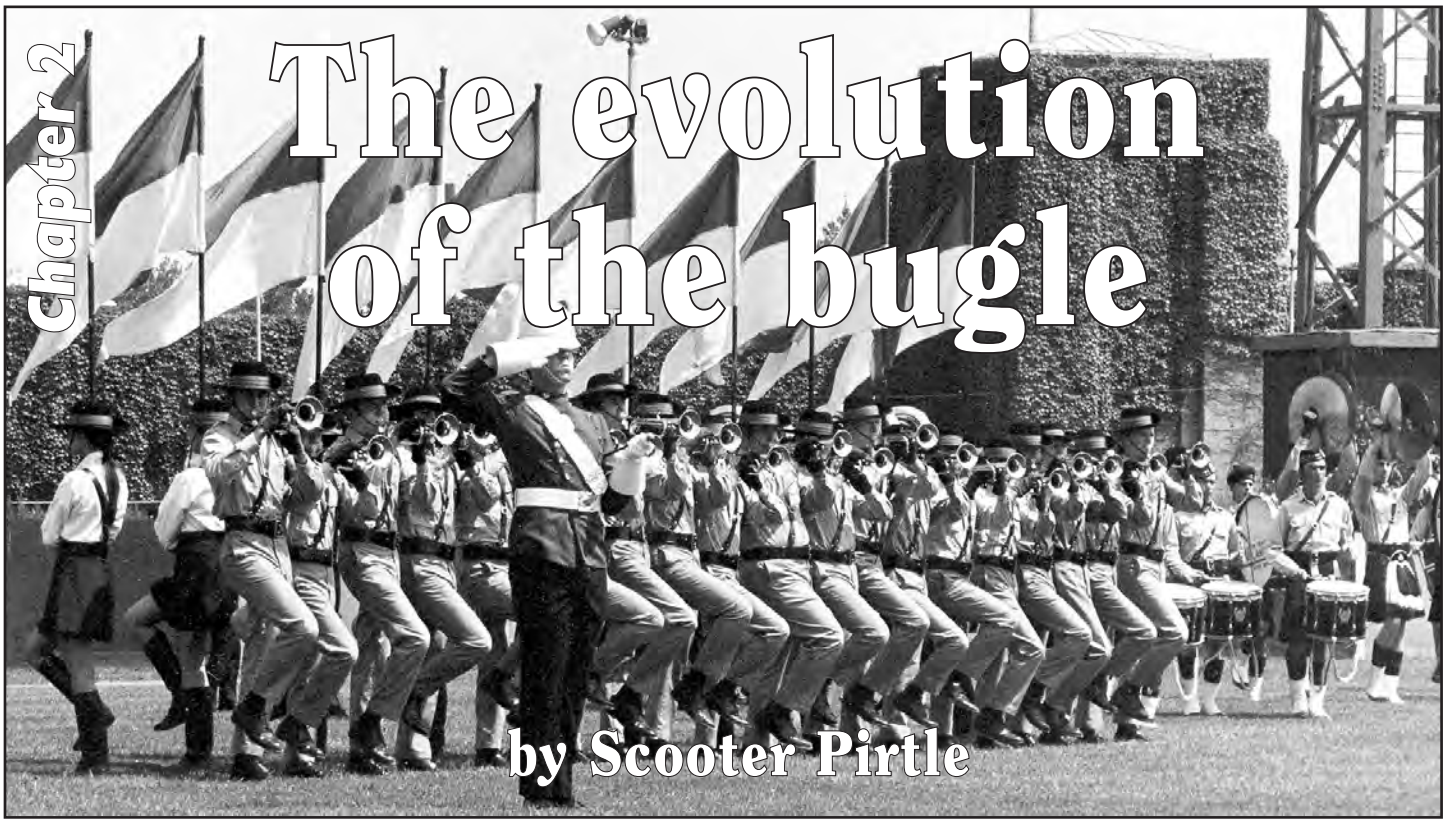


Chapter 2

The evolution of the bugle

by Scooter Pirtle

▲ *Introduction*

When one thinks of the evolution of the bugle used by drum and bugle corps, a timeline beginning in the early 20th Century might come to mind.

While the American competitive drum and bugle corps activity technically began with the American Legion following the First World War (1914-1918), many innovations had already occurred that would guide the evolution of the bugle to the present day and beyond.

Presented in this chapter is a narrative on important events in the evolution of the bugle. As this chapter is read, a recurring theme may be noticed. During the 19th Century, there are several occurrences of bugle ensembles applying radical design and voicing configurations that resemble, on a smaller scale, the methodical evolution of drum and bugle corps competition in North American.

As the present-day drum and bugle corps activity ponders how it will adapt itself to the future, it may prove beneficial to review the manner by which similar ensembles addressed their futures over a century ago.

A very brief history of the trumpet and bugle through the 18th Century

▲ *Ancient rituals*

Early trumpets bear little resemblance to trumpets and bugles used today. They were straight instruments with no mouthpiece and no flaring bell. Used as megaphones instead of being blown, these instruments were used to distort the human voice enough to "dispel evil spirits."

Trumpets were often representative of male virility and were played only by males. Percussion instruments, representative of the womb, were often performed exclusively by females with their bare hands. [1]

Ancient trumpets were used at religious ceremonies, magical rites, circumcisions, burials and sunset ceremonies -- to ensure that the disappearing sun would return.

Women were sometimes excluded from any contact with the instrument. In some Amazon tribes, any woman who even glanced at a trumpet was killed. [2] Trumpets such as these can still be found in the primitive cultures of New Guinea and northwest Brazil, as well as in the form of the Australian *didjeridu."* [3]

Throughout ancient civilization, the color red was associated with early trumpets. This could probably be explained by the presence of blood at the various "rites of passage" at which these instruments were used.

The color red remained with music through the centuries, even being retained in many of the uniforms of present-day military musicians.

Other aspects of military field music could have also evolved from ancient rituals. Specifically, the use of trumpets during

BELVEDERES, Schuylkill Haven, PA (approx. 1972).
Photo by Moe Knox from the collection of DrumCorps World.

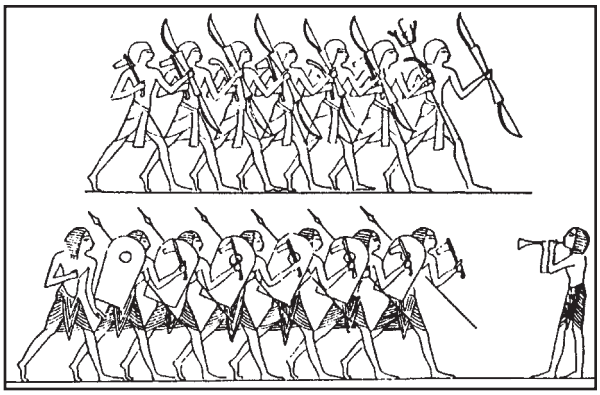
FLAMINGOS, Salem, OR (1974).
Photo by Greg Coville from the collection of Drum Corps World.

EMERALD GRENADEARS, Rockaway Township, NJ (approx. 1975)) .
Photo by Joseph Zepko from the collection of Drum Corps World.

military burials and at sunset is a concept still utilized by American and European military.

▲ *Early applications of the trumpet*

The military culture of early civilization utilized instruments for the purpose of conducting war. Specimens of ancient trumpet-type devices are documented in nearly every culture, including those of the Ancient Egyptians[Figure 1], Assyrians, Israelites, Greeks, Etruscans, Romans, Teutonic Tribes, Celts, as well as Asian cultures. These instruments were used for religious ceremonial functions and as military signaling devices. [4]



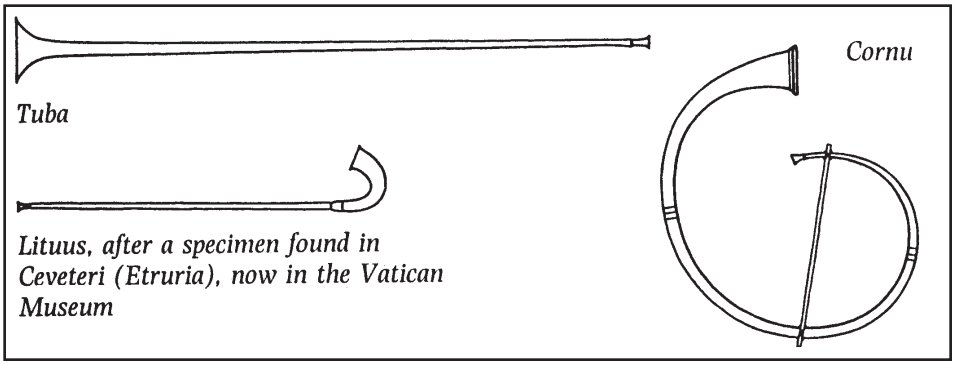
[Figure 1] -- Marching Theban troopers with trumpeter. Illustration from Edward Tarr's The Trumpet.

The Bronze Age of the Teutonic tribes yielded the mysterious *lur*. Little is known of the purpose of this instrument excavated in pairs from the moors of Sweden, Denmark, North Germany and Ireland. They were cast in brass and demonstrate remarkable craftsmanship. These instruments utilize a conical bore similar to an animal horn, but feature an ornamented flat disk instead of a bell flare. [5]

Military music produced by other early trumpets were often little more than one or two crude pitches that were produced by the vibration of the player's lips. These instruments were used to maneuver soldiers into battle and announce victory or retreat.

Greeks included trumpet playing in their early Olympic games. Instead of musicality, these signalers played a *salpinx* and were more likely adjudicated on the greatness of their volume and endurance. A trumpeter named Achias won Olympic honors three times and had a column of honor erected in his name to celebrate his excellence. [6]

Signal musicians used as an integral part of a military organization appear first in the Roman Legion. These musicians, called *aenatores*, utilized a wide variety of instruments derived from the Etruscans, [Figure 2] each with a specific function.



[Figure 2] -- Tuba, Littus and Cornu used by Roman Military. Illustration from Edward Tarr's The Trumpet.

A collection of 43 signals for these instruments are evident by AD 200 in the Roman Army. Standardized signals fell out of favor after the demise of the Roman Empire, not to appear again until the late 18th Century. [7]

▲ *The trumpet's use in the Bible*

The trumpet served an important function throughout the Bible as an instrument of communication and great fanfare.

The word *trumpet* can be found in over 60 locations in the King James Version of the Bible. The vast majority of these references were somewhat erroneously translated from the Hebrew word *shofar* (ram's horn). However, at least one specific reference is made to a metal "trumpet" in the tenth chapter of Numbers.

In Numbers 10.2, God commanded Moses to make two trumpets of silver for use by Aaron and his descendants to provide signals and directions for his journeying camps. The method of construction mentioned in the Bible for the instruments paralleled closely the construction methods of Egyptian trumpets created centuries earlier.

In the fifth chapter of Joshua, God instructs Joshua to attack the city of Jericho with seven priests, each bearing a *shofar*. The use of these instruments with the accompaniment of shouting soldiers caused Jericho's protective walls to crumble.

Gideon utilized trumpets in a similar manner, but on a much larger scale. Supplying each of his men with a *shofar*, three companies of 100 men chanted and blew their trumpets as they circled the Midianites' camp. As described in Judges 7.16, the commotion was sufficient to chase away the Midianites.

The trumpet was also used as a means of fanfare in the Bible. Mentioned in II Chronicles 5.13, the dedication of Solomon's temple was celebrated with 120 priests playing trumpets, "It came to pass, as the trumpeters and singers were as one, to make one sound to be heard in praising and thanking the Lord . . ."

The trumpet also plays a crucial role in the book of Revelation. In chapter 8, the end of the world is sequentially signaled by seven angels, each bearing a trumpet. As the seventh angel sounds the trumpet, the world ends, becoming one of the kingdoms of the Lord.

Military music from the Middle Ages through the 18th Century

Medieval musicians did not leave an overwhelming amount of evidence regarding their musical instruments, but constant

BRASS FACTORY, Alliance, OH (approx. 1982).
Photo by Ed Ferguson from the collection of Drum Corps World.

CATHOLIC DAUGHTERS OF AMERICA, Butler, PA (approx. 1975).
Photo by Dick Deihl from the collection of Drum Corps World.

BLUEWATER BUCCANEERS, Sarnia, ONT (approx. 1972).
Photo by Paul McCusker from the collection of Drum Corps World.

contact with the Oriental and Roman cultures likely impacted the type of instruments they used. Animal horns, including large steer horns, were also known to be in common usage.

As Germanic tribes began to become skilled metal workers, man-made trumpets and horns, featuring the distinctive conical bore associated with animal horns, were being fabricated and used.

Military calls had disappeared along with the Roman Empire. It is believed that the reintroduction of military music occurred during the Crusades (11th, 12th and 13th Century) as Europeans were exposed to the Saracens. As the third Crusade progressed, the Europeans venturing toward the Holy Land had already adopted the instruments and musical customs of their enemy.

It was during this time that straight trumpets, field drums and kettle drums were first incorporated into European military tactics. [8]

Saracen military bands were used in at least two distinct manners. They were used to initiate "psychological warfare" by being noisy and sounding fierce. It was intended that these loud and crass ensembles would implant some degree of terror in the hearts and minds of the enemy prior to battle. [9]

It seems likely that the enemy would associate the level of intensity demonstrated by these ensembles as a means of measuring the resolve of the troops they represented. In addition to invoking terror, these ensembles also provided important military signals to the troops.

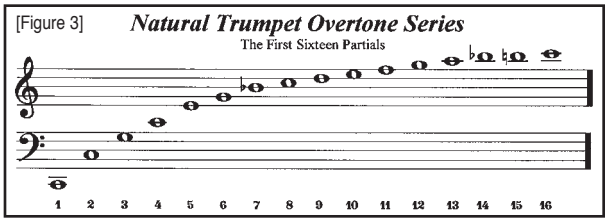
By the 15th Century, the fife and the drum had become the mainstay of the foot soldier. As signalers, the musicians were elevated above common soldiers and often served as commander's aides, emissaries, sometimes even battlefield diplomats and negotiators. [10]

During this time, European armies were raised and disbanded as needed. As a result, there could be an immediate overabundance or shortage of musicians at any given time. This caused understandable friction among town musicians who resented discharged military interlopers seeking musical employment. As a result, music "guilds" or unions emerged for the purpose of keeping out itinerant musicians. [11]

The philosopher Machiavelli wrote of the Italian military's use of the trumpet, drum and flute in 1521. In his *Libro della arte della guerra,* he suggested that the trumpets used to signal the cavalry should be of a lesser sound from those used by the infantry. [12] It's unclear if this suggestion led to the pitch variety of military bugles of the 18th and 19th Centuries.

However, as the infantry began to utilize trumpets, many military cultures chose to separate the keys of the instruments by four steps between infantry and cavalry -- a critical trait that would have a significant impact on American drum and bugle corps.

[Figure 3] ***Natural Trumpet Overtone Series***



The earliest known military signals captured in musical notation are believed to be part of Janequin's composition depicting the French's military victory at Marignana in 1515. This piece, *La bataille*, offers trumpet calls and percussive effects. [13]

By 1544, descriptions of the specific trumpet signals used to issue commands were prepared for the British Army as it waged its French campaign. Trumpets appear to have been exclusively used by the British cavalry, while drums were still used to signal the foot soldiers. [14]

There is evidence of German cavalry using trumpets and kettle drums in illustrations prepared in 1566. The Germans are thought to be the first to provide instruction books on trumpet calls around 1600. These texts included music notation and were prepared by Danish court trumpeters Hendrich Lübeckh and Magnus Thomsen. [15]

In 1623, Court trumpeters were enfranchised as "Imperial Guild of Court Trumpeters and Kettledrummers" in Germany. [16] The guild resulted in all-brass cavalry bands that were eventually exported to all other European military. [17]

▲ *The trumpet and the buglehorn*

The trumpets used by the military during the mid- to late-18th Century were comprised of a tube of brass that was cylindrical for at least two-thirds of its length. A flaring occurred during the last third of the length of tube. This tube was coiled once and played by a cup-shaped, removable mouthpiece.

These trumpets were available in several keys, most often made between the keys of "F" through "B-flat." [18] These instruments were twice the length of modern trumpets.

▲ *Natural trumpet overtones*

The extension of the playable range of the trumpet [Figure 3] evolved slowly. Initially, European trumpeters of the 14th Century would have reached, but not surpassed, the fourth partial.

During the next 200 years, players extended their range to the thirteenth partial. Trumpeters began to specialize as upper or lower register players, responding to the requirements of the composers at the time.

