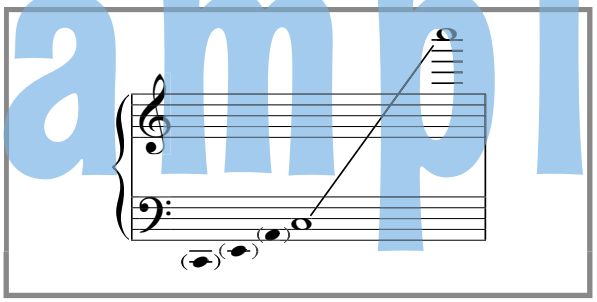
MARIMBA

The marimba is one of the most important instruments in today's pit ensemble. Its warm tone, depth, and color are essential to the overall sound of the group.

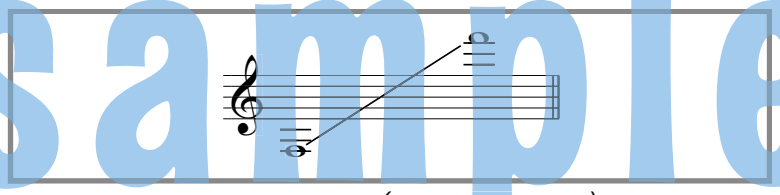


Standard range 4 to 5 octaves: (sounds as written)

The best sounding marimba **bars** are made of **rosewood**. Though rosewood is a fairly durable material, it can be quite fragile when you consider how thin a marimba bar can be, especially in the lower register. Still, rosewood marimbas have an unsurpassed resonance and tone quality, and are the standard to which synthetic barred instruments are compared Unfortunately, there is a downside. When exposed to sunlight, rosewood instruments tend to "dry out" and sound a little "dead." Rosewood bars can also go out of tune, temporarily, when subjected to extreme heat. Also, rain and humidity are "evil" realities that will take no pity on your poor rosewood bars. With proper care, using rosewood marimbas outdoors can be a wonderful thing. However, you need to have a plan on how to cope with the elements that Mother Nature will inevitably throw your way. (see page 90)

VIBRAPHONE (a.k.a. vibes)

The vibraphone is one of the most essential instruments in the pit due to its mellow, metallic sound and its ability to sustain.



Range: 3 octaves (sounds as written)

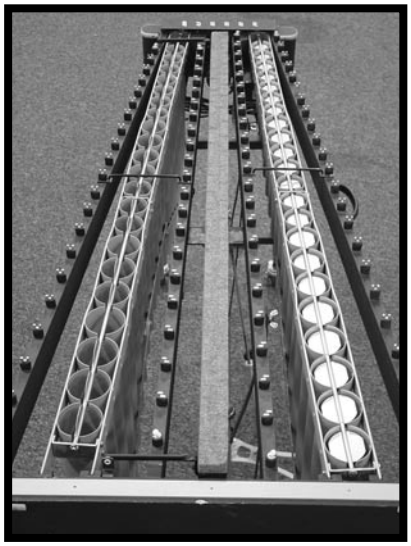
Vibraphone bars are made of aluminum, and generate their unique sound from a sustain pedal (*similar* to a piano), and a motor which controls fans at the top of each resonator tube. These fans allow the instrument to have a vibrato sound - hence the name, "vibraphone." These instruments were also called "vibraharps" when first invented.

Vibraphone bars are either graduated in width (wider toward the lower range, getting narrower toward the top range), or non-graduated, in which all the bars are the same width. Instruments with graduated bars offer a superior sound quality over those with non-graduated bars Simply put, bigger bars "move more air," giving you a bigger, fuller sound quality. Though graduated bars may cost you a few hundred dollars extra, it is a necessary investment, particularly when playing outdoors.

