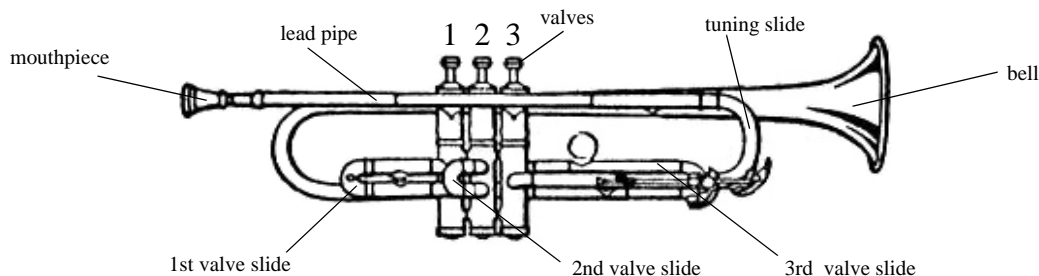


1845 Graves keyed bugle restored by Robb Stewart. See more of Robb's work at <http://www.vintagecornets.com>

The valve changed all that. Also invented in the early 1800s, the valve was a revolution in trumpet design. It was a system that improved upon the crook idea without doing away with crooks. All the crooks were on the horn already, and the valve simply directed the air into the crook of the right length.

Take a look at your horn or the diagram that follows. Trace the direction of air flow with your finger for these valve combinations. Open (no valves pressed): the air goes directly through the valves and out the bell. Second valve: the air takes a detour through the shortest slide on the trumpet, the second valve slide, then out the bell. First valve: the air takes a detour through the second longest slide on trumpet, the first valve slide, then out the bell. Third valve: sends the air through the longest slide on the trumpet, the third valve slide, then out the bell. Combinations of two or three valves will send the air through two or three slides, then out the bell. Pretty ingenious, no?

Example 1.4 Major parts of the modern trumpet. There are 8 valve combinations. Can you figure them all out?



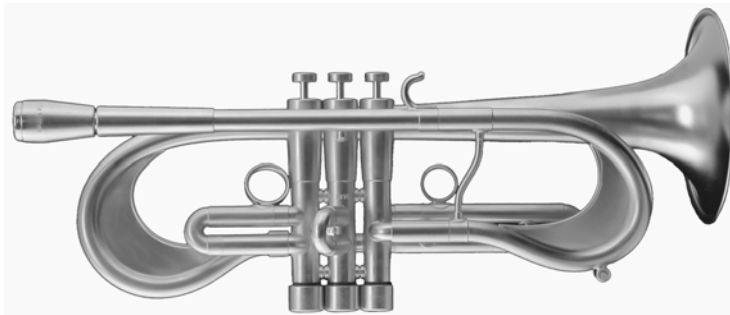
If you can get a good tone on your horn, experiment with your valves to find the relationship between the valve and the sound. For more information about getting a good sound on trumpet, see “What The Buzz is About” on page 38.

Trumpets Now and In the Future

Basic trumpet design has changed little since 1815, but improvements have been made not only in quality, but in production, too. There are many more trumpets in the world now than there were in 1815, that’s for sure. And despite what is said by a few people who live with beginners, that’s a great and beautiful thing.

Innovations and experiments continue. Dave Monette, a trumpet maker in Oregon has a creative approach to modern trumpet design. His horns range from a classic *Bb* model to the custom made *Raja Samadhi*, like the one on this book’s cover. The unique sound of the Monette trumpet has generated some controversy in the music and trumpet community. Jazz musicians Wynton Marsalis and Terence Blanchard play a Monette horn, as do classical players Charlie Schlueter, and Manny Laureano. See full color pictures, videos of great players, and learn more at the Monette web site: www.monette.net

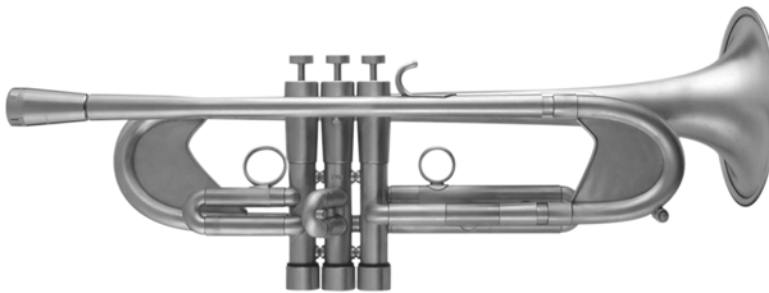
Example 1.4 Here are three Monette horns. Can you find the mouthpiece for the decorated Monette *Raja Samadhi* on the front cover of this book? It’s built in.



Prana Flumpet
originally designed for flugelhorn
master Art Farmer.



Prana Piccolo Trumpet



Ajna II Bb Trumpet

Innovations and Expectations

It’s human nature to tinker and invent, to mess around with things. This leads to different musical styles, different art, different technology, and of course different instruments, in this case trumpets.

Bobby Shew, a player and teacher of phenomenal talent sometimes uses an instrument called the Shew Horn, also made by Monette. It’s a trumpet with two bells. A fourth valve changes which bell the sound

comes from. With a mute in one bell, Shew delivers some amazing solos that sound like a tight two-player duet.

Don Ellis, a trumpet player active in the 60s and 70s used a quarter-tone trumpet. The smallest interval between notes in Western music is called a half step. Ellis' trumpet used intervals of a quarter step. The sound is strange and even a little unsettling, but still very cool. Even thirty years later, the sound of the quarter tone trumpet is still out there on the edge. To find a recording of the quarter tone trumpet, see "Notes From the Edge: Avant Garde" on page 34.

Expect more inventions and improvements in time. Who knows? Maybe you'll be the new inventor of a horn that will become wildly popular. If you're interested in making instruments, here are some books to explore:

Book/Article Title	Author
<i>Musical Instrument Design: Practical Information for Instrument Making</i>	Bart Hopkin
<i>Making Simple Musical Instruments</i>	Bart Hopkin
<i>Make Your Own Electric Guitar</i>	Melvyn Hiscock
<i>The Art of Violin Making</i>	Chris Johnson, Yehudi Menuhin, Roy Courtnall
<i>Making Gourd Musical Instruments: Over 60 String, Wind and Percussion Instruments & How to Play Them</i>	Ginger Summit
<i>Making Musical Instruments by Hand</i>	Jay Haviqhurst

You don't have to be a whiz inventor or someone with a metal shop to make your own trumpet. Experiment with an old piece of garden hose. Chop it off at about 3 feet, stick a mouthpiece in one end, and buzz. For a higher sound, cut the hose shorter. Twirl it around your head as you play. If you live near the ocean, bull kelp will also make a fun trumpet and if dried correctly it can last years.

Up Next

One of the very best things you can do to enhance your abilities on trumpet is also the easiest and most fun! It's listening. In the next chapter you'll get lists of some of the best recordings of trumpet music ever made. It's vital that you get the trumpet sound in your head and in your soul. If you know what a trumpet can and should sound like, it will be easier to pull those sounds out of the horn when you play it yourself. The next chapter is meant as a reference, so if you're antsy to get started playing, skip it and get on with Chapter 3, but don't neglect your listening library.