The most radical change to the trumpet occurred when systems of valves were created in the early 19th Century that, in effect allowed the instrument's length to be instantly changed by the player. This concept permitted future trumpets to be shortened by half the length of "natural" instruments since valves artificially enabled the instruments to play notes that were otherwise available only from the upper partials of the longer instruments.

Other than the different valve systems and their effect on the length of the instrument, the trumpet remains virtually unchanged in its basic definition to this day. [19]

Evolving from German hunting horns, buglehorns were initially known as "flügelhorns" or "winged horns" because they were played on horseback during the hunt by the "flügelmeister," an official who directed the "wings" of the ducal hunt. [20] These instruments were adopted by the military during the Seven Years War (1756-63).

The moniker "buglehorn" originated from an old French word, "bugle," that was derived from the Latin word "buculus," which denotes a young bull. Since early signalhorns were made of animal horns, including steer

IMPERIALS OF ST. PATRICK, Milwaukee, WI (approx. 1971).
Photo from the collection of Drum Corps World.

DELTA BRIGADE, Little Rock, AR (approx. 1999).
Photo by Mike Aycock from the collection of Drum Corps World.

GOLDEN CRUSADERS, Southington, CT (approx. 1972).
Photo by Moe Knox from the collection of Drum Corps World.

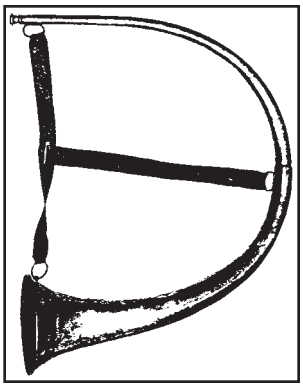
horns, the name "bugle" is intended to represent both the appearance and origin of the instrument. [21]

The buglehorn was fundamentally different from a trumpet and was manufactured in several shapes. The bore of the buglehorn was conical or cone-shaped, instead of cylindrical as with the trumpet.

The mouthpiece was funnel-shaped, instead of being cup-shaped as with the trumpet. The sound of the buglehorn would be "darker" or more mellow than the trumpet, although a buglehorn could be made to "bray" nearly as bright as a trumpet.

Buglehorns were available most often in the keys of "D" or "C," but the key of "C" seems to be rather prominent. The notes available to the buglehorn were fewer than those available to the trumpet because the buglehorn was half the length of a natural trumpet in the same key.

The trumpet and buglehorn appear to be two distinctly different instruments, but were both played essentially the same and both could be mastered by one performer utilizing very similar performance techniques. [22]

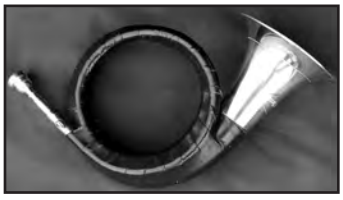


[Figure 4] -- Hanoverian buglehorn (18th Century). From New Grove Dictionary of Musical Instruments.

Evolution of the military bugle in the 19th Century

▲ *Trumpet and buglehorn's use in the American Revolutionary War*

Prior to the American Revolution (1775-1783), Colonial Volunteer Militia Cavalry Units were organized by the individual colonies. These ranks were filled with able-bodied men between 18 and 45 years of age. Musicians were included in these ranks and were sometimes freed slaves that were not permitted to "bear arms."



[Figure 5] -- Buglehorn c. Colonial America. Hunting horns of this type were used by light infantry and rifle regiments from about 1750 to the 1800s. *From the collection of Ron DaSilva.*

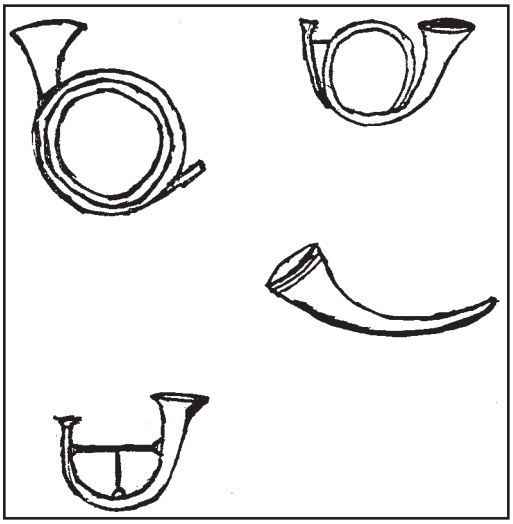
Finances permitting, natural trumpets (sometimes with decorative tabards) were utilized as signaling instruments. The presence of trumpeters in early American militias is confirmed by existing muster rolls. [23]

Foreign forces occupying North America during the American Revolution introduced buglehorns [Figure 5] to Colonial America. One of the buglehorn types of this period is nearly identical to the hunting horn and the natural horn. However, the buglehorn could be found in other shapes.

The Prussian buglehorn, later adopted by the Electorate of Hanover and sometimes referred to as the "Hanoverian buglehorn," [Figure 4] is a half-moon shaped instrument pitched in "C." [24]

Other types of buglehorns are pictured in powder horn engravings [Figure 6] and include numerous configurations. [25]

One of the first uses of the buglehorn on American soil was documented in Camus' *Military Music of the American Revolution*: "At the battle of Harlem Heights, the Americans met some of the British light infantry and the Hessian jäger [soldiers]. These riflemen were special companies of hunters, uniformed in green, and serving as light infantry.



[Figure 6] -- Powderhorn engravings representing various styles of buglehorns. From Military Historian and Collector, Spring 1984.

"At the beginning of the battle, as Washington's adjutant Joseph Reed described it, 'The enemy appeared in open view and sounded their bugles in a most insulting manner, as is usual after a fox chase. I never felt such a sensation before -- it seemed to crown our disgrace.' " [26]

The British utilized buglehorns instead of cumbersome drums for its newly-formed light infantry units. Some musicians were required to perform on fife, buglehorn and trumpet.

Trumpets were used for mounted troops, buglehorns or fifes and drums for dismounted dragoons serving as infantry. [27]

Buglehorns became associated with the enemy by Continental troops and were, by default, immediately disliked. Combined with shortages of brass instruments available to the troops, improvisation had to occur to locate effective signaling instruments.

This can best be demonstrated by Daniel Morgan's use of a turkey call as a signal to rally his Corps of Riflemen at the Battle of Saratoga in 1777. [28]

Despite the buglehorn's association with the enemy, some Continental Cavalry units favored trumpets and buglehorns during the Revolutionary War. There's also evidence that at least two ships in the Continental Navy used buglehorns along with trumpets during this time.

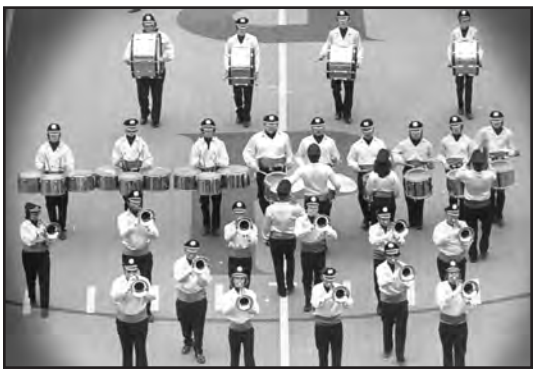
By 1778, the Journals of the Continental Congress listed musicians used by the military in the following configurations:

- Infantry Battalion, 1 drum major, 1 fife major, 18 drums and fifes
- Artillery Battalion,1 drum major, 1 fife major, 24 drums and fifes
- Cavalry Battalion, 1 trumpet major, 6 trumpeters
- Provost, 2 trumpeters [29]

The number of musicians utilized by the military remained virtually unchanged until 1941. [30] After 1875, bugles were used in lieu of fifes until drummers were also discontinued. [31]

EL TOROS, Appleton, WI (1984).
Photo by Chuck Young from the collection of Drum Corps World.

EAGLES OF CENTRAL NEW YORK, Verona, NY (1984).
Photo by Ed Ferguson from the collection of Drum Corps World.



CRITERIONS, Newburgh, NY (1981).
Photo by Moe Knox from the collection of Drum Corps World.

▲ *The buglehorn becomes the bugle*

Toward the end of the 18th Century, a dramatic change occurred to the shape of the buglehorn when the instrument was coiled in a fashion similar to the trumpet. Other than the shape, the instrument remained virtually unchanged.

The discovery of an exact date that the coiled bugle was first utilized has proven inconclusive. However, specimens of this configuration were manufactured as early as 1800. The British military has been credited with initiating copper bugles of this design and it formally adopted the pattern in 1812.

During the late 18th Century, drill manuals throughout Europe were being appended to include standardized signals for buglers. The Prussian cavalry received standard signals no later then 1787.

French trumpeter Joseph David Buhl spent decades revising traditional French military signals. [32] Many of these signals were incorporated by other countries. At least 10 calls utilized by the U.S. Army were created by Buhl and are still in use today including: "First Call," "Mess Call," "Retreat" and "Tattoo, First Strain". [33]

▲ *The War of 1812*

Bugles of this time period were available in many shapes and sizes. Typical shapes included coiled, half-moon and the elongated coil, similar to the trumpet. Regardless the shape, the bugle filled an important strategic role in the War of 1812 (1812-1815).

On at least two occasions, British forces in Canada utilized the bugle in a manner that transcended simple signaling. On October 26, 1813, Colonel Charles De Salaberry distributed his buglers during the battle of Chateaugay to sound calls from the woods.

The advance signaled from the woods was heard by the Americans, who retreated when it was assumed that a charge was forthcoming. However, De Salaberry did not have sufficient troops for a successful advance and sent his buglers out to "fool" his adversaries -- which he did.

A similar tactic was utilized at the battle of Longwoods on March 4, 1814. Buglers were posted in three different directions as they signaled commands. The purpose was to mask the actual direction of the British assault. [34]

The U.S. Army had only one regiment permitted to use the bugle instead of the fife and drum during the war, besides self-governing militias. The U.S. Rifle Regiment utilized the bugle and the instrument soon became associated with the riflemen. It's unclear what style of bugle was used by the riflemen. Uniform insignias at the time describe two types of buglehorns. [35]

In 1814, the Rife Regiment was expanded to four regiments, each utilizing the bugle. However, the 1st Rifle Regiment utilized a field trumpet on at least one recruitment drive on August 19, 1814.

This "trumpet" could have been a true cylindrical field trumpet or a folded, trumpet-shaped, conical bugle that was wrongly identified. [36]

During the war, the bugle found its way into several major U.S. military music ensembles. The United States Marine Corps Band ordered a bugle of "trumpet kind" in 1812. [37] Keyed bugles (discussed later in this chapter) were incorporated into the Army Band at the West Point Military Academy. [38]

▲ *American fife, drum and bugle corps*

During 1828, military fife, drum and bugle corps comprised of reed and brass instruments, as well as fife and drum corps, were utilized by the American military.

Ned Lothian originated the practice of having brass bands alternate with fife and drum corps in playing different quick-steps while on the march. At the time, these "brass bands" were comprised of natural trumpets and horns. [39]

As the keyed bugle came into vogue in the United States, it was incorporated in fife, drum and bugle corps, along with cavalry trumpets. Since the keyed bugle was a chromatic instrument, it would often alternate the melody with the fifes. [40]

Throughout the 1820s and 1830s, hybridized drum, fife and bugle corps existed in the United States. However, the era of these ensembles was to be short-lived.

During the 1830s, brass bands consisted of keyed bugles, natural horns, slide trombones and serpents. The latter was a bass instrument made of wood and covered in leather. The serpent had its pitch manipulated with finger holes instead of valves. These early "brass bands" began to replace the fife, drum and bugle corps and sparked the explosion of brass band music in the United States. [41]

Fife, drum and bugle corps may have been endangered during the era of the brass bands, but they were in no way extinct. Examples of martial music from the 1930s for civilian drum corps have sections set aside for fifes. Instructions were provided in the music for buglers to extend their slides in order to drop their bugle into the key of "F" when fifes were used in the ensemble.

If fifes were not used, performers were instructed to omit designated portions of each musical selection. [42]

The Old Guard Fife and Drum Corps is stationed at Ft. Myer, VA, outside Washington, D.C. (2001). *Photo by David Rice from the collection of* Drum Corps World

The Old Guard Fife and Drum Corps, stationed at Fort Myer in Virginia, is a very well-known modern fife, drum and bugle corps that is still in existence. This esteemed military performance ensemble has incorporated specialty bugles by the R. Lawler Company of Orlando, FL. These copper instruments are designed in the mid-19th Century style, but with a modern horizontally- positioned piston valve. [43]

▲ *Keys versus valves*

During the 1800s, a marked advancement in brass instrumentation usage and design occurred. This instrument design "rush" was prompted by improved manufacturing techniques, but was fueled by the increased melodic requirements of the music of the

CONNECTICUT CLASSICS, East Haven, CT (approx. 1975). *Photo by Moe Knox from the collection of* Drum Corps World.

DEFENDING KNIGHTS, Rockland, MA (approx. 1978). *Photo by Ed Ferguson from the collection of* Drum Corps World.

BLACK WATCH, Auburn, WA (approx. 1975). *Photo from the collection of* Drum Corps World.

period.

As a result, countless variations of padded key assemblies, rotor valves and piston valves were devised for brass instruments. Entire families of brass instruments were now able to enjoy the benefits of being fully chromatic.

As early as the 15th Century Leonardo da Vinci had conceptualized a chromatic trumpet that utilized tone holes in his historic codex. Slides were eventually used on trumpets to enable them to transcend the overtone series. The resulting chromatic instrument eventually evolved into the present-day trombone.

Padded keys were utilized on trumpets near the end of the 18th Century. Several famous musical works were created for soloists utilizing the keyed trumpet including Haydn's *Trumpet Concerto in E-Flat* (1796) and Hummel's *Trumpet Concerto in E-Flat* (1804).

Despite early success, the placement of the keys on the trumpet made it awkward to play. When instrument designers first saw the coiled conical bugle, they envisioned an instrument with easily accessible keys.

The creation of a chromatic bugle was realized in 1810 when Bandmaster Joseph Haliday created the keyed bugle, also referred to as the "Kent bugle." [44] This instrument evolved into various voices and became popular among British bands in the early 1800s.

Despite its success and the presence of exceptional virtuosi, the keyed bugle had to compete with new refinements in valved brass instrumentation beginning in the 1830s. Not recognized as a military signaling instrument, the keyed bugle enjoyed immense popularity in the United States as a commercial solo instrument.

European instrument designers began competing with each other for awards and patents that inevitably led to lucrative military contracts. Fierce rivalries occurred between Adolph Sax and many other prominent French manufacturers.

The resulting competition that occurred between these manufacturers of valved instruments prompted a startling proliferation of new instrument designs.

It wasn't long before the larger manufacturers of valved instruments were outproducing the keyed bugle manufacturers. Soon, these valved instrument manufacturers began somewhat of a smear campaign against the keyed bugle as popular bugle soloists were enticed to switch over to valved comets.

However, many music enthusiasts preferred the variety of tone qualities in keyed brass ensembles as opposed to the analogous sound of the similarly-fashioned valved brass instruments.

Most valved brass instruments were replacing keyed brass instruments by the time of the Civil War, but keyed bugles could occasionally be found in brass bands for the remainder of the 19th Century. [45]

▲ *The Royal Artillery Bugle Band*

The 1850s represent a very crucial time in the era of the chromatic bugle. No group had more of an impact on the evolution of the bugle than the Royal Artillery Bugle Band.

Located in Woolwich, England, the ensemble started as a drum and fife band in 1748. Following the Crimean War (1853-1856), the existing drum and fife band was turned into a bugle band. The fife-major, James Lawson, became the bugle-major and quickly began training 24 "youthful buglers" outfitted with British service pattern bugles.

Lawson devised colorful musical arrangements for his ensembles and occasionally divided the music into two and three parts -- no easy task considering the five-note ability of the bugles used.

The limited range of the bugles frustrated Lawson to the point that he convinced Henry Distin to allow him to use a chromatic attachment for the bugle, patented by Distin in 1855. This attachment provided the bugle the same range as the cornet. [46]

With the chromatic restraints lifted from his bugle band, Lawson began to enrich his musical arrangements. The performance by his bugle band of the *Roast Beef of Old England,* as the "Officer's Mess Call," created "quite a furore." [47]

The interest was sufficient enough in the "Chromatic Bugle Band" that hundreds gathered each evening to hear the ensemble perform the "Tattoo". [48] The bugle band of this period grew to include three voices of copper bugles by Distin (2 E-flat sopranos, 18 B-flat bugles, 4 E-flat tenors).

Further refinements occurred to the bugle band when Distin prepared a bugle utilizing a type of transposition valve. Manufactured in 1861, the instrument was similar to a conical British duty bugle, but with a type of rotary valve. [49]

The rotary valve allowed access to cylindrical tubing that lowered the pitch of the instrument from E-flat to B-flat. The result was a "duplex" instrument that served bugling duties in keys suitable for cavalry and infantry.

