

Things To Think About in Percussion

THIS IS A LIST OF THINGS TO THINK ABOUT WHILE PRACTICING ANY PERCUSSION INSTRUMENT. USE A MIRROR TO CHECK THE FOLLOWING ITEMS.

1. **THUMBS:** The stick is held between your thumb and index finger. Your thumbnails should face each other when your hands are in the proper playing position. Remember to keep your hands relaxed. Don't try to hold the stick very tight this only creates tension which hurts your playing. Hands should be flat and parallel to the ground.
2. **JELLO:** Think that your arms are floating on waist-high jello. They should be relaxed, with minimum movement (not rigid or absolutely fixed). Don't allow your arms to get stiff or move up and down more than 1". As you play your elbow may move but never in the same direction as your wrist!

To get this feeling swing your arms back and forth, letting them slow at the top of the swing, then let them swing back down in a pendulum motion. After your arms are relaxed, allow them to float down to waist level from the top part of the swing.

3. **FLAP:** Your elbows should be away from the body in a relaxed, bent position, like a bird's wings. Again, don't lock your elbows.
4. **PIZZA:** On snare drum remember to play in the center of the head with the sticks in an even position on the drum head. (One stick should not be in front of the other). It should look like a 1/4 slice of pizza, with the big end of the slice facing you. The most common mistake to watch for is the sticks don't form an I position.
5. **THREE "V's":** You should be able to see three "V's" when you play. The first "V" is the Is formed by the index finger and thumb as you hold the stick. The second & "V's" are formed by the angle between your forearm and the butt of each snare stick as it comes from the back of your hand and the third V's is the angle of your elbow.
6. **BASKETBALL:** There is only one motion when playing percussion: DOWN. The stick should return to the up position with bounce. Watch to make sure the stick moves at the same speed as it drops and as it bounces back up. The stick should produce an even blur pattern. If you see the stick more solid on the bottom of the stroke, you are not allowing the stick to bounce off the head. If you see the stick more solid on the top of the stroke, you are lifting the stick up too fast. Remember the goal is to make an even stick blur!

Remember, always remain relaxed!

STRIKING THE DRUM

How we approach the drum pad, snare drum or bells determines the sound we get from the instrument. The stroke is the means of getting sound. Remember that the stroke begins at the wrist and does not use the arm. As you try to play these sticking patterns do not play them as fast as you can. You can't go out and run a 10 mile race if you can't run 1 mile. You must pace yourself to improve. This is critical as you develop speed and control. As you practice each of these watch the stick and hand positions. They both should move in a smooth rhythm. If they do not, tension will begin. Remember to lift the wrist and don't let it drop past neutral position.

- | | | | | |
|------|---------|---------|---------|---------|
| 1) | R R R R | R R R R | R R R R | R R R R |
| 2) | L L L L | L L L L | L L L L | L L L L |
| 3) | R R R R | R R R R | L L L L | L L L L |
| 4) | R R R R | L L L L | R R R R | L L L L |
| 5) | R R L L | R R L L | R R L L | R R L L |
| 6) | R R R L | R R R L | R R R L | R R R L |
| 7) | L L L R | L L L R | L L L R | L L L R |
| 8) | R L R R | L R L L | R L R R | L R L L |
| 9) | R L R L | R L R L | R L R L | R L R L |
| 10) | R L L L | L L R L | L L L L | R L L L |

Try to feel the "natural" bounce in each stroke!

COUNTDOWN:

Start with 8 strokes on the right hand, follow with 7 on the left, 6 on the right, 5 on the left all the way down to 1 in each hand. You should end on the right hand.

MORE PRACTICE IDEAS:

Bounce a basketball with each hand for 3 minutes. Make sure you don't use your arms to bounce the ball, just the wrists and hands. The arms should remain still. This is a great, and fun way, to build your endurance and technique. Make sure to practice your weaker hand twice as long as your dominant one.

KEYBOARD PRACTICE: Try all of these exercises on your bells on the note "C." You will have to feel the bounce even more. Again remember to stay relaxed.