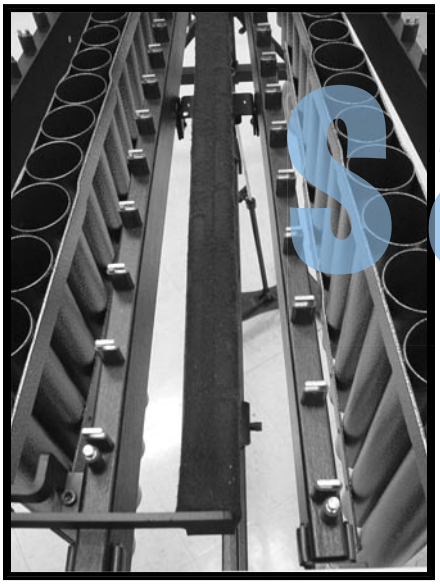
Being one of the most crucial elements in the overall sound of your pit, it is usually best to use at least two vibraphones. This will help you to achieve a **full ensemble sound**. Naturally, this may be limited by size or budget constraints, but having two or more vibraphones in your pit will drastically increase the sound quality of the pit, and ultimately your band.

Helpful hints for vibes

If you are not using the motor outdoors**, be sure that the resonator fans are in the "open" position** prior to playing on the vibraphone. If they are closed, the mouth of the resonator will be sealed off, giving the instrument a very thin sound that lacks volume and richness. Always check this prior to rehearsing and performing!

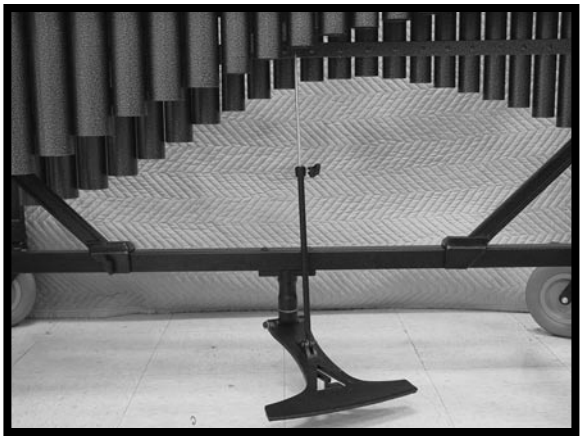


Notice here that one set of resonator fans are open (left), while the other set of resonator fans are closed (right)



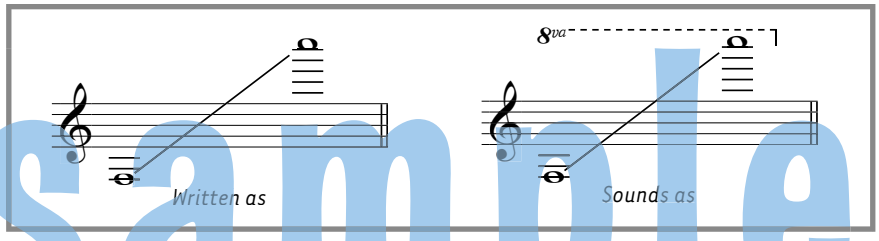
Don't let the felt dampening bar get wet! Moisture is the most common "killer" of vibraphone felts. If the instrument gets wet, remove the bars and use a hair dryer to dry the felt. If you don't do this, the bars will compact the felt and the dampening bar will no longer dampen the sound. Even worse, your instrument may get moldy. Yuck! If your felt has become compacted, or is falling apart, the good news is that you can purchase replacement felts. The bad news is that they can be a little expensive, and are difficult to secure to the instrument in an even fashion. When replacing the felt, be patient and do your best. The care and maintenance of this dampening bar is a big part of the instrument's overall sound quality.

Be sure the pedal mechanism doesn't squeak! Nothing is more disconcerting than listening to a squeaky vibe pedal. A couple squirts of WD-40 will take care of this.



XYLOPHONE

The xylophone is probably the most common instrument in pits across the country. In fact, most schools own a xylophone before they own a marimba or vibraphone.