[Figure 7] -- Spanish military bugle with a switch valve that is marked "Do-Ray." *From the collection of Jack T. Carter. Photo by Jerry Pollard.*

In effect, this is the first example of the piston bugle that would be utilized by competing drum and bugle corps in the United States beginning in the late 1920s.

It is interesting to note that the Distin bugle manufactured in 1861 was not adopted by the War Office. Even though the instrument would have allowed its field buglers to carry one instrument instead of two, the War Office objected to the dark timbre of the "E-flat" to "B-flat." The result was a "duplex" instrument that served bugling duties in keys suitable for cavalry and infantry.

The duplex bugle was not accepted by the English, but a variation of the instrument [Figure 7] found favor with the Spanish military at the end of the 19th Century.

During the early 1860s, Lawson began introducing brass band instruments into his bugle band. By 1869, the group was officially renamed The Artillery Brass Band.

▲ *Pelitti and the Bersaglieri horn*

Guiseppe Clemente Pelitti of Italy produced a bugle in 1830 that was immediately adopted by the Austrian Army and the Ottoman Empire. Soon afterward, Pelitti further refined the instrument we now know as the euphonium and produced entire families of similarly shaped brass

BLUE DEVILS B, Concord, CA (1996).
Photo by Steve Rodriggs from the collection of Drum Corps World.

DREAM WARRIORS, New Bedford, MA (1996).
Photo by Harry Heidelmark from the collection of Drum Corps World.

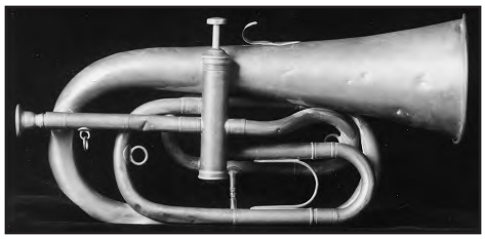
CONQUISTADORS, South San Francisco, CA (1984).
Photo by Orlin Wagner from the collection of Drum Corps World.

instruments. In 1847, Pelitti's experimentation resulted in the first duplex prototypes. [50]

Duplex instrumentation of the time usually consisted of a brass instrument with two separate bodies and bells connected by a switch valve. One mouthpiece was used by the performer who could, by engaging the switch valve, continue playing the instrument in a different key. This concept is still utilized in today's orchestral "double" and "triple" horns.

Adolph Sax realized the potential of such a novelty and, upon viewing prototypes, went to Paris for the 1855 Exposition and promptly stole the idea from Pelitti and produced similar instruments in time to win first place at the same exposition! [51]

Pelitti passed away in 1865, leaving his factory to his son (also named Guiseppe). An artful entrepreneur, Pelitti produced families of similarly-proportioned conical bore brass instruments that quickly gained favor among mounted military bands. [52]



[Figure 8] -- Bersaglieri horn in "B-flat" with vertical poston valve. Made by Battista Cazzani of Milano, Italy. *From the collection of Jack T. Carter. Photo by Jerry Pollard.*

Shortly before 1870, Pelitti invented the famous *tromba alla bersagliera* [Figure 8], also known as the "Bersag horn."

This was a family of seven bell-front brass instruments pitched in B-flat and E-flat. Each voice of the "fanfara" (or bugle band) had a single vertical piston valve that lowered the instrument's pitch by a fourth.

Clever voicing of these instruments enabled the "choir" to produce a diatonic scale that offered more musical variety when compared to the limited overtone series of straight bugles and cavalry trumpets.

The bass horns had the duty of providing the tempo because percussion instruments were not used by the Bersaglieri. [53]

The Bersaglieri were sharpshooters. Famous for their shiny black hats with tufts of cock feathers, they were more properly distinguished by their rapid marching. Their double march could easily cover a mile in nine minutes. [54]

The Bersaglieri's practice of entering battles with a flourish of brass music made the units popular among American troops during World War I (1914-1918).

The Bersaglieri's style and instruments impacted the direction of drum and bugle corps in the United States. Single-valved bugles in the U.S. are sometimes still referred to as "Bersag horns."

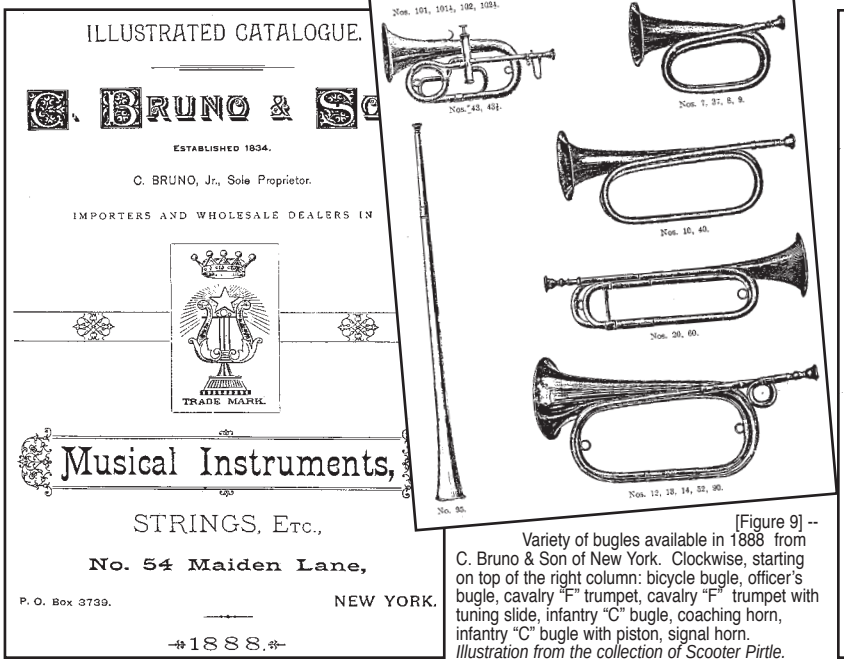
There's evidence that C. Bruno & Son, an instrument importer based in New York, offered single piston "C" bugles of the Bersag style as early as 1888 [Figure 9].

The Bersaglieri continue their "quick-moving" style of brass music to this day. Presently, they use modern three valve versions of the famous Bersag horn.

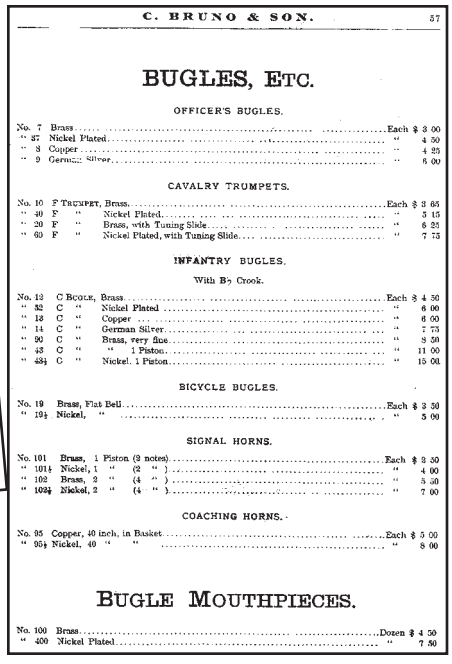
▲ *Bugle's use in the Civil War*

The first known regulation or "pattern" bugle occurred for the U.S. military in 1835, possibly earlier. This instrument [Figure 10, page 68] was designed in a French style and had a large single coil copper bugle in the key of "C" bugle with or without "B-flat" crook, a "G" trumpet and an "F" trumpet. Many variations of these instruments were also present.

French military



[Figure 9] -- Variety of bugles available in 1888 from C. Bruno & Son of New York. Clockwise, starting on top of the right column: bicycle bugle, officer's bugle, cavalry "F" trumpet, cavalry "F" trumpet with tuning slide, infantry "C" bugle, coaching horn, infantry "C" bugle with piston, signal horn. *Illustration from the collection of Scooter Pirtle.*



C. BRUNO & SON. 57

BUGLES, ETC.

OFFICER'S BUGLES.

No. 7	Brass	Each	$ 3 00
" 37	Nickel Plated	"	4 00
" 8	Copper	"	4 25
" 9	German Silver	"	6 00

CAVALRY TRUMPETS.

No. 10	F TRUMPET, Brass	Each	$ 3 65
" 40	F " Nickel Plated	"	5 15
" 20	F " Brass, with Tuning Slide	"	6 25
" 60	F " Nickel Plated, with Tuning Slide	"	7 75

INFANTRY BUGLES.

With B♭ Crook.

No. 12	C BUGLE, Brass		Each	$ 4 50
" 32	C " Nickel Plated		"	6 00
" 13	C " Copper		"	6 00
" 14	C " German Silver		"	7 75
" 90	C " Brass, very fine		"	8 50
" 43	C " " 1 Piston		"	11 00
" 43½	C " Nickel, 1 Piston		"	15 00

BICYCLE BUGLES.

No. 19	Brass, Flat Bell	Each	$ 3 50
" 19½	Nickel, "	"	5 00

SIGNAL HORNS.

No. 101	Brass, 1 Piston (3 notes)			Each	$ 3 50
" 101½	Nickel, 1 "	(2 ")		"	4 00
" 102	Brass, 2 "	(4 ")		"	5 50
" 102½	Nickel, 2 "	(4 ")		"	7 00

COACHING HORNS.

No. 95	Copper, 40 inch, in Basket	Each	$ 5 00
" 95½	Nickel, 40 " "	"	8 00

BUGLE MOUTHPIECES.

No. 100	Brass	Dozen	$ 4 50
" 400	Nickel Plated	"	7 50

EMERALD BUCCANEERS, Bridgeport, CT (approx. 1972).
Photo by Moe Knox from the collection of Drum Corps World.

BELLES OF ST. MARY'S, Rhinelander, Wi (approx. 1972).
Photo from the collection of Drum Corps World.

BEVERLY CARDINALS, Beverly, MA (1975).
Photo by Moe Knox from the collection of Drum Corps World.

[Figure 10] -- First pattern bugle in "C" for the U.S. Army (ca. 1835-40). *From the collection of Jack T. Carter. Photo by Jerry Pollard.*

influence on the U.S. military during the Civil War (1861-1865) prompted the substitution of the bugle in fife and drum corps by some volunteer units. United States bugle corps resembled French corps very closely.

Many of the bugle signals used during the war even came from the French military. There were usually one or two buglers per infantry battalion to sound the skirmish calls, while cavalry and artillery had the normal two buglers per company or troop.

John F. Stratton established a musical instrument factory in New York in 1860, just in time to benefit from government orders for instruments. Stratton manufactured more than 60,000 field trumpets and bugles [Figure 11] for the government during the Civil War.

His facility's workforce (averaging between 150 and 200 men) produced an impressive total of 100 instruments per day! [55]

A few volunteer infantry units, including the brightly-attired "Zouaves," used bugles in lieu of fifes. American Zouaves wore uniforms patterned after the French Light Infantry Zouaves that were formed originally from the Zouaoua Tribe of Berbers in Africa. [56]

Combined with drums, the resulting ensembles were some of the first true drum and bugle corps in America. Bugle marches for these ensembles can be seen in at least one music manual from the Civil War.

▲ *The demise of the fife in the Army and Marine Corps*

Brass bands had managed to obtain a strong foothold in American society during the 19th Century. Bugles were still used primarily for signaling purposes during the Civil War and martial music was being performed by regimental bands and volunteer musicians.

The United States Army and Marine Corps discontinued its use of the fife for signaling and adopted the bugle around 1875. Changes in military tactics in the Franco-Prussian War (1870-1871) created extended lines of troops in the field instead of closed ranks and files. The bugle was more effective than the human voice at transmitting commands along these long lines of troops. [57]

[Figure 11] -- Cavalry bugle in "C" with a "B-flat" crook (ca. 1864-65) by Stratton & Foote. *From the collection of Jack T. Carter. Photo by Jerry Pollard.*

The fifers of the Marines Corps were not pleased with the adoption of the bugle in place of their fifes. Matters turned worse when a school was established at the Marine Barracks in Washington, D.C., for the purpose of training them to play bugles.

Protests occurred, but the fifers were informed that they would not be allowed to reenlist unless they agreed, in writing, to learn to blow the bugle. [58] Nonetheless, fife music remained part of Army music manuals.

Quartermaster's catalogs listed the availability of fifes through World War II (1939-1945). Despite the fact that they were not used as signaling instruments, fifes never quite disappeared from military service. [59]

▲ *The Queen's Own Bugles*

Organized in 1860, the Queen's Own Rifles of Canada was a rifle regiment that utilized one or more buglers as signalers. Eventually, a small "band" of bugles were lead by Bugle-Major Francis Clark. Comprised solely of buglers from each of the regiment's companies, this ensemble did not utilize percussion.

The U.S. Marine Drum & Bugle Corps, "The Commandant's Own," (1962) stationed at Marine Barracks in Washington, D.C. *From the collection of Ron DaSilva.*

The concept of a bugle band was secondary to the musician's role as signalers for their respective companies, but a performance ensemble was evolving as bass drums were added to the band in 1866.

Following the death of Francis Clark in 1876, Charles Swift took over the band. Swift, a recent addition to the ensemble, was noted for his talent on the drum and the bugle. Confirmed as bugle-major in 1880, he had molded the bugle band into one of the finest marching ensembles in the British Empire:

"Swift could produce a richness of tone in the horns perfectly complimented by the flams, drags and strokes of the drums. Drill with the horns and drum sticks reached the same perfection as the foot drill." [60]

In addition to his ability to increase his ensemble's precision, several innovations were introduced by Swift into the bugle band. Most notably would be his introduction of crook adjustments for a portion of his bugle line during the early 1880s.

These removable terminal tuning "crooks" or "bits" of tubing were added to the bugle between the mouthpiece and the bugle. The purpose was to lengthen the bugle in order to lower the instrument's pitch.

It's important to note that this was by no means a novelty to brass instruments, but it would appear that the manner in which it was applied to a bugle ensemble was new to North America.

Swift's bugles were pitched in B-flat. By adding tuning crooks to some members of the bugle choir, he was able to lower the pitch of the instrument to "F." Both keys of bugles were very familiar to military buglers,

EAST COAST JAZZ JUNIORS, Malden, MA (1999).
Photo by Harry Heidelmark from the collection of Drum Corps World.

EARTHQUAKE, San Diego, CA (1998).
Photo by Rocky Lewis from the collection of Drum Corps World.

CALIFORNIA DONS, Fresno, CA (1984).
Photo by Robert Watson from the collection of Drum Corps World.

but they were seldom used simultaneously in an ensemble. The incorporation of both "B-flat" and "F" bugles permitted the bugle band to perform a wider variety of music.

With the addition of snare drums to the percussion section, the Queen's Own Bugles performed numerous exhibitions in Canada and the United States during the late 1880s. It is unknown to what extent this ensemble impacted the "trumpet and drum bands" of the United States during this period. There is evidence of corps utilizing tuning crooks in the United States for their "G" bugles well into the 1930s. [61]

Throughout the bugle band's history, members have served bravely as battlefield buglers and infantry soldiers in numerous wars and conflicts. All the while, the band continued to maintain its high performance standards and competitiveness.

The ensemble's instrumentation remained virtually unchanged until piston bugles in "B-flat" were reluctantly introduced to the Queen's Own in 1947, as well as melodic percussion.

▲ *Trumpet and drum corps*

During the later part of the 19th Century, bugles of several varieties could be purchased from virtually every mail order musical instrument manufacturer. During the 1870s and 1880s, these bugles were paired with marching percussion in the U.S.

The combination of the two became popular among the military forces. Often, these "trumpet and drum corps" would parade behind regimental brass bands during parades to play alternately during the march. [62]

During 1886, John Philip Sousa noticed the increasing popularity of the trumpet and drum corps in Washington, D.C., and wrote a book in hopes of developing their precision. *The Trumpet and Drum* was Sousa's first book and included basic music theory, technical exercises for the trumpet and percussion, standard bugle calls and eight original compositions prepared expressly for the trumpet and drum corps.

It's important to note that American bugles have been historically referred to as "trumpets" because of their cylindrical (as opposed to conical) design. Depending on the geographical location, the term "trumpet" and "bugle" could almost be interchangeable.

The year 1886 also marked the first year of Purdue's collegiate trumpet and drum corps. Years later, this ensemble (and many other trumpet and drum corps) would evolve into a marching band.

▲ *Bugles for every need*

The late 1800s provided an astonishing assortment of bugles offered by manufacturers. Bugles for the military were offered in several keys and several configurations. Likewise, bugles designed for civilian use were also becoming more prominent.