Concert Percussion Guide:

1. You are expected to play the parts given to you. You are also responsible for being ready to play when the band is. Use warmup time to set up. If you are not playing, have something else to quietly.
2. **You must always have a pair of snare drum sticks with you daily.**
3. **You are expected to keep the percussion section clean at all times.** No food or drink in the room at any time. Symphonic and Concert bands especially!!!!!! Do not use the percussion cabinet as a garbage can.
4. **All cymbals, drums or stands need to be locked in the percussion cabinets once symphonic band and wind ensemble have finished.** Tambourines and triangles should be placed in their bags then put away in the cabinet. Make sure all triangle beaters are kept in the triangle cases.
5. **Any items taken from the Percussion Storage Room** (repair room or large practice room) **need to be returned to that same room when you are finished with them.** Please return them where you found them.
6. It is the **entire section's job** to clean up and put instruments and mallets away after band. This duty should not be placed on one or two persons.
7. Covers **must** be placed over all instruments.
8. **Each band has their own sticks and mallets.** Please keep them in good shape. Do not toss, or misuse these mallets in anyway. You are financially responsible for each and every item in the stick case and/or percussion cabinet.

MALLET CHOICE: As a percussionist you must make decisions on which mallets to use to match the music being performed by the winds. Always listen and read to make the choice. Here is a guide to assist you.

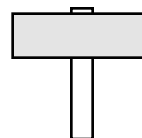
WOODEN XYLOPHONES: DO NOT use any hard plastic or metal mallets (Black, White or Brass Heads) unless you are instructed to do so by your director. Hard mallets are fine on the synthetic xylophones.

MARIMBAS: USE ONLY RUBBER or YARN COVERED MALLETS on the marimba. NEVER USE any hard plastic or brass mallets on these instrument.

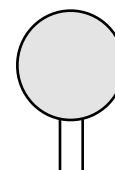
VIBRAPHONES: USE ONLY RUBBER, YARN or CORD WOUND MALLETS. NEVER USE any hard plastic or brass mallets on these instrument

TIMPANI MALLETS: There are a three basic different types of mallets. Each is constructed for a specific sound. Do not touch the felt with your hands as it destroys the felt

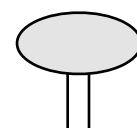
S
O
F
T
CARTWHEEL STICKS: are used for soft playing.
Roll and longer legato passages at piano, mezzo piano
or below. Sometimes called a legato mallet.



M
E
D
BALL MALLETS: Felt balls are used to cover many different cores.
(wood, rubber, hard felt). These mallets come in the most variety of hardness,
from general to staccato. General/Staccato mallets can be used for rolled or
quarter to 8th notes. Use staccato mallets when you need more to play faster notes.



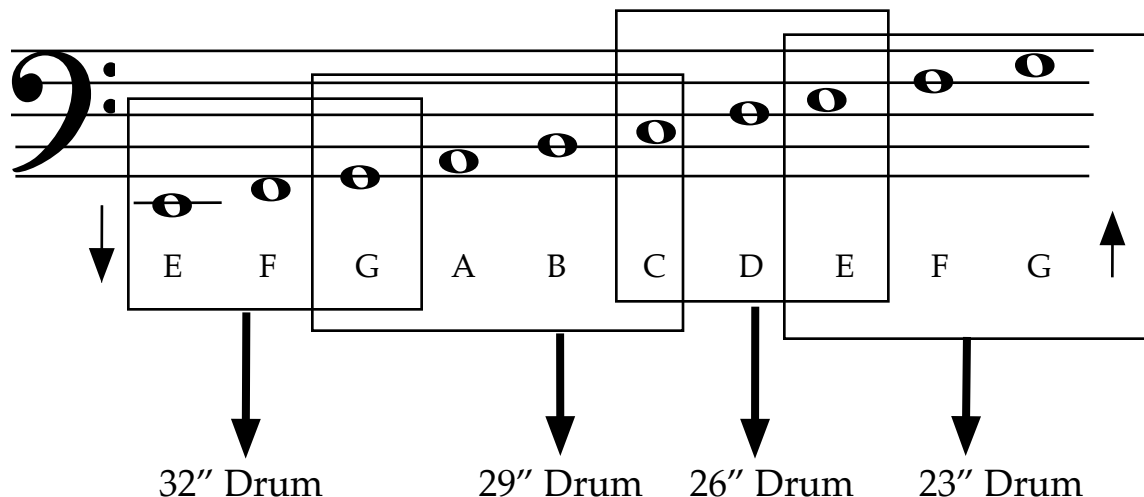
H
A
R
D
ULTRA STACCATO MALLETS: These are wood mallets with a very thin covering of felt. They
should be used for complex or fast rhythms.



WOODEN MALLETS: These are used for special effect and should only be used when called for.
The shape can vary. These are for very articulate playing.