Standard range 3½ octaves: (sounds one octave higher than written)

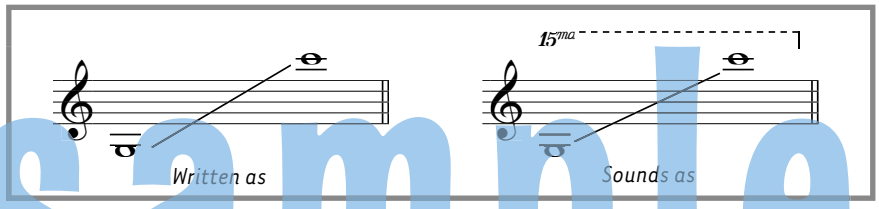
Some of the most famous music written for **xylophone** can be heard in the ragtime music of George Hamilton Green and Harry Breuer, Porgy and Bess by George Gershwin, and Colas Breugnon by Kabalevsky to name only a few. Xylophone is used in much of the standard orchestral and concert band repertoire and is frequently employed in the marching activity, making it one of the most popular and versatile instruments of the keyboard percussion family.

Due to a different tuning process than the marimba, xylophones have a much "brighter" and more "staccato" sound. Like the marimba, xylophones have wood (rosewood) or synthetic **bars**. Since xylophones are most often played with uncovered **mallets** (plastic or rubber), synthetic bars are recommended for outdoor use because they can withstand the punishment that these mallets often deliver. Also, this instrument sounds an octave higher than written, and is considered a "transposing" instrument. This is an important consideration when arranging.

As a result of the tuning process, the mallet selection, and the octave transposition the xylophone is one of the easiest instruments to hear outdoors. Simply put, this instrument has extreme **"cutting" power**. Use this power wisely. You must take into account "blend" and "balance" with the overall marching band or drum corps. It's very easy for the "crisp" sound of the xylophone to dominate over the other instruments. Many of these balance and blend issues can be handled by smart scoring and good mallet selection.

GLOCKENSPIEL (a.k.a. orchestra bells)

Like the xylophone, the glockenspiel is an instrument that is used widely in orchestra & band settings. Also like the xylophone, a good quality glockenspiel is a must for any pit.



Standard range 2½ octaves: (sounds two octaves higher than written)

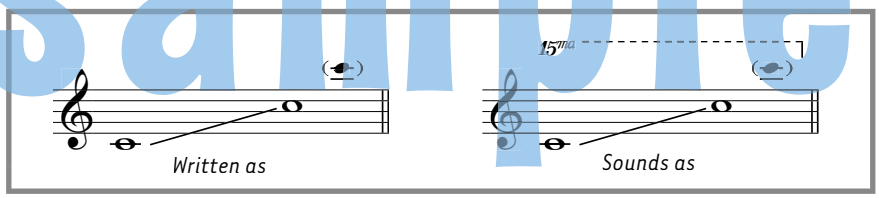
The best glockenspiels are made with **steel bars.** Though you've probably seen old bell lyres that have aluminum bars. These aluminum barred bell lyres aren't exactly the highest quality instruments. They don't sustain for very long, and they tend to get beaten out of tune very easily since the aluminum is so soft. A good quality steel barred instrument will last for many years and provide a long sustained, pure tone.

The worst enemy of the glockenspiel is **rust**. Most glockenspiels come with bars that are plated with chrome or nickel. If moisture finds its way into any flaws in the plating, it doesn't take long to start to develop rust spots. Rust most easily develops around the "node" hole where the bars are mounted to the frame. Rust will not only tarnish your instrument's good looks, but it will decrease its brilliance in sound. Keep the bars polished and dry. A good metal polish like Simi-chrome or Brasso should do the trick. If your pit is caught in the rain, make sure the glockenspiel and other metallic instruments are the first ones put under the tarp or carried to safety. When the instruments are brought inside they should be dried thoroughly. This will take some time for pit members to accomplish, but that's part of the gig!

Glockenspiels are generally played in their **case**. The case contains rails which are usually lined with felt strips or rubber pads on which the bars rest. Whatever type of glockenspiel you are using, it is important that the case be taken care of as it *directly affects* the sound of the instrument. Be sure there is as little "surface contact" between the case and the bar as possible.

CROTALES

Crotales can be purchased in one or two-octave sets, or as individual notes.