One of the most unique incarnations of the bugle occurred for the bicycle enthusiast. As the "high wheel" bicycle became commonplace in the 1870s and 1880s, there was a great deal of enthusiasm surrounding it.

Predating the automobile, bicycles offered Americans a new sense of cost-effective mobility and freedom. Enthusiasts formed clubs and began to compete with bugles as a method of warning to pedestrians, but soon the bugles were used to issue commands to riding clubs during competitions.

A specialized bugle was created for use by bicyclists. Triple coiled, these compact bugles were small [see Figure 9, page 67], but were the same length as larger bugles. The compact design of the bicycle bugle was also utilized for pocket bugles. Bicycle bugles sometimes utilized an oval bell instead of a traditional round bell. [63]

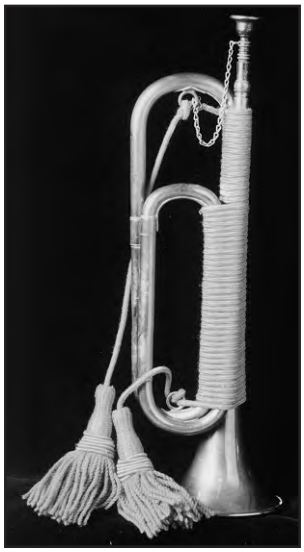
Becoming a symbol for the bicycle competitions, some finely crafted presentation bicycle bugles were used as prizes for some of the more prestigious bicycle competitions. These particular bugles are considered highly-prized and valuable by today's instrument collectors.

It's unclear what affect these instruments had on the design of the small horns with rubber bellows that were later used on bicycles and early automobiles. To this day, the universal bugle symbol is used as identification for horn buttons on automobile steering wheels.

[Figure 13] -- Buglers of the 1st Vermont Volunteer Infantry, June 30, 1898. *From the collection of Anthony Gero.*

▲ *Standardization of the "G" bugle*

Standardization of the "G" bugle occurred during the early 1890s when the army decided to change from the then current standard of the "F" trumpet (with or without a "C" crook). Eventually, new designs began to appear and the 1892 pattern "G" trumpet [Figure 12] with slide and "F" crook for use by cavalry was approved, along with the 1894 pattern "B-flat" trumpet for infantry.



[Figure 12] -- Pattern military trumpet in "G" (1892). This instrument was created for the U.S. Navy. *From the collection of Jack T. Carter. Photo by Jerry Pollard.*

Officer's bugles from this period resembled British duty bugles and were pitched in "C." Artillery bugles from

CHARIOTEERS, Troy, AL (approx. 1975).
Photo by Jane Boulen from the collection of Drum Corps World.

CHESSMEN, Easton, PA (1980).
Photo by Robert Weidaw from the collection of Drum Corps World.

BLUECOATS, Canton, OH (1988).
Photo by Ed Ferguson from the collection of Drum Corps World.

this period were pitched in "G."

The 1892 pattern "G" trumpet [Figure 13, page 71] would eventually supplant all others and become the regulation for all services. This standardization is also responsible for the American Legion's adoption of the "G" trumpet for drum and bugle corps that occurred during the 1920s.

Evolution of the American competition bugle -- 1900 through the present

For all practical purposes, the evolution of the bugle temporarily ceased during the final years of the 19th Century. It was during this time that brass instrumentation was becoming standardized.

The focus of brass instrument manufacturers shifted to perfecting existing instruments instead of creating new instrument types. Since the military had provided manufacturers with explicit specifications for the bugles it needed, there seemed to be little need for experimentation.

However, new markets were being created for the instrument that didn't exist prior to 1900. Eventually, buglers outside the military realm began to implement changes to better adapt the instrument to their activities.

▲ *Boy Scouts of America*

As early as 1916, the Boy Scouts of America incorporated the use of the "G" bugle for their troops. A merit badge also became available for proficiency on the instrument in 1917.

Bugles for the Boy Scouts were produced by several firms, including Rexcraft, a brass instrument importer that was purchased by Buglecraft, Inc. of New York.[64]

C.G. Conn, Ltd. also manufactured bugles that were endorsed by the Boy Scouts of America and remarked in its 1930 catalog that its bugle is "noted for its easy blowing qualities which make it an ideal bugle for the youngsters."[65]

Boy Scout drum and bugle corps began appearing after World War I (1914-1918). Most of these ensembles utilized surplus uniforms and instruments from the War.

Utilizing the same bugle calls as used by the American military, the typical Boy Scout bugler would have a repertoire of no less than 17 calls. *Reveille, First Call*, *Tattoo*, *Assembly, Mess Call, Swimming* and *Taps* would be performed dutifully by young buglers at Boy Scout outings and summer camps. [66]

As early as 1930, C.G. Conn, Ltd. featured a "B-flat" trumpet with one vertical piston valve. This instrument was called a "Scout Trumpet." Shaped like a "B-flat" trumpet, the instrument featured a single vertical piston that dropped the pitch of the instrument four full steps.

The bugling merit badge booklet printed in 1938 shows several scouts using "G-D" piston bugles at the National Jamboree, which indicated that modern competition bugles were probably often used by Scouts instead of the "official" valveless "G" bugles.

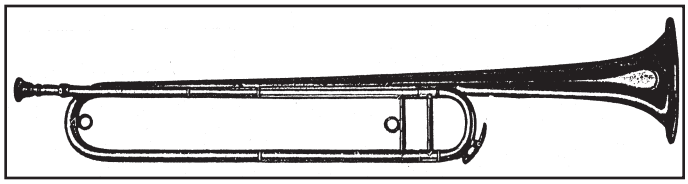
During World War II (1938-1945), strategic metals such as brass and aluminum were directed toward the war effort. As a result, plastic bugles were adopted by the Boy Scouts. [67] These instruments were designed by Frank Aman (who, incidentally, created the "tonette" plastic recorder used in elementary school general music classes).

The plastic bugles were replicas of standard military "G" bugles and were created for the U.S. Army and later adopted by the Marine Corps and Navy. Available in white and olive drab, these instruments were in use well into the 1950s.

Bugling would remain an inherent part of Scouting until interest began to dwindle in the 1970s. By 1986, interest diminished sufficiently to prompt the Boy Scouts of America to discontinue its authorization of an "official" Boy Scout bugle. [68]

▲ *American Legion*

American military forces [Figure 15] in Europe during World War I were greatly impressed by British and French drum and bugle corps. Inspired by the European corps, the American Legion was formed in 1919 for war veterans and shortly thereafter there began formation of drum and bugle corps in the United States. The Legion selected the "G" trumpet for these ensembles because it was standard for Army foot troops at the time.



[Figure 14] -- An American Legion bugle by Wurlitzer (ca. 1920-1930). This design was incorporated by numerous manufacturers for American drum and bugle corps. *From the collection Scooter Pirtle.*

The number of active drum and bugle corps formed by the American Legion increased dramatically during the 1920s and 1930s. As the amount of corps went up, so did the competitions.

Soon, bugle designs known as "American Legion" [Figure 14] were utilized by some competing corps. These instruments are easily identifiable by their length and represent a design trait that would remain consistent in drum corps brass

[Figure 15] -- A photo postcard (ca. 1902-1910) showing the "Trumpet, Fife and Drum Corps of the 30th Infantry." *From the collection of Anthony Gero.*

EPOCHS, Garfield, NJ (approx. 1972).
Photo by Moe Knox from the collection of Drum Corps World.

CAPITOLAIRES ALL-GIRL, Madison, WI (approx. 1972).
Photo from the collection of Drum Corps World.

EBONY GUARD, Chicago, IL (approx. 1980).
Photo by Boyd Garey from the collection of Drum Corps World.

instrumentation through the late 1960s.

Drum and bugle corps competitions also sparked creativity in the design of bugles in tenor and bass voices. These were valveless bugles that had moveable slides for tuning purposes.

▲ *"Two Pitch" music in the United States*

The use of tuning crooks for bugles was documented well before the 20th Century, but their use in the United States at the turn of the century prompted new melodic options for the burgeoning drum and bugle corps activity.

War Department documents indicate that the practice of utilizing "two pitch" music for bugles in the key of "G" and "D" was somewhat commonplace prior to 1920. The military did not make it a practice of providing tuning crooks for its buglers, but seemed not to dissuade ensembles from procuring them on their own. Suggestions for the use of these tuning crooks was explicitly provided in government text:

"In playing this class of music, known as 'two-pitch' music, the corps is divided as evenly as possible, half of the buglers attaching the D crooks to their instruments and the remainder continuing to use theirs in the key of G.

"The music is arranged so that certain strains or phrases are played in G and resting while the other half plays. This 'two-pitch' music is a pleasing diversion, but should not be so constantly used to become tiresome or monotonous. Special work is required to train the buglers to commence the various strains confidently and to rest at the proper time." [69]

Military drum and bugle corps prior to 1920 often utilized a bugle section divided into four sections. The first three sections consisted of players utilizing "G" bugles. Bass bugles pitched an octave below these instruments could also be utilized.

These ensembles would perform ceremonial "flourishes" on their own or play strains of military marches with the regimental band. One example of these "flourishes" would be the introduction utilized prior to the playing of *Hail to the Chief* used to introduce the President of the United States at ceremonial functions.

As the "two-pitch" music began to be used regularly by corps, specialty bugles were manufactured in the key of "D" to complement the "G" bugles. The extent to which these "D" instruments were manufactured is unknown and specimens are currently very difficult to locate.

Bugles pitched in the key of "G" bugles appear to dominate this era, but it's important to note that "two-pitch" music was also performed by instruments in "B-flat" and "F."

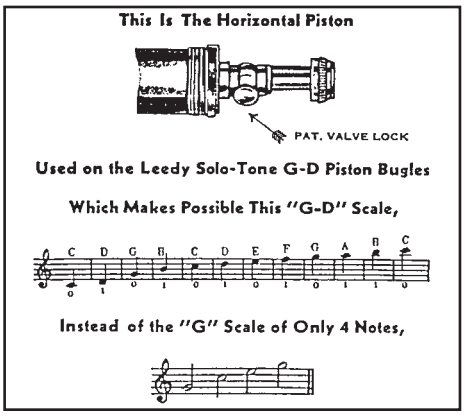
▲ *Introduction of the "G-D" piston valve*

During the 1920s, a bugle with a single vertical piston (based on the Bersag horn used in Italy since the 1870s) was devised and voiced in soprano, tenor and bass. The single piston utilized on these horns lowered the pitch from "G" to "D" (hence the term "G-D" bugle).

Several people have been credited with influencing the introduction of the piston bugle to the United States. Allegedly, Arthur "Scotty" Chappell first devised the "D" crook for the "G" bugle that led to the adoption of the piston valve for the bugle.

William F. Ludwig purportedly encountered Chappell's "unique" instrument and replicated the concept with a rotor (eventually replacing the rotor with a piston) in order to sell it to drum and bugle corps with his percussion instruments. [70]

William F. Ludwig, Jr. believes that his father first encountered the "D" piston while



[Figure 16] -- A valve lock by Leedy was used on early "G-D" bugles to prevent usage of valve during competitions. *From the Leedy "Roll off" No. 4, 1937.*

he traveled abroad in 1927 as part of the American Expeditionary Force 10-year reunion. Ostensibly after the celebration in Paris, Ludwig visited Italy and witnessed a Bersaglieri horn in use. [71]

Despite the ingenuity of drum and bugle corps' early pioneers in the United States, their adoption of the "G-D" bugle was anything but original. A version of a Bersag horn with a primary piston that dropped the instrument's pitch by a fourth was available for purchase in the U.S. as early as 1888. [72] However, the placement of the piston in a horizontal, instead of a vertical position, does seem to be uniquely American.

There is evidence that sometime during, or shortly after 1927, William F. Ludwig Sr. contracted the William Frank Company of Chicago to fabricate an instrument with the piston positioned horizontally instead of vertically. The purpose of the alteration was to conceal the piston from American Legion judges because of the Legion's ban on all bugles accept for the valveless military "G" bugle. [73]

Catalogs from the period also cite that aesthetic effect was also sufficient cause to conceal the piston -- so that buglers could play their instruments while holding them in the traditional one-handed manner.

It's important to note that these "G-D" bugles were actually duplex instruments. The primary intent of the piston was to change the instrument's key, not to enable the bugle to facilitate a diatonic scale. The desire was to provide one instrument that could perform the "two-pitch" music.

As drum and bugle corps began to exploit the usefulness of the piston, the governing body decided to "even the playing field" for corps not utilizing the piston bugle. In order to protect the majority of corps still utilizing valveless instruments, the American Legion required that the piston bugle have a lock [Figure 16] that would prevent the piston from being utilized.

The piston could be locked in the open or closed position for competitions, thus offering the corps the option of utilizing instruments in the keys of "G" and/or "D." This configuration would permit more notes to be played by the brass choir, but it also effectively limited the amount of instruments that could play in unison. [74]

ARCHER-EPLER MUSKETEERS, Upper Darby, PA (1999).
Photo by Harry Heidelmark from the collection of Drum Corps World.

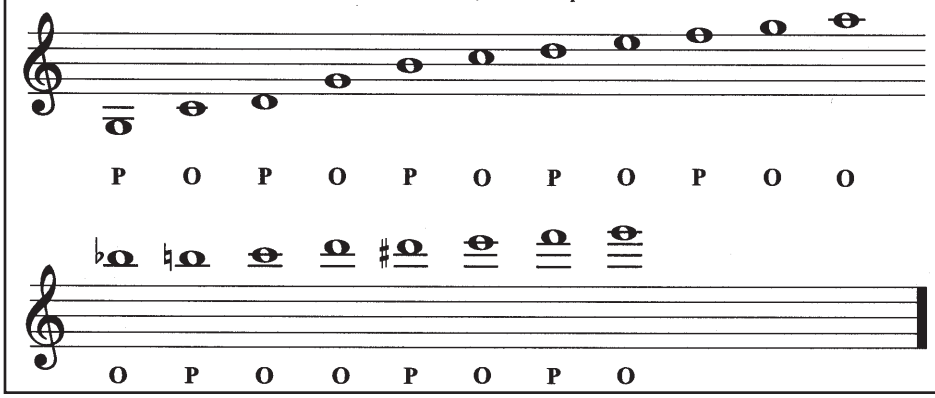
BUCCANEERS, Chelmsford, MA (1993).
Photo by Orlin Wagner from the collection of Drum Corps World.

HIGHLAND REGIMENT, Auburn, WA (1975).
Photo from the collection of Drum Corps World.

Figure 17

"G-D" Piston Bugle Fingering Chart

"P" = Piston, "O" = Open



Music books and manuals [Figure 17] were available to drum and bugle corps from music publishers and instrument dealers. Some of these manuals provided the corps organizer with detailed information necessary to fund, rehearse and perform their corps.

Other useful information covering such helpful topics as contest etiquette, use of drum corps at funerals, drill maneuvers used by successful corps and tips for a successful convention and "stunt night" were also discussed in "The Ludwig & Ludwig Drum Corps Guide" published in 1932.

Once uniforms and equipment were procured, it was not unusual for drum and bugle corps of this period to begin performances mere weeks after initial rehearsals.

Suggestions offered to buglers by written manuals and instructors were straight forward:

"Blow into the instrument with an attack as if saying the syllable "too" or "ta" with considerable force. After starting the tone, hold it out strongly and steadily without waver for as long as possible with comfort.

"Be sure the mouthpiece is in the middle of the lips and that no less than one third of the mouthpiece is on either lip. The attack or start of the tone should be sharp, snappy and decisive." [75]

The U.S. Marine Corps adopted the "G" piston bugle in 1938 "to increase the musical scope of the drum and bugle corps." Claiming that these modern bugles "have truly given a new life, a new character and a new brilliance to the drum and bugle corps," a manual published by the U.S. Marine Corps set forth the proper protocol that was to be utilized by its military corps.

Manual for Field Musics was published in 1935 and offered a unique glimpse into the type of musical training a military bugler could expect. Directions for the care of the bugle and explicit instructions to beginners were included, along with other hints such as:

"Two hours of patient, intelligent practice will help more to acquire proficiency than 10 hours of promiscuous blowing. Never play within an hour after meals. This gives the gastric juices a chance to perform their digestive function and thus does not rob the lips of the needed saliva required for proper vibration."

The Marine Corps also utilized a piston bugle pitched in the key of "B-flat." Like the "G" instruments used by competing drum and bugle corps, the "B-flat" instruments were offered in soprano, tenor and bass voices. The "B-flat" instruments were desirable by the military (and many public drum and bugle corps) because of the ease at which they could perform with marching bands with "B-flat" trumpets and clarinets.

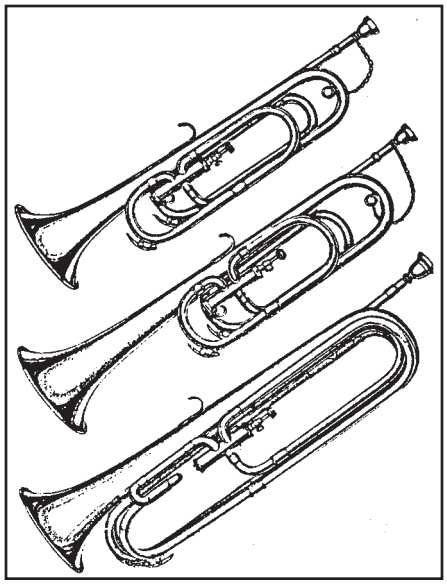
In a similar fashion of the trumpet and drum and bugle corps of the late 1800s, these "B-flat" corps would play alternately or even with the band while on the move. "B-flat" bugles were also paired with fifes and drums.

The trend of using "B-flat" piston bugles in the United States, however, was short-lived.

▲ *Introduction of the baritone bugle and French horn bugle*

The bass bugle used by corps prior to 1920 eventually evolved into what was to become known as the baritone bugle [Figure 18] in the early 1930s. Ludwig called them "Baro-tone" bugles.

During the 1930s, the typical bugle choir consisted of the soprano, tenor and baritone voices. Sometimes they were referred to the "first," "second" and "third" voices.



[Figure 18] -- Soprano, tenor and baritone "G-D" bugles found in the Leedy 'Roll-Off" catalog No. 4, 1937. *From the collection of Jack T. Carter.*

As the baritone bugle was introduced to drum and bugle corps, drum corps manuals of the time suggested that a proportion of one baritone per four soprano bugles be used.

It was suggested that performers selected for the baritone should not be "timid." [76] It was anticipated that this instrument would produce the same volume as three soprano bugles.

The baritone bugle was initially designed to have a "trumpet" tone, instead of mimicking its low brass namesake of the concert band.

These instruments were created to blend well with the "G" sopranos. The fundamental performance technique utilized by early baritone buglers was identical to soprano

KNIGHTS, Geneseo, IL (approx. 1968).
Photo from the collection of Drum Corps World.

BRACKEN CAVALIERS, Bristol, PA (1973).
Photo by Ron DaSilva from the collection of Drum Corps World.

CAPITAL SOUND, Madison, WI (1996).
Photo by Dale T. Eck from the collection of Drum Corps World.

players.

The French horn bugle (pitched an octave lower than it was played) [Figure 19] was allegedly conceived and manufactured by Whaley Royce in 1941. French horns quickly became popular because of their ability to sound more notes than other bugles utilizing the lower portion of the overtone series [Figure 20].

Slip-slide techniques and the re-introduction of the rotor

Beginning sometime in the mid- to late-1950s, performers began the practice of polishing their tuning slides and manipulating them like trombone slides in order to change the bugle's pitch. The result was a method that lowered the bugle's pitch by a half or full step [Figure 22], thus enabling the bugle access to many notes never before available.

[Figure 21] -- A Getzen soprano in the key of "G" with a slip-slide. The slide was manipulated by the left thumb or forefinger. *From the collection of Scooter Pirtle.*

Drum corps performance pioneers such as French horn bugle soloists Pepe Nataro (Connecticut) and baritone bugler John Simpson (Kansas) exploited "slip-slide" techniques before stunned audiences during the late 1950s and early 1960s.

This practice must have seemed innocent enough to the performers and spectators, but this curious performance technique would set in motion the desire for the chromatic bugle and forever change the drum and bugle corps activity.

Despite its success, the "slip-slide" technique was difficult to master for most players and did not easily facilitate quick pitch changes.

[Figure 19] -- "G-D" French horn bugle manufactured by the Whaley Royce Co. Ltd. in Toronto, ONT, from their 1967 catalog. *From the collection of Don Daber.*

Around 1957, new bugles were made available with the option of a factory-installed secondary "slip-slide" [Figure 21] or rotor valve.

The Legion eventually authorized the use of a rotor valve in response to the "slip-slide" phenomenon and to permit musicians to accomplish the same effect more efficiently.

Secondary rotor valves were also devised for "G" bugles that lowered the instrument's tone by a half step, full step or even a step and a half. It's unclear which manufacturer actually introduced the secondary rotor valve. Since experimentation among corps during this time period was rampant, it's likely that this introduction occurred simultaneously among numerous manufacturers and basement "tinkers."

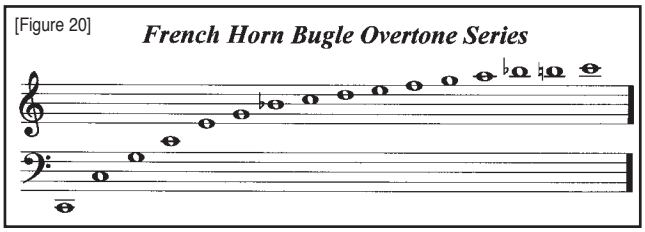
Photographic evidence from the period suggests that many corps opted to utilize bugles with only a primary piston during the early 1960s. Despite the fact that many corps utilized "slip-slides" as a secondary "valve" for their bugles, most corps that utilized an additional valve were choosing rotor assemblies for their instruments by the mid-1960s.

These rotors were cleverly designed into the tuning slide and were played by the left thumb or forefinger. Due to this design, drum and bugle corps could purchase replacement tuning slides (see page 56) with an integrated rotor valve to upgrade their current instruments. This allowed corps to remain competitive at minimal cost.

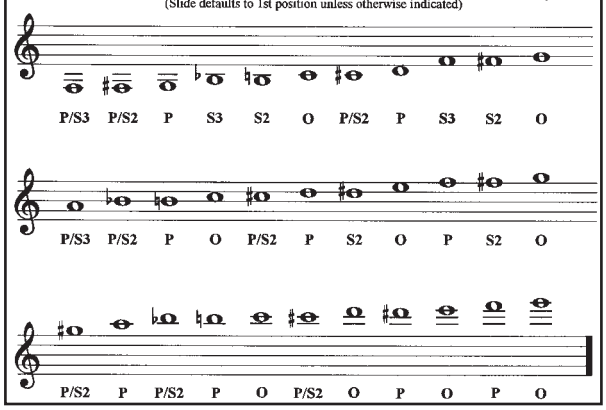
Through the 1960s, there was a great diversity among the configurations utilized by corps. Until the next major rule change in 1968, bugles were available with a dizzying variety of options. "G-D" bugles were available with a piston only, with a piston and "slip-slide" or with a piston and a "F#" rotor, a "F" full-step rotor or even a step-and-a-half "F-flat" rotor! [77]

Since each type of secondary valve required a different fingering system for the instrument, one can only imagine the amount of confusion experienced by novice

[Figure 20]



[Figure 22] ***"G-D/Slip-Slide" Bugle Fingering Chart***



CARDINALS, Scarborough, ONT (1990).
Photo by Dale T. Eck from the collection of Drum Corps World.

CHICAGO CONNECTION, Chicago, IL (1979).
Photo by Joseph Zepko from the collection of Drum Corps World.

HOLY FAMILY DEFENDERS, Rockland, MA (1980).
Photo by Moe Knox from the collection of Drum Corps World.

brass players attending their first drum corps rehearsal!

Rotors would remain an integral component of the competition bugle until it was phased out in 1976. Technically, the rotor valve has many advantages over the piston valve such as increased durability and dependability.

The rotor is a closed system that is much less vulnerable to the dust and airborne debris associated with marching outdoors. However, the rotors developed for the drum and bugle corps activity were of poor quality and required painstaking maintenance. [78]

Had a higher quality rotor been devised for corps, it seems likely that the piston would have been abandoned and the rotor would have remained the preference of present-day manufacturers.

[Figure 23]

▲ *Introduction of the contra bass, mellophone and euphonium bugles*

It is generally believed that the contra bass bugle was first fabricated in 1959 by Whaley Royce Company, Ltd. of Toronto. This double "G" contra bass [Figure 23] was pitched an octave below the bass baritone bugle and was made exclusively for the Geneva Appleknockers.

According to the 1967 Whaley Royce instrument catalog, the contra bass bugle was "on the market before drum corps were ready for it." However, the instrument was "re-introduced" five years later and enthusiastically accepted. [79] Some Canadian corps briefly experimented with contra bass bugles in the key of "C."

In 1957, the C.G. Conn Company created the first production bell-front mellophone. Called the mellophonium, the instrument maintained the characteristic round shape of the mellophone and was somewhat similar to the custom-made bell-front instruments built by the C.G. Conn Company for jazz artist Don Elliott a few years earlier.

The Stan Kenton Orchestra also prominently featured a four-man section of stock Conn mellophoniums between October, 1960 and December, 1963. Contrary to popular belief, Kenton and his arranger, Johnny Richards, were not involved in the initial design of the Conn Mellophonium.

Due to the success of the mellophonium in marching bands, it was inevitable that the concept would be utilized by drum and bugle corps. [80]

Whaley Royce's "Imperial Mellophone" [Figure 24, page 75] was first developed and designed by Dominic Delray, the music director of the Interstatesmen from Pittsfield, MA. Delray created a prototype and had the Whaley Royce Company fabricate instruments in the Fall of 1963.

The Interstatesmen purchased six mellophone bugles and used them for the first time in Canada at Quebec City in February, 1964. [81] By the summer of 1964, the Whaley Royce mellophones were being added to the French horn sections of the Springfield Marksmen, the Toronto Optimist, and the Belleville Black Knights.

At about the same time a production mellophone bugle was being first assembled and sold, the euphonium bugle was also being created at Whaley Royce in Toronto. Pitched in the same octave as the bass baritone, the euphonium was a much larger and imposing instrument.

The euphonium's intended purpose was to add a darker tone quality to the bugle choir's low brass section.

Some corps were pleased enough with the instrument to replace their entire baritone section with them.

By the mid-1960s, the bugle choir had grown to encompass three octaves [Figure 25, page 75] with four voices of instrumentation.

TRI-CITY COLUMBIANS, Pasco, WA (1973).
Photo by Ann Coville from the collection of Drum Corps World.

RAIDERS, Bayonne, NJ (1997).
Photo by Harry Heidelmark from the collection of Drum Corps World.

DEFENDERS, Troy, NY (1981).
Photo by Moe Knox from the collection of Drum Corps World.

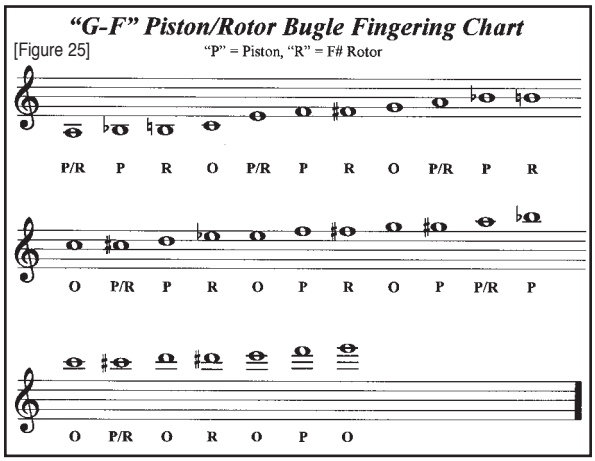
THE *Imperial* MELLOPHONE

This model of the Imperial concert bugle is absolutely perfect in every particular. First introduced in 1963 and made to the special request of Mr. Dominic Delray, the Music Director of The Interstatesman Drum Corps of Pittsfield, Mass., this Corps purchased six and used them for the first time in Canada in Quebec City in February 1964.

The bell is shaped the same as a French Horn with the easy playing qualities of an alto. For rich tonal effects and pure harmony it cannot be equalled. An invaluable addition to Drum Corps ! SEE PAGE 4 FOR RANGE SCALE.

#16	Imperial Mellophone Bugle in polished brass	$150.00	B
#16½	Imperial Mellophone Bugle, chrome plated	$170.00	B
#17	Imperial Mellophone Bugle, lacquered	$160.00	B
#17½	Imperial Mellophone Bugle, silver plated	$170.00	B
#16	Imperial Mellophone with slide attachment in brass	$170.00	B
#16½	Imperial Mellophone with slide attachment in chrome	$190.00	B
#16	Imperial Mellophone with rotor in brass finish	$210.00	B
#16½	Imperial Mellophone with rotor in chrome finish	$230.00	B
Mouthpiece for Mellophone		$ 5.00	
Mouthpiece case		$ 2.00	B
Cases for Mellophones, square		$35.00	B

[Figure 24] -- The "G-D" mellophone bugle by Whaley Royce from the company catalog dated 1967. *From the collection of Don Daber.*



▲ *Legalization of the "G-F" piston*

Due to the complicated configurations created by the various-sized rotors, the "G-F" piston [Figures 26, 27, page 78] was created for use by drum corps. There were many obvious advantages for corps to utilize the "G-F" bugle, although the governing bodies were at first unwilling to approve the change.

The American Legion and VFW maintained strict control over the competing drum corps. However, these governing bodies were seldom staffed with knowledgeable musicians. Instead, those entrusted with the direction of drum corps placed the activity on the same level as dictating flag codes and "motorcycle field competitions." [82]

Recognizable names in the drum corps realm such as Jim Jones, Zigmant Kanstul, Larry McCormick, Don Warren and many others expended great effort to convince the Legion of the importance of adopting the "G-F" piston. Arguably the most drastic change to ever occur to drum corps was approved by the American Legion Supervisory Committee in October, 1967.

This rule, also adopted by the National Band and Drum Corps Committee of the VFW, permitted the "G-F" bugle to be used by corps beginning in 1968.

The "G-F" piston lowered the pitch by one whole step instead of four steps as with the "G-D" piston. Instrument maker Zigmant Kanstul has been credited for developing and manufacturing the first line of these "G-F" instruments for his corps, the Velvet Knights

NISEI AMBASSADORS, Chicago, IL (approx. 1968).
Photo from the collection of Drum Corps World.

CHIEFTAINS, Allentown, PA (1993).
Photo by Dale T. Eck from the collection of Drum Corps World.

SCARLET LANCERS, Wichita, KS (1966).
Photo by Moe Knox from the collection of Drum Corps World.

[Figures 26, 27] -- Advertisements for the new "G-F" bugles available from Getzen and Olds during the 1969 season. *From the collection of* Drum Corps World.

of Anaheim, CA. The instruments produced by the F. E. Olds Company for that corps gained quick popularity and acceptance among other corps. Production of these bugles began in February, 1968. [83]

Following 1968, the "G-F" bugle with a half-step rotor became the standard for drum corps. Now that the piston valve was a full step drop (as with the first valve of a trumpet) and the rotor was a half step drop (as with the second valve of a trumpet). The fingerings required for these instruments became identical to traditionally-pitched brass instruments (except for the absence of the third valve).

During the transitional phase between the "G-D" and "G-F" instruments, manufacturers were producing both models and having difficulty filling orders for the new "G-F" instruments. Advertisements by Getzen at the time offered advice and requested that purchasers contemplate their decisions prior to ordering -- possibly in hopes of dissuading potential buyers from purchasing the Olds equipment.

The advertisement also included the patriotic statement, "To our knowledge Getzen is the only 100% American-made bugle."

Confusion regarding the new "G-F" instruments swept through the drum corps ranks as corps began outfitting themselves with the new instruments. The venerable Pepe Nataro, French horn soloist with the New York Skyliners, approached his friend Tom Peashey of the Syracuse Brigadiers in hopes of borrowing his French horn bugle for the evening's competition.

Peashey informed Nataro that he should take note that the instrument he was borrowing was a "G-F" bugle with fingerings different from the "G-D" instrument it was temporarily replacing. When asked if he could handle it, Nataro snapped back, "It's OK kid, I never use the %$#@ valves anyway!" [84]

Kits were available by manufacturers of the "G-D" bugles by which corps could replace (and thereby shorten) the coil of tubing attached to their instrument's primary piston. Once again, shrewd manufacturers provided corps a cost effective alternative to upgrade their instruments without the necessity of purchasing an entirely new brass line.

It was around this same time that new voices of bugles were developed such as the flugelhorn bugle which was added to drum corps mid-voice sections and was first adopted by the Racine Kilties in 1969. [85]

▲ *The two-piston and three-piston bugle*

Drum Corps International (DCI) was formed in 1971 and assumed the rule-making responsibilities for junior drum corps. In 1975, a proposal was being prepared that would permit the use of two-piston bugles by DCI corps. These instruments would utilize two vertical pistons [Figure 28, page 79] instead of a horizontal piston and rotor. Both piston valves would be played with the right hand (as with the trumpet).