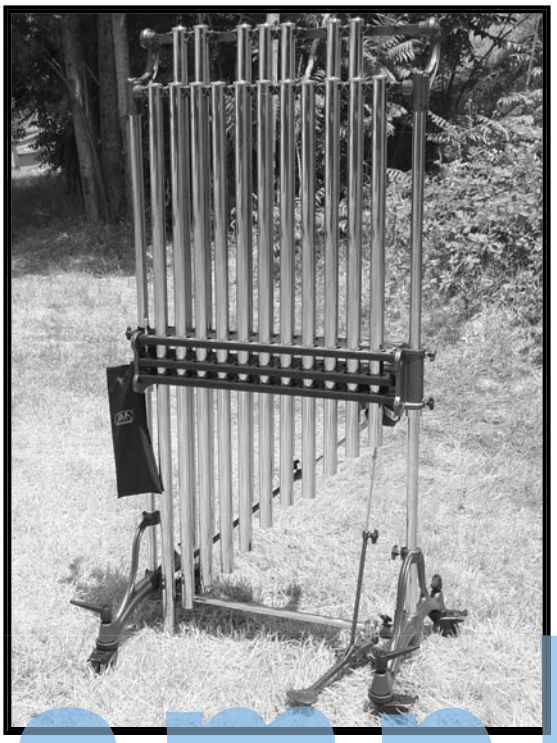
Range: one or two octaves (sounds two octaves higher than written)

Crotales (pronounced cro-TAH-lees) can add a new dimension to the sound of your pit with their colorful tone. Crotales (sometimes called "antique cymbals") are thick, chromatically tuned metal disks that resemble an upside-down cymbal. Like the glockenspiel, they produce a bright timbre, however they have a more "shimmery" sound and a much more complex set of overtones.

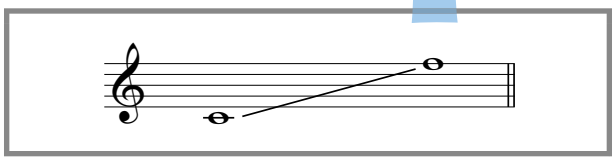
Typically, crotales are sold by the octave (single chromatic octave sets contain 13 disks) and most manufacturers offer them in two different octaves. They tend to be expensive, so it's usually best to assume that the "standard" crotale range is ONE octave.

Since crotales supply a bright, "shimmery" effect, they are most commonly played with **hard mallets** (plastic, aluminum, or carefully with brass). It's important to note that these disks are easily hammered out of tune, especially after being exposed to direct sunlight. Because of this, it's good practice to cover the crotales with a white towel when they are not in use during an outdoor rehearsal and it is best to play with a *light touch*. This will produce a well-blended and musical tone. Save the hammering for metal shop!

CHIMES



Often mistakenly called "tubular bells," chimes are another standard member of the pitched percussion family. Made of long, thick brass tubes, chimes have a very noble sound that blends well with a variety of instruments.

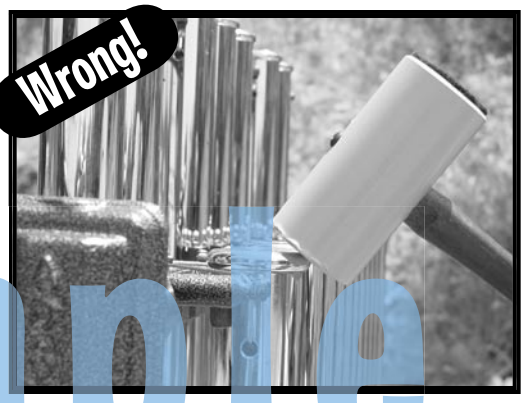


Range: 1½ octaves (sounds as written)

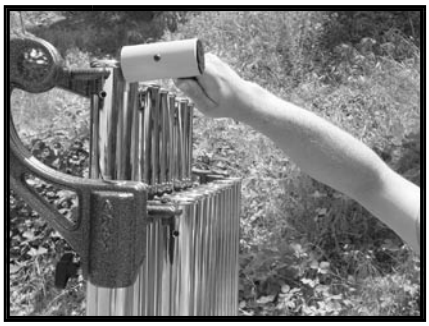
All chimes manufactured today have a **dampening mechanism** similar to that of a vibraphone. Chimes have a lot of "ring," so for concert use, the dampening mechanism is quite useful. For outdoor use however, it's not quite as important. From a distance, the listener doesn't hear all of the "ring" that the chime player hears. This is also true with the vibraphone. The ringing over of these tones can "fill out" your ensemble sound and help to project the sound of these essential metallic instruments.