As manufacturers set about the task of retooling and implementing change in the design of the modern marching bugle, designers began to ask among themselves if it wouldn't be more prudent to go ahead and legalize the three-piston bugle.

Even staunch drum corps purists, who detested legislation that would alter their beloved "G-F" instruments, were perplexed at the concept of legalizing instruments that offered no chromatic advantage over the piston rotor instruments they would replace.

Zigmant Kanstul let it be known that the Benge Company was prepared to create a sample set of three-piston instruments for consideration. Dave Peterson submitted drawings of three piston instruments along with the two-piston prototypes by the Dynasty Bugle Corporation.

Hoping to bypass the intermediate two-piston "phase", both designers envisioned small corps gaining acceptance (and assistance) from local band directors if drum corps instruments had more in common with bell front marching band instruments. [86]

Opponents of the three-piston instruments offered several counter arguments against their legalization. Retribution from angry musician's unions, legal action from BMI and ASCAP for music

BENGAL LANCERS, Trumbull, CT (approx. 1978).
Photo by Moe Knox from the collection of Drum Corps World.

BLACK GOLD, Tulsa, OK (1990).
Photo by Orlin Wagner from the collection of Drum Corps World.

BLUE DEVILS C, Concord, CA (1997).
Photo by Cindy Groth-Pfaff from the collection of Drum Corps World.

[Figure 28] -- Advertisements for American Heritage Corporation, McCormick's/Olds and DEG/Professional Hornlines International, all appearing in 1976 to sell the new two-valve sopranos. *From the collection of* Drum Corps World.

copyright infringements and financial inaccessibility for small corps were arguments used to shift the focus away from fully-chromatic bugles. [87]

Fearing an amended proposal would fail, the DCI Brass Caucus forged ahead with its recommendation for the two-piston bugle.

Many corps were ready to refurbish their bugle choirs in the mid-1970s. By 1976, approximately 8,000 bugles were being purchased annually, nearly twice as many sold in 1966. [88]

Sensing the negative impact of corps stretching themselves financially, DCI structured their proposal to permit only the two-piston soprano for the 1977 season. Each following year, a new two-piston voice would be permitted for use by corps.

Proposal No. 1035 by Santa Clara Vanguard's Director Gale Royer and Madison Scouts' Director Bill Howard stated:

"Each bugle shall be pitched in the key of G and may have two piston valves or one piston and one rotary or two rotary valves used freely to play in two additional keys. Any other variation of these types of instruments and all other types of instruments are illegal.

"No two-piston soprano bugles may be utilized before the 1977 season. No two-piston bass baritones may be utilized before the 1978 season. No two piston mellophones, French horns, flugles or contra bass bugles may be utilized before the 1979 season." [89]

Disturbed by the possibility of a proposal for three-piston bugles arising in the near future, a disclaimer was added to the proposal:

"Note: DCI would like to go on record as being permanently opposed to any three-valve instruments."

The brass caucus voted 63 for and 24 against the proposal legalizing the two-piston bugle. The subsequent proposal was adopted by DCI.

The late 1970s were particularly hard on drum corps. The incremental financial burden to upgrade brass lines, combined with soaring insurance costs, production expenses, mismanagement and a population decrease among teenagers, proved to be too much for many corps to bear.

Between the 1978 and 1979 season, there was a startling 30% drop in the number of competing DCI junior corps. [90]

Despite the expense, a tremendous explosion of bugle designs occurred during the late 1970s and early 1980s. Instrument manufacturers retooled for the new two-piston instruments and stocked new types of voices (i.e., piccolo sopranos, alto bugles, tromboniums, flugabones, etc.).

Further refinements also occurred to the existing mellophone and French horn bugles. DEG, King and Getzen were the prominent manufacturers during this period.

The variety of instruments offered brass arrangers an opportunity to augment the art of drum corps brass arranging. The late 1970s and early 1980s are considered a "renaissance" for

BERKSHIRE MARAUDERS, Pittsfield, MA (1958).
Photo by Moe Knox from the collection of Drum Corps World.

ST. RITA'S BRASSMEN, Brooklyn, NY (1971).
Photo by Ron DaSilva from the collection of Drum Corps World.

drum corps brass sections.

The typical "world class" corps of the 1980s would likely have 10 to 20 more horns than their counterparts of the 1960s. More attention was also being placed on brass arrangements and brass performance techniques.

Pioneers like Jim Ott, Larry Kerchner, Wayne Downey and Jim Prime, Jr. were able to tailor brass arrangements that exploited the strengths of the instruments available to them.

Despite the apparent acceptance of the two-piston instruments, all was not well. Interest in the three-piston bugle had never been extinguished. Discussions for legalization of the three-piston bugle began again in 1979.

Manufacturers were appalled by the thought of retooling their equipment for three-piston bugles before they had recouped the investments made to retool for two-piston bugles. The bells, lead pipes and most other components of the bugle would not differ after the introduction of the third piston, but retooling would have to occur to manufacturer the valve assemblies.

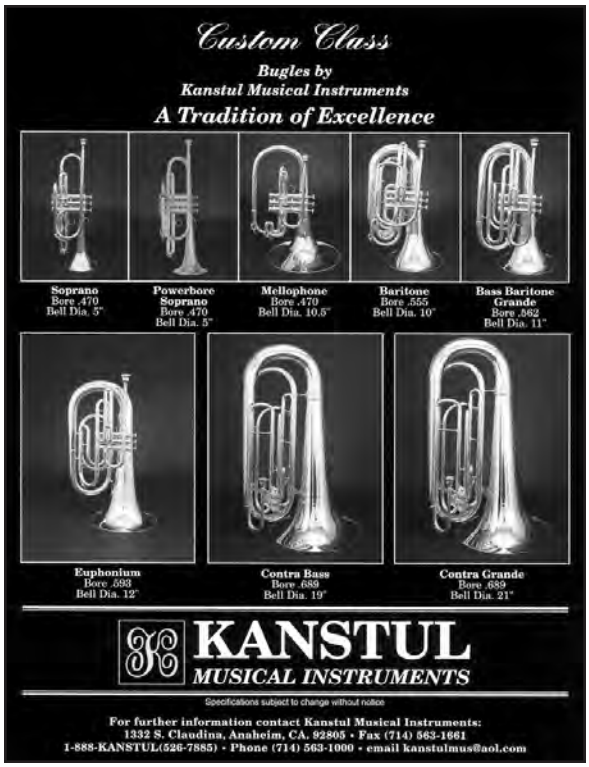
Manufacturers of two-piston bugles could expect to invest over $150,000 in order to accommodate three-piston bugles. [91]

Preferring to avoid the unstable climate of drum corps' governing body, King discontinued the manufacture of bugles during the 1980s. DEG had already begun manufacturing its "Dynasty III" line of experimental three-piston bugles in 1977. By 1979, three-piston instruments were being shipped to Europe, where corps were permitted to compete with them.

Interest in the three-piston bugle eventually led to a proposal to allow their use in DCI competitions. The initial proposal for a three-piston bugle was soundly defeated (with applause from drum corps purists) at the DCI Rules Congress held during December, 1985.

Initially aligned with a proposal to allow electronic instrumentation, the three-piston bugle issue soon separated itself from electronics and slowly gained broader-based acceptance among corps directors.

The legalization of the three-piston bugle was voted on again in December, 1987 and was approved by the Brass Caucus, but was defeated by corps directors. [92]



[Figure 29] -- Advertisement for the line of three-valve instruments produced by Kanstul in 1998. *From the collection of* Drum Corps World.

DCI's Rules Congresses occurred every two years. The process of voting on the three-piston bugle proposal every two years placed the corps and the remaining manufacturers in a unique predicament.

DCI corps ready to upgrade instruments had to decide whether to purchase new two-piston instruments or wait for the legalization of the three-piston bugle. Purchases would need to be made in the early fall if there were any hopes of having them available for winter rehearsals.

Voting on the proposal wouldn't occur until January. This set of circumstances proved costly to the manufacturers, as corps indefinitely postponed bugle purchases for fear of newly-purchased instruments becoming instantly obsolete. [93]

After careful crafting and intense lobbying, a vote again occurred in January, 1990. DCI's announcement of the legalization of the three-piston bugle was met with applause not unlike that experienced at the motion's initial defeat in 1985.

Similar to provisions in the rules change legalizing the two-piston bugle, the proposal passed for the three-piston bugle [Figure 29] allowed corps to gradually upgrade instruments over a three-year period. This concept permitted financially disadvantaged corps to "stay competitive" with corps that could have purchased all new instruments immediately.

Unlike previous rules changes, two-piston and three-piston bugles could survive together in the same horn line. Many corps slowly transitioned to three piston instruments, clinging to the free-blowing two-piston instruments.

Star of Indiana used the same line of King bugles it purchased in the Fall of 1984 throughout its tenure as a competing drum corps. Euphoniums were added in the Fall of 1985 and additional contra basses were temporarily added in 1986, but otherwise the horn line remained virtually unchanged.

Instructors believed that if players were given the chance to spend several years on one set of bugles, they would learn to compensate for any problems presented by the instruments. Ironically, the corps that prided itself on being "State of the Art" was the very last corps in history to win a championship (Star of Indiana, DCI in Dallas, TX, 1991) or to even compete in a division I finals using two-piston instrumentation exclusively.

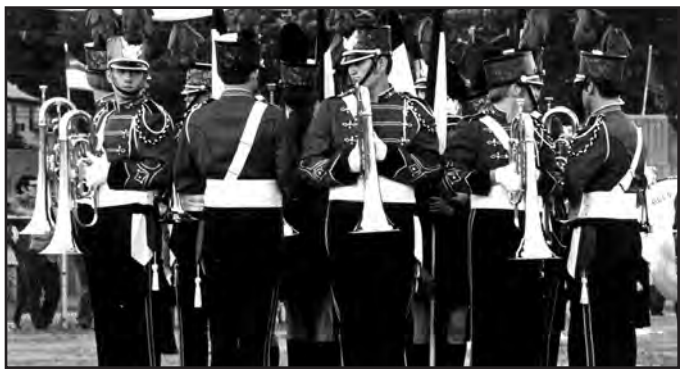
▲ *Drum corps' impact on marching band brasswinds*

Due to the efforts of bugle manufacturers during the 1960s, '70s and '80s, instruments used by marching bands began to look very similar to marching bugles. Often, manufacturers would utilize drum corps as a "testing ground" for new types of instrument designs.

Once these designs were created and successfully used by drum corps, they would

BRASSMEN, Bellingham, WA (approx. 1975).
Photo from the collection of Drum Corps World.

CAPITAL REGIMENT, Columbus, OH (1999).
Photo by Dale T. Eck from the collection of Drum Corps World.



BOSTON CRUSADERS, Boston, MA (approx. 1967).
Photo by Ron DaSilva from the collection of Drum Corps World.

often be applied to traditionally-pitched, bell-front marching instruments used by marching bands.

Despite the fact that the mellophone bugle was derived from Conn's mellophonium, the design characteristics of the mellophone bugle was eventually transferred to the marching "F" mellophone. Since the instruments were so close in pitch, it was natural for a design interchange to occur within instrument manufacturers.

Low brass instrumentation used by marching bands also began to model designs used by drum corps. Bell-front marching "B-flat" baritones began to emulate their "G" baritone bugle counterparts. The sousaphone was temporarily substituted by "over-the-shoulder" convertible tubas that resembled their countra bass bugle counterpart (except for being positioned on the opposite shoulder).

As recent as 1996, several division I drum and bugle corps were utilizing reconfigured band instruments in their horn lines, including the contra section of The Cadets and flugel horn section of the Blue Devils.

▲ *Drum corps' evolving mid-voice*

Prior to 1964, corps had no need for the term "mid-voice" because the section that occupied the space between the soprano and baritone section was occupied solely by French horns. However, things began to change after introduction of the mellophone.

[Figure 30] -- A "G-F" piston rotor mellophone imported from Germany for K-Bach (ca. 1970). *From the collection of Scooter Pirtle.*

The mellophone bugle [Figure 30] was (and remains) pitched in the same octave as the soprano (one octave higher than the French horn bugle). This permitted some of the melodic duty formerly dominated by the soprano and baritone sections to be shared with the burgeoning "middle horn" section. By 1969, flugel horn bugles would be added to existing drum corps mid-voices.

Alto bugles were also added to the mix in the 1970s. Altos often took the form of a mellophone bugle, but with a smaller bell and a much less dramatic bell flare. Some manufacturers utilized trumpet-sized mouthpieces for these instruments. However, true alto-sized mouthpieces (smaller than a trombone mouthpiece, but larger than a trumpet mouthpiece) were paired with the alto bugle.

By the 1970s, many drum corps mid-voice sections that once contained French horns or mellophones were now home to mellophones, French horns, alto bugles and flugel horns. There was a great deal of variety in the manner at which these instruments were used by their corps.

Some brass arrangers choose to pair parts of their mid-voice with other brass sections. For instance, French horns would be paired with the lead baritone section and flugelhorns would sometimes double lower soprano parts.

However, some arrangers chose to lump their mid-voice into a "choir within a choir." Robert Smith's brass arrangements utilized by Florida's Suncoast Sound used this strategy to provide thick musical arrangements.

Some corps' mid-voices would use the French horn as their foundation, flugel horns and alto bugles as "filler" instruments and the mellophone as the top voice. Despite numerous intonation problems due to such diverse instrumentation being so acoustically "compacted," many great corps were made better because of their effective use of mid-voices.

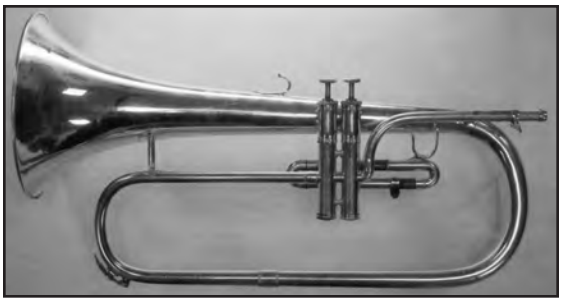
By the early 1980s, music arranger Jim Prime, Jr. and brass caption head Donnie Van Doren had streamlined the mid-voice section of the Garfield Cadets by utilizing mellophones exclusively. This "less is more" concept proved very successful for the corps and was soon emulated by many of the nation's best corps.

Instead of evolving the instrument, an evolution occurred in the way the instrument was used. A large group of identical instruments divided into two sections provided many advantages to some corps.

Intonation problems were narrowed and better handled with fewer instrument types. By the late 1980s, most corps had eliminated the French horn and flugel horn sections completely, opting instead for mellophone bugles.

Other experimentation prompted by necessity was undertaken by the Blue Devils of California in 1987. Unsatisfied with the tone quality of their mid-voice instrumentation, Jack Meehan and Wayne Downey contracted Zigmant Kanstul to create a new instrument for its mid-voice.

Called the "Meehaphone" [Figure 31], after Jack Meehan, the instrument was literally a two-piston descant horn designed in the flugelhorn style. With mouthpieces designed by Terry Warburton, the instrument served the Blue Devils from 1987 through 1991. Eventually, the section was augmented with mellophones and then replaced by flugel horns.



[Figure 31] -- A Kanstul "muffle horn", a.k.a. "Meehaphone" in "G" (ca. 1987). *From the collection of Scooter Pirtle.*

▲ *Interchangeable instrumentation*

Experimentation with bugles by North American drum corps offered many unique variations and improvements that gave their ensembles a competitive edge. Alterations occurred to improve the instrument's playing characteristics and intonation.

Sometimes bugles would be pitched in different keys or outfitted with valves that permitted additional notes for the bugle.

BLESSED SACRAMENT GOLDEN KNIGHTS, Newark, NJ (1972).
Photo by Ron DaSilva from the collection of Drum Corps World.

DYNAMICS, Oradell, NJ (approx. 1977).
Photo by Joseph Zepko from the collection of Drum Corps World.

ST. ANDREW'S BRIDGEMEN, Bayonne, NJ (1972).
Photo by Jane Boulen from the collection of Drum Corps World.

Such variations were strictly forbidden by competition rules, but since there were few influential corps "without sin," very few stones were cast. It was in this spirit that experimentation in "convertible instruments" took place during the late 1980s and early 1990s.

Contra bass bugles derived from "B-flat" recording tubas were first used by the Crossmen in 1987. Mike Dennis "created" a "G" contra bass by performing some minor alterations to a stock recording tuba.

This was accomplished by reconfiguring the lead pipe (to permit "over-the-shoulder" usage) and adding additional tubing to drop the instrument's pitch from "B-flat" to "G." After the third valve was "blanked off," the instrument was ready for the field.

The legalization of the three-piston bugle made this last step unnecessary after 1990. Kits were prepared by Dennis that allowed the instruments to be easily converted from a concert instrument to a drum corps instrument. [94]

Similar techniques were applied to marching baritones and marching mellophones. It was argued that these instruments would offer corps the advantage of renting their convertible instruments to marching bands during the "off season" instead of simply storing them.

A major foreign manufacturer of brass instruments considered adding "convertible instruments" to their line of marching instruments, but decided against it. Conversion kits were cost-effective for contra basses, but it was not economically feasible to apply the same technique to student-level marching band instruments.

▲ *Future changes*

Strong lobbying utilized by corps directors to legalize the three-piston bugle served as a model to those attempting to implement future changes. Careful crafting of the proposals, compromises and strong lobbying techniques made into reality a change in the rules that was unthinkable only a few years prior.

This strategy has been applied to electronic instrumentation and amplification. There's little doubt that the results will also be the same. Drum Corps East legalized electronic amplification in December, 1995 for its corps competing in 1996.

It is possible that the next major rules change involving the bugle could entail the legalization of different keys for the brasswinds. Presently, there are really only five voices, pitched in same key and separated by three octaves including: sopranos/middle voices, baritone/euphonium and contra bass.

By permitting instruments in different keys, the middle horns could be lowered to the key of "D" or "C" and, according to some, be permitted to truly bridge the gap between the soprano and baritone voice. [95]

Whether or not an equilibrium would occur between the big and small horns is a matter for debate, but there seems to be little doubt that instruments in any key other than "G" will not be considered a bugle.

Ironically, the concept of a dual-pitched line was utilized successfully by the Royal Artillery Bugle Band during the 1860s and the Bersaglieri during the 1870s.

This type of "overhaul" of the bugle choir would be no simple feat. Today's bugles are designed to interact with "G" instruments. The introduction of additional keys would require subtle, but necessary adjustments to existing and future instrumentation.

In previous years, corps have occasionally used bugles in keys other than "G." However "G"-pitched instrumentation is considered by many to be the modern drum corps' very last tie with its heritage. If abandoned, there's little doubt that the market for "G" instruments would be negatively impacted.

Corps would be faced with paying market prices for standard marching instruments (often twice as expensive as current "G" pitched instruments).

Proposals have already been discussed that would permit the addition of concert instrumentation to drum corps. It's possible that "B-flat" and "F" brass instruments, as well as limited use of woodwind and/or stringed instruments, could be considered for corps in the future.

▲ *Conclusion*

The creation of brass bands and drum and bugle corps in North America occurred almost simultaneously. Both developed similarly, but as distinct entities during the next 150 years.

There are many examples from the past represented in this chapter that suggest it is a natural progression for drum and bugle corps to evolve into marching bands.

As marching bands continue to incorporate instrument design characteristics developed for drum corps, and as long as drum corps continue to evolve toward incorporating variously-pitched wind instrumentation, distinctions will continue to blur and the two activities will maintain the steady course of becoming one and the same.

▲ *Special thanks*

This chapter would not have been possible were it not for the unselfish efforts of many people. Primarily, I'd like to thank bugle aficionado Jack T. Carter for his willingness to share knowledge and resources during the months it took to compile this information.

Special thanks are also extended to Randy Rach for all of his efforts in fact checking and information collection.

Others who were crucial in the compilation of this chapter include: Margaret Downey Banks of the Shrine to Music, Michael Boo, The National Boy Scout Museum, The Boys Scouts of America, Ron DaSilva, Don Daber, Ralph T. Dudgeon, Anthony Gero, Robert M. Hazen, Scott Hirsch, Historic Brass Society, Zigmant Kanstul, LeBlanc Corporation, William F. Ludwig, Jr., John McCardle, Fred Mowbray, Claire Murphy Newbold, Murray State University, Paducah Community College, Paducah Public Library, Tom Peashey, Dave Peterson, Michael Petrone, Steve Powers, Harry Roach, Chris Smith, Stuart Stack, Franz X. Streitwieser, Brian Tolzmann, Transylvania University, Steve Vickers, Wallingford Public Library, Charles Wetzell and May Wooding.

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Photo from the collection of Drum Corps World

CLOVER CADETS, Brooklyn, NY (1976).
Photo by Bill Ulis from the collection of Drum Corps World.

CRIMSON KINGS, New York City, NY (1992).
Photo by Dan Derosa from the collection of Drum Corps World.

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▲ *Listing of 20th Century bugle manufacturers and distributors*

Through the years, many companies have manufactured, imported and distributed bugles in North America. The listing that follows represents a narrow search for companies that were known to be active in the bugle market in North America after the year 1900.

Nearly every brass instrument and band instrument manufacturer of the late 19th and early 20th Centuries produced or distributed bugles. Technically, any company capable of producing a trumpet, cornet, trombone or horn would subsequently be able to manufacture a bugle.

It is for this reason that there is such an abundant number of band instrument companies included in this section.

It was very common for instrument companies to hire manufacturing firms to produce their wind instruments, particularly percussion manufacturers. For instance, Ludwig contracted various manufacturers to make bugles bearing the Ludwig name.

So, even though the bell stamp reads "Ludwig," the instrument may have been manufactured by the Frank Williams Company of Chicago, IL, or the Frank Holton Company, also of Chicago, IL, and later of Elkhorn, WI.

There is even evidence to suggest that some early Ludwig sopranos were manufactured in Austria, Czechoslovakia and Italy.

One may peruse this listing in hopes of seeing familiar names from years past. If a particular manufacturer eludes discovery, please search the heading "Trade Name." The specific name being sought may be in this column.

Often, trade names will be the only identification on the bugle's bell. These names do not necessarily denote the instrument's manufacturer and may simply be trade names or even distributor's names.

Please note that many imported bugles often had no markings whatsoever. Generally, these instruments were imported from Japan, Germany, Switzerland, France, Italy, Bohemia and Czechoslovakia.

SPECTACLE CITY MARINERS, Greendale, WI (approx. 1967).
Photo by Bob Scholl from the collection of Drum Corps World.

BARRINGER WALKER SAL, Lyndhurst, NJ (1959).
Photo by Walter Ermel from the collection of Ron DaSilva.

GOLDEN EAGLES, L'Anse, MI (1959).
Photo from the collection of Ron DaSilva.

The year 1900 has been selected arbitrarily as the beginning of the time frame encompassed by this listing.

Some manufacturers included in this listing will have instruments cited during the late 1800s. These are included if there is sufficient reason to believe that the instruments offered in catalogs prior to the turn of the century would most likely have been offered during the early 1900s.

For all practical purposes, the widespread evolution of the bugle temporarily ceased during the 1890s. The formation of a nationwide network of American Legion corps following World War I set in motion a new era in bugle innovation and design that continues to this day.

The purpose of this listing is to recognize these manufacturers.

This list was gathered from an exhaustive search through old product catalogs, advertisements, serial number listings, personal archives, private bugle collections, museum instrument collections, wind instrument manufacturer indexes, interstate rest stops, historical texts and interviews with manufacturers.

A great deal of the information was gleaned from the detailed text of *The New Langwill Index* and *A Dictionary of Musical Wind-Instrument Makers and Inventors*.

Special thanks are also extended to bugle scholar Jack T. Carter for his help in compiling this data. Robert Hazen, author of *The Music Men: An Illustrated History of Brass Bands in America, 1800-1920*, unselfishly added information for this listing from his copious collection of antique instrument catalogs.

Zigmant Kanstul and Dave Peterson graciously reviewed this listing and provided much-need verification and additional information.

Note: Exact dates were sometimes elusive. If a lower case "c" precedes a date, it indicates "circa" or an approximate date.

If a lower case "p" precedes a date, it indicates that manufacture or distribution most likely occurred past this date.

If a lower case "b" appears before a date, it indicates that manufacture or distribution most likely occurred before this date, but verification has not been sufficiently documented.

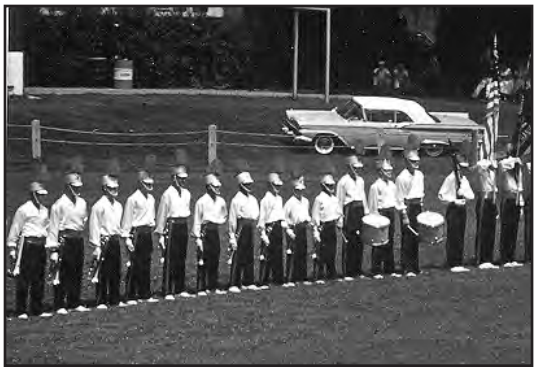
Manufacturer and/or Distributor	Trade Name	Description
Abott Manufacturing Company		New York City, NY. c1920-c1940, Brass instrument importer. Featured various voices of "G" bugles with and without a single piston. Abott bugles featured in Buegelleisen and Jacobson Catalog #170 (c1930).
Acuña, Thomas		San Antonio, TX. Boy Scout bugle design shown in 1940 catalog.
Allied Supply Corporation		See D.E.G.
Arman, Frank	"Official Bugle"	Chicago, IL. Frank Arman designed a plastic bugle available in white and olive drab. Created for the Army, but adopted by the Marine Corps, Navy and later the Boy Scouts, plastic bugles were fashioned after "G" military trumpets. These were manufactured during World War II when metal shortages forbade the use of strategic metals for musical instruments. Plastic bugles were also available after the war. Two slightly different models are known to exist.
American Heritage Corporation	"American Command"	Anaheim, CA. Offered a two-piston "G" soprano bugle in 1976 that was designed and built at the Benge facility. Trademark for the instrument was "Superhorn of the Seventies." Prototype instruments in soprano, mellophone and baritone voices were produced. These instruments were sold to H.N. White Co. and evolved into the "King" line of two-piston bugles. See "White, H.N. Co."
Bach, Vincent	"Stradivarius"	New York City, NY, 1919-1953, Mt. Vernon, NY, 1953-1965, Elkhart, IN, 1965-present. "B-flat" valveless bugles for the military were designed by Bach in 1955. Two sets of 16 instruments were made for the U.S. Army Band. These instruments "are used daily for military funerals at Arlington National Cemetary and the Tomb of the Unknowns when visiting heads of state or military chiefs of staff participate in the traditional wreath-laying ceremony." Production has occurred on a severely limited basis. Bach "B-flat" bugles are used to render *Taps* at U.S. Presidential funerals.
Barnes, H.C.		Boston, MA, 1891 catalog shows a variety of bugles including an Officer's Bugle, Bicycle Bugles, Infantry Bugles in "B-flat," Cavalry Trumpet in "F," Boat Horns, Post Horns, Hunting Horns, Signal Horns and Coaching Horns.

ST. ROSE OF LIMA, Newark, NJ (1960).
Photo Walter Ermel from the collection of Ron DaSilva.

MARQUIS, Fond du Lac, WI (1976).
Photo by Eddie Montville from the collection of Drum Corps World.

IRWIN KINGSMEN, New York City, NY (1958).
Photo by Walter Ermel from the collection of Ron DaSilva.

Manufacturer and/or Distributor	Trade Name	Description
Benge, E., Company		Anaheim, CA. See "American Heritage Corporation."
Blessing, Emil Karl		Elkhart, IN, 1910-present. A three-valve "G' trumpet, intended for orchestral use, was offered during the mid-1970s. Blessing planned for these instruments to be adopted by drum and bugle corps, but competition rules forbade their use.
Boston Musical Instrument Manufacturing		Boston, MA, 1869-1919. Manufactured "Fire Department and Officer's Bugles" as well as "Infantry Bugles" that were featured in c1865 catalog.
Bruno, C. and Sons, Inc.		New York City, NY, 1834-present. Importers of brass instruments 1834 through the 1950s. Featured valved "Signal horns" in 1888 catalog.
Buescher	"Regulation," "True Tone"	Elkhart, IN, 1894-present. Bugles advertised for Boy Scouts and for Legionnaires.
Buglecraft, Inc.	"Boy Scout" "Drum Major" "Rex" "Rexcraft" "Rexcraft/Official Bugle" "U.S. Regulation"	New York City, NY, 1933-present. Purchased the company known as "Rexcraft" in 1933 and began selling a brand name called "Rexcraft." Imported regulation bugles for military, bands, corps, etc. Evidence also exists of domestic bugle manufacture. Distributor of "Official" Boy Scout bugle. In 1985, the Boy Scouts of America (BSA) discontinued its approval of the "Rexcraft" model in favor of a new "U.S. Regulation" model. In 1986, the BSA chose to discontinue any official bugle for Scouts. Presently located in Long Island City, NY, the company still sells brass bugles, whistles, fifes and drum shells.
Chicago Musical Instrument Company		Chicago, IL, 1920 through 1979. Frank Aman designed and produced plastic bugles for CMI during the 1940s. CMI owned "F.E. Olds."
CMI		See "Chicago Musical Instrument Company"
Coleman, Harry		New York City, NY, 1895-1917. Coleman purchased Missenharter facility in 1892. Offered a full line of brass instruments under the names "Coleman" and "Missenharter." "G" bugles were made for the military. See "Missenharter."
Continental Music Company		San Francisco, CA. Catalog published in 1932 features American Legion bugle in "G,' Regulation Army Bugle, Officer's Bugle in "G" and French style "Clarion Bugle" in "B-flat." Plastic bugles sold during the 1940s. See "Aman."
Conn, C.G., Ltd.	"Conn Wonder Bugle" " Conn Wonder Little Scout Trumpet" "Official Bugle"	Elkhart, IN, 1879 to present. A preeminent brass inistrument manufacturer, Conn manufactured bugles for military and also an "Official" bugle licensed by the Boy Scouts of America. Considered today as some of the best playing bugles ever made in the U.S. Evidence exists of standard pattern bugles and an interesting single vertical piston model called the "Wonder Little Scout Trumpet" in "B-flat." Horizontal single-piston bugles in "B-flat" in several voices were also manufactured for the Marine Corps. May have temporarily manufactured a single-piston "B-flat" bugle for Ludwig during the early 1930s.
D.E.G.	"Dynasty" "Dynasty I" "Dynasty II" "Dynasty III"	Lake Geneva, WI, 1964 to present. Named after Donald E. Getzen, D.E.G. was formed after Getzen was sold to H.M. Knowlton. Three lines of bugles, Dynasty I, II and III (with the numerals denoting the number of pistons) were distributed (II and III produced simultaneously). Three-valve bugles available for European use as early as 1979. Manufacturers of D.E.G. instruments have included Weril (Brazil), Willson (Switzerland), Allied Supply Corporation (U.S.A.) and others. Now manufactures a complete line of "B-flat" instruments for the drum and bugle corps (approved by DCI in 2000) and marching band activities.



ST. CATHERINE'S QUEENSMEN, St. Albans, NY (1959).
Photo by Walter Ermel from the collection of Ron DaSilva.

ST. CATHERINE'S MARIANETTES, St. Albans, NY (1959).
Photo by Walter Ermel from the collection of Ron DaSilva.

BLUE KNIGHTS, Berwyn, IL (approx. 1958).
Photo by Walter Ermel from the collection of Ron DaSilva.