Helpful hints for chimes

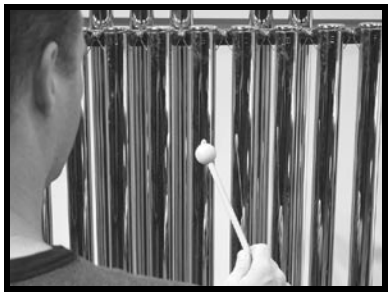
Most chimes are made with a sustain **lock button** which will enable the pedal to stay down in the "ring" position. This can be quite handy when players are "multi-tasking."



Using a **chime hammer** (rawhide or acrylic), **strike** the chimes at a flat angle! This is one of the most important techniques to remember when playing this instrument. When struck at a more indirect angle, there is a significant decrease in the sound quality and richness of tone.



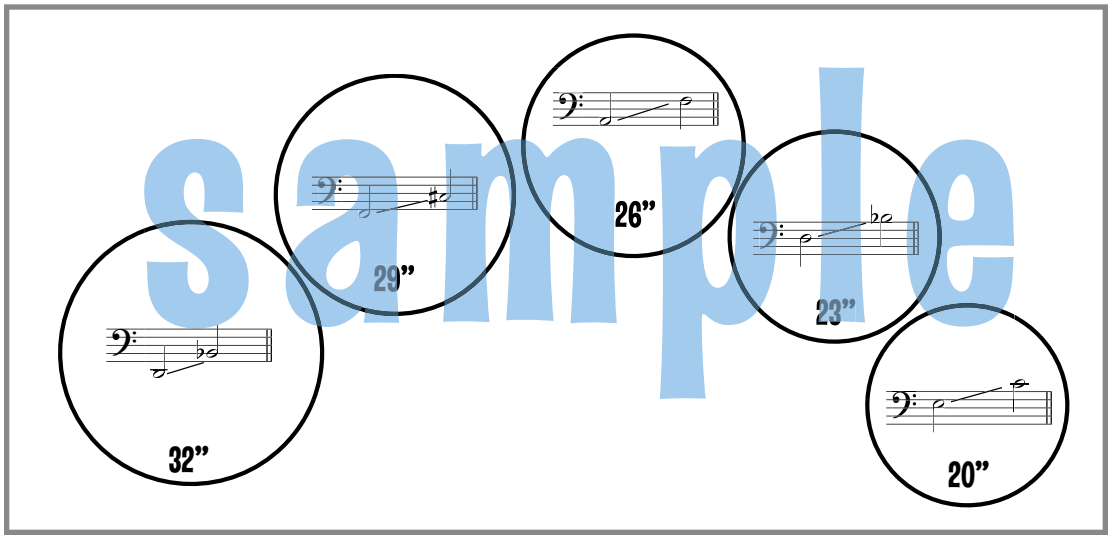
The playing surface of the chime hammer should be ***parallel*** to the chime tube. This may entail raising the arm higher to get the right angle for accidentals.



*Other interesting **effects** can be achieved on the chimes by striking the middle of the tubes with a hard xylophone mallet (left picture), or by scraping across (glissando) the tubes (right picture).*

TIMPANI

Timpani can be arranged in a variety of setups. Most setups contain two to five drums.



Timpani ranges, according to size (sounds as written).

As with the keyboard instruments, a separate section has been dedicated to developing timpani technique (see page 110).

When timpani are played well (and the parts are complimentary to the ensemble) they can be one of the most valuable assets to your overall pit sound. One main reason for this is that none of the other pitched acoustic instruments have the range depth of the timpani. If you are fortunate enough to have a 5-octave marimba, it will be able to match the lower range of the timpani, but not with the depth and power that the timpani can supply.

The timpanist has several **responsibilities** that are unique to their position. First, it is extremely important that the timpanist has a good understanding of relative pitch.