Manufacturer and/or Distributor	Trade Name	Description
Ditson, Oliver, Company		Boston, MA, 1888 through 1931. Not to be confused with Henry Distin, the Oliver Ditson Company was one of the larger musical instrument dealers. The company manufactured brass instruments that likely included bugles. Purchased smaller companies, including Lyon & Healy.
Domage, Eugene		Philadelphia, PA, brass maker, 1899 through 1930. Evidence of bugle manufacturing during the 20th Century.
Dyer, William John	"W.J.Dyer & Bro."	St. Paul, MN, 1882-p1941. Noted as one of the largest music stores west of Chicago during the late 1800s, Dyer imported brass instruments. A Boy Scout bugle was distributed.
Dynasty Bugle Corporation		See "D.E.G."
Fischer, Carl		New York City, NY, 1872-p1950. In 1910 catalog: Officer's Bugle in "C/B-flat," English-style Infantry Bugle in "C/B-flat," Cavalry and Infantry Bugles in "G/F," Bicycle Bugles and Post Horns. Early pattern U.S. Navy and Marine Corps "F" Trumpets also manufactured.
Frank, William, Company		Chicago, IL, 1910-p1950. W. Frank initially worked for "Holton," allegedly produced the first valved bugle for Ludwig in 1927. Produced "G-D" piston bugles in soprano, tenor and baritone voices that were featured in Buegeleisen and Jacobson catalog c1940.
Getzen	"Titleist" "Elkhorn" "Deluxe"	Elkhorn, WI, 1946-present. Formed by A.J. Getzen who worked with York, Wurlitzer and Holton before producing instruments independently in 1946. Produced bugles through the 1970s. "Titleist G-D" bugles dominated the junior corps market during the 1960s until the Olds "G-F" was introduced in 1968.
Grand Rapids Band Instrument Company	"U.S.A. Line"	Grand Rapids, MI. Associated with York Band Instrument Company.
Gretsch, Fred, Manufacturing Company	"Gretsch American"	Brooklyn, NY, 1883-present. Noted more for woodwind instruments, was known to distribute "G-D" bugles as early as 1935. An American Legion straight "G" bugle also encountered. Catalog from 1936 features a full line of valveless and valved bugles.
Grossman Music Corporation	"Champion"	Cleveland, OH, 1921 through present. Evidence of a "Champion" line of bugles produced.
Heald, John, Cornet Company		Springfield, MA, 1887-1927. Became Springfield Band Instrument Co. in 1927. Evidence exists of bugle manufacture.
Hollerbach, Kent	"K-Bach"	Belleville, IL, late 1960s. Hollerbach sold instruments with "K-Bach" trade name that were manufactured in Germany and imported to the U.S.A. "G-F" valve-rotor circular mellophone encountered.
Holton, Frank, & Company, Inc.	"The Legionnaire" "Classic" "Frank"	Chicago, IL, 1907-1918, Elkhorn, WI, 1918 through present. Manufactured "G" bugles under the name Holton and for other distributors (including Ludwig and Slingerland). Some "B-flat" piston bugles also manufactured.
Jenkins, J.W., & Sons Music Company		Kansas City, MO, early 20th Century. "B-flat" Army bugles, U.S. regulation bugles in "G," Clarion Militaire in "B-flat" and long model Post Horns.
Kaemph, R. A., & Sons	"R.A. Kaemph & Sons"	New York City, NY, 1878-1911. Military bugles encountered.
Kaiser & Kohler		Cincinnati, OH, 1857-1893. Supplied Wurlitzer and Peters with brass instruments, including some bugles.

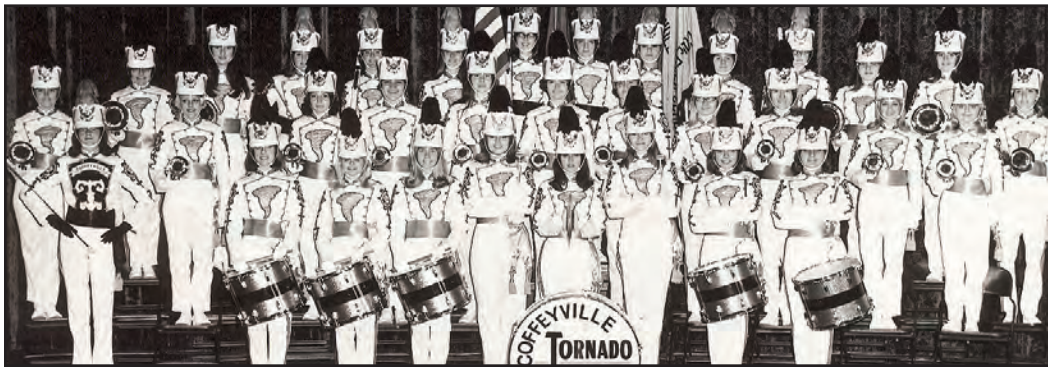
ST. NICHOLAS ALL-GIRL, Egg Harbor, NJ (1957).
Photo by Walter Ermel from the collection of Ron DaSilva.

ANDREW JOHNSON PRESIDENTS, Greeneville, TN (1958).
Photo by Walter Ermel from the collection of Ron DaSilva.

BLACK KNIGHTS, Belleville, IL (1971).
Photo by Jane Boulen from the collection of Drum Corps World.

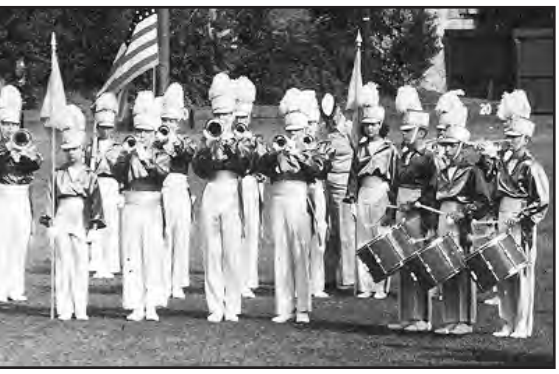
Manufacturer and/or Distributor	Trade Name	Description
Kanstul Musical Instrument Company	"Kanstul" "Custom Class"	Anaheim, CA, 1986-present. Zigmant Kanstul had designed instruments for Olds, Benge, Burbank, King, Boosey & Hawkes and others. Introduced "G-F" piston-rotor bugles in 1968 for Olds. Kanstul three-piston bugles available since permitted by DCI in 1990. Now also has a complete line of "B-flat" instruments approved by DCI in 2000.
Keefer Band Instrument Company		Williamsport, PA, 1909-1942. Purchased from Henry Distin Manufacturing Co., Keefer produced a line of brass instruments including bugles.
King Band Instruments	"King"	See "White"
La Rosa, J., & Company		Long Island City, NY. Firm known to have distributed instruments c1940. Bugles by "La Rosa" encountered.
Lawler, Roy		Orlando, FL. Custom trumpet manufacturer that produced horizontally-valved bugles for Old Guard Fife and Drum Corps of Washington, D.C.
Leedy & Ludwig	"Professional"	See "Leedy Manufacturing Company, Inc."
Leedy Manufacturing Company, Inc.	"Solo-tone G-D" piston bugles "Professional"	Indianapolis, IN, 1895-1930, Elkhart, IN 1930-1955. Major percussion manufacturer that was purchased by C.G. Conn, Ltd. c1930. Ludwig merged with Leedy in 1930 and moved to Elkhart. Leedy sold straight valveless bugles in several voices, as well as piston bugles in its 1937 catalog.
Leland, S.R., and Son	"L&S"	Worcester, MA, 1883-1915. L&S was a piano manufacturer that began manufacturing brass instruments in 1883. Evidence exists of bugle manufacture.
Ludwig	"Professional" "Regulation" "Courterier"	Chicago, IL 1909-present. Independent percussion manufacturer that merged with C.G. Conn, Ltd. in 1930. Manufacturing facilities were moved to Elkhart and merged with Leedy. Ludwig began contracting firms to manufacture bugles such as Frank Williams Co., Holton, Conn, and others. Some bugles bearing the Ludwig name were imported from Europe.
Lyon & Healy	"Champion" "Scout Master"	Chicago, IL, 1864-present. Dominant mail-order percussion instrument company. Sold any equipment required by drum corps of the 1920s and 1930s. Several bugle styles in 1881, 1886 and 1891 catalogs. In 1923, set up E.A. Couturier Band Instrument Co. Manufactured instruments between 1923-30, afterwards contracted out manufacturer of brass instruments. Today, Lyon & Healy is a noteworthy manufacturer of harps.
McCormick's Enterprises, Inc.		Elk Grove Village, IL, and later Arlington Heights, IL. Initially known as Percussion Enterprises during the early 1960s, the company distributed bugles and percussion instruments, sole distributor of Olds bugles during 1960s and 1970s. Provided specialized services for drum corps, including service technicians and supplies available to corps at competition sites. Also provided corps music arrangements, instructional personnel and instructional media. Still in operation.
Metropolitan Music Company		New York City, NY. Catalog #10 from 1935 featured American Legion bugle in "G," Boy's Bugle, Cavalry Bugle, Bass Bugles in "G" and "F."
Millard, F., Company		Detroit, MI, 1914-a1920, Plymouth, MI, 1920-c1931. Brass instrument manufacturer F. Millard Co. in Detroit, F. Millard Band Instrument Company in Plymouth. Millard bugle from 1917 encountered denoting Philadelphia as its origin. Evidence of shared components with Weymann of Philadelphia. "G" bugles contracted by U.S. Navy dated 1918 also encountered.

ROYAL AIRS, Chicago, IL (1964).
Photo by Ron DaSilva.



TORNADOS, Coffeeville, KS (approx. 1965).
Photo from the collection of Drum Corps World.

Manufacturer and/or Distributor	Trade Name	Description
Missenharter		New York City, NY, 1870-1917. Charles Missenharter migrated from Germany. Manufactured a full line of brass instruments including "G" bugles. Bought by Coleman in 1892. See "Coleman."
Olds, F.E., & Sons	"Ultratone I" "Ultratone II"	Los Angeles, CA, c1908-present. Evidence of bugle manufacture as early as 1942. Began producing "G-F" piston-rotor bugles in February, 1968 under management of Zigmant Kanstul, evolving into two-valved bugles in 1976. Manufacturer of bugles ceased around 1979.
Osborn, Frank D.		Greenfield, MA. Catalog from c1890 featured Officer's Bugles, Cavalry Trumpets, Infantry Trumpets, Boat Horns, Post Horns and Hunting Horns.
Pepper, J.W.	"J.W.P. Premier (U.S. Reg.) Trumpets" "J.W.P. Standard Trumpets"	Philadelphia, PA, 1876-1919. Manufactured brass instruments under numerous trade names. Also produced instruments for other distributors. Manufactured 2,980 Military Trumpets for U.S. Army prior to 1903.
Percussion Enterprises		See "McCormick's, Inc."
Pond, William A., Company		New York City, NY. 1890 catalog featured bugles including a Boosey & Co. (London), Duty Bugle with a *three-valve* attachment! Also had Duty Trumpets and Bicycle Horns.
Reiffel & Husted	"R&H" "Royal" "Star"	Chicago, IL, 1916-1930. Brass instrument manufacturer that produced a variety of military bugles (2,000 by 1927). Afterwards, bugle manufacturing sporadic. An Officer's Bugle encountered.
Rexcraft	"Rexcraft Official Bugle"	New York City, NY, b1919-1933. Rexcraft was a bugle importer that began distributing "Official" bugles for the Boy Scouts of America in 1919. In 1933, Rexcraft was purchased by "Buglecraft."
Rogers, Joseph	"Rogers Bugle"	Cleveland, OH, c1910-p1950. A percussion instrument manufacturer that developed a "G" bugle specifically for use by North American junior corps.
Sears Roebuck & Company	"Silvertone"	Chicago, IL, 1893-present. Mail-order instrument importer and distributor. Catalog from 1904 features Regulation Cavalry Trumpet, Infantry bugle in "B-Flat," Cavalry Bugle in "F," Officer's Bugle in "C," Artillery Bugle in "B-Flat," and "Hunting Horn."
Selmer Company, The		Boston, MA, 1904-1927, Elkhart, IN, 1927-present. Manufacturer of brass instruments. Has manufactured military bugles in "B-Flat" under the "Vincent Bach" trademark.
Slater, Moses		New York City, NY, 1865-c1920. In association with Henry Distin, manufactured brass band instruments. Officer's Bugle available in 1875 catalog. Production likely continued afterwards.
Slingerland, H.H.	"Professional" "Howard C. Knobel"	Chicago, IL, 1916-present. Percussion manufacturer that began to include bugles in product catalogs.
Smith Music Company		Chicago, IL, c1960s. Glenn Smith imported and distributed instruments manufactured in Germany and other European countries. Circular French horn and mellophone bugles evident during the early 1960s. Noted for developing a four-quarter size contra bass during the 1960s.
Snyder & Hannold		Philadelphia, PA. Catalog published in 1900 features Bicycle Bugles, Officer's Bugles, Cavalry Bugles and Infantry Bugles.
Stratton, John F.		New York City, NY, 1859-1912. Producer of military bugles during Civil War and prominent military instrument manufacturer after the war.



ST. BERNADETTES, Brooklyn, NY (1956).
Photo by Walter Ermel from the collection of Ron DaSilva.

ATLANTIC BRASSMEN, Boston, MA (1991).
Photo by the Kingsleys from the collection of Drum Corps World.

BAYOU CITY BLUES, Houston, TX (1999).
Photo by Harry Heidelmark from the collection of Drum Corps World.

Manufacturer and/or Distributor	Trade Name	Description
U.S. Regulation		Trade name employed for domestic and imported bugles meeting military specifications. Numerous manufacturers and importers utilized this common identification for their instruments. Occasionally, imported bugles will identify the nation of origin on its mouthpiece receiver.
Weymann, Henry A.	"Keystone State"	Philadelphia, PA, 1864-p1942. Became H.A. Weyman & Son by 1885. Incorporated in 1920, closed p1942. Brass instrument manufacturer. Evidence of single piston "G-D" bugle in several voices encountered. A regulation trumpet in "G" also manufactured.
Whaley Royce & Company	"Imperial" "Ideal"	Toronto, ONT, c1910-present. Small custom bugle manufacturer that introduced a durable rotary valve for bugles in 1930. "B-flat" bugles with a primary piston lowering the pitch to "F" were manufactured for Canadian corps. Several new "G" bugle types introduced during the 1950s and 1960s, including mellophone, euphonium and contra bass bugles. Experimental "C" contra used in Canada during the 1960s. "Ideal" trade name used for economy line of bugles.
White, H.N., Company	"H.N. White" "King" "Official Bugle"	Cleveland, OH, 1907 through present. Began manufacturing a full line of band instruments in earnest by 1907 under the direction of F. Reynolds. Acquired Cleveland Musical Instrument Co. in 1925. U.S. Army Officer's Bugle in "C" (spec. 1152) encountered with Philadelphia denoted as its origin. "Official" bugle manufactured for Boy Scouts of America during the 1920s. Eleven models of King "G-D" bugles with horizontal piston offered in 1930. The 1940 catalog showed 10 models with single pistons available in vertical or horizontal position. Produced a successful line of two-piston bugles during the late 1970s through the mid 1980s. See "American Heritage Corporation."
Wurlitzer, Rudolph, Company	"Boy Scout" "American Legion"	Cincinnati, OH, 1856-1914, and Chicago, IL 1865-1920. Dominant supplier of band instruments. Also produced several types of military bugles. Catalog from 1913 featured Regulation Army trumpets in "G" and "B-flat" and an "F" trumpet for the Navy. Catalog of early 1920s featured Regulation U.S. Army trumpet in "F," Regulation trumpet in "B-Flat," Coaching Horn and Post Horn. Common "long" design "G" bugle for American Legion also available during 1920s and 30s.
York Band Instrument Company		Grand Rapids, MI. Began producing bugles in 1882. Established in Grand Rapids, MI, in 1882 as importers, began manufacturing in 1885. Assisted by Holton for one year as York & Holton. In 1900, became J.W. York & Sons. During 1926/27 became York Band Instrument Co. Several single-piston voices in 1932 catalog. Company sold to Carl Fischer in 1940. Regulation "G" bugles also sold to U.S. Army.
Zimmeremann, C.F., and Sons		Philadelphia, PA. Catalog c1890 featured Officer's Bugles, U.S. Regulation Trumpets in keys suitable for Cavalry and Infantry.

Officer's Bugle in "C." Manufactured by Reiffel & Husted, spec. 1152, on February 27, 1918 in Chicago, IL. *Photo by Scooter Pirtle.*

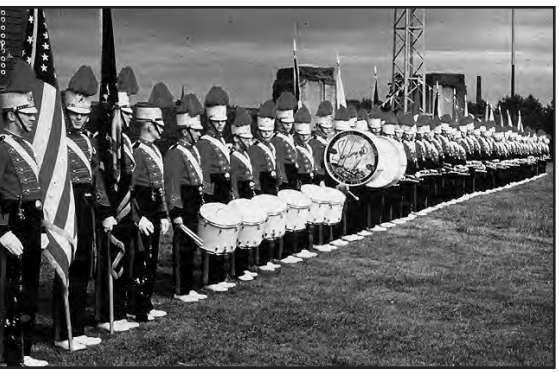
Rexcraft "U.S. Regulation" bugle in "G" ca 1980. *Photo by Scooter Pirtle.*

ARIZONA SUN, Tempe, AZ (1992).
Photo by Orlin Wagner from the collection of Drum Corps World.

BLUE SAINTS, Sudbury, ONT (1995).
Photo by Dan Scafidi from the collection of Drum Corps World.

BUCCANEERS ALUMNI, Reading, PA (1998).
Photo by Harry Heidelmark from the collection of Drum Corps World.

Throughout the book are examples of artwork produced for the drum and bugle corps activity during the last 30 years that has appeared in issues of *Drum Corps World*.



NEW YORK SKYLINERS, New York City, NY (1960).
Photo by Walter Ermel from the collection of Ron Dasilva.

CRESCENDOS, St. Bruno, QUE (1984).
Photo by Moe Knox from the collection of Drum Corps World.

SENECA PRINCEMEN, Willowdale, ONT (1972).
Photo by Peter McCusker from the collection of Drum Corps World.