TIMPANI

1. **TUNING:** Play the pitch on a mallet instrument or a pitch pipe. Tap the head with your finger once. Listen to the pitch as you slowly push the pedal down. Only strike to drum once. You will hear as the note matches.



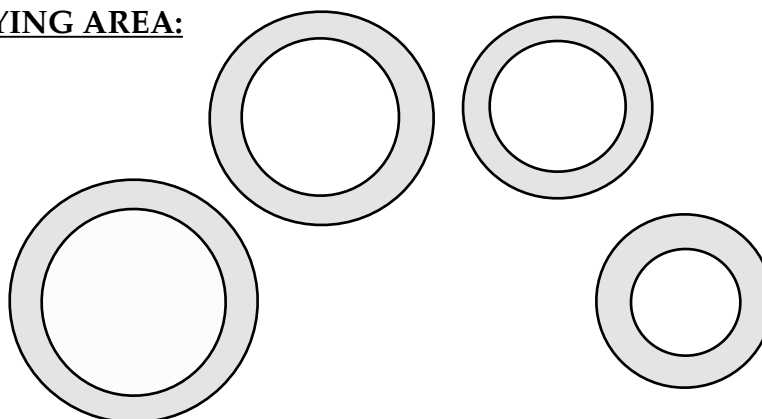
Please note that some pitches can be shared between drums. These boxes represent the best sounding pitch placements.

2. **STROKE & HAND POSITION:** I like to use the "FRENCH GRIP". This is like a snare drum grip but with the thumbs turned up. The thumbnails will face you. Keep the fingers loose so the mallet can bounce off of the head.



3. **THE STROKE:** The LIFT is the most important part of playing the timpani. Once the mallet strikes the head it bounces and lifts off the head. The longer the note the longer & higher the lift. The stroke & lift always starts with the WRIST!

4. **PLAYING AREA:**



The best playing area is between 1 1/2 to 2 inches from the rim of the drum. (area in gray) Try to play only between the lugs. never in front of them.

5. **THE ROLL:** A SINGLE STROKE ROLL is used on timpani. The bounce roll is never used. On lower the note, roll slower. As the pitch goes up, the roll should go faster. Always stay loose and let the stick do all the work. This keeps the sound open and smooth.

6. **FLAMS & RUFFS:** Flams should be played as they are on snare drum but slightly more open. Ruffs should be performed as single strokes RLR. Do not do a snare drum style bounced ruff.
7. **MUFFLING:** Muffling is the process of stopping the sound on timpani. To muffle a note brush your hand across the drum head. This allows for the the sound to gradually go away. If immediate silence is needed, touching your hand to the head will stop the sound. If you need to muffle 2 or more drum at once your entire arm(s) can be used.

When to muffle:
 1. Muffle when going to loud to soft
 2. Muffle at the end of a song.
 3. To match the articulation (note lengths and style) of other instruments.
 4. Muffle when a comma (,) or when the words "*secco* " or *dampen* is used.
8. **TRANSPORTING:** Never move the drum by pulling on the rims. Always lift from the support braces.

BASS DRUM When playing the bass drum two important techniques are critical:

1. The Stroke / Placement
2. Control of the Ring.

1. **THE PLAYING AREAS:** The drum is divided into thirds

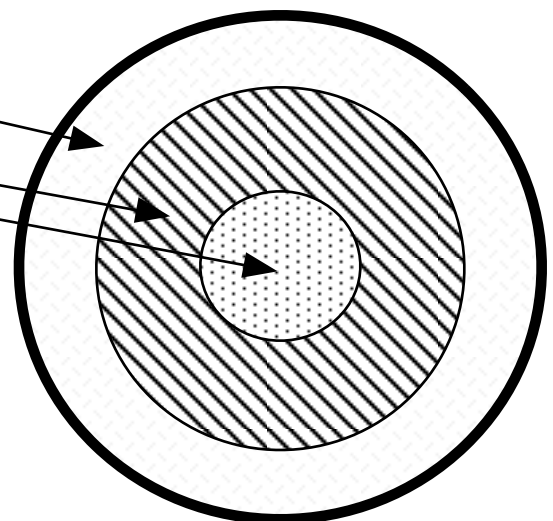
Soft rolls, and special effects

General Playing Area

Secco "short" Playing, "Cannon Shots" Effects

2. **THE STROKE:** When you strike the drum, the action should be just like when you play snare drum with the exception that the thumb nail should be turned up to face you. Remember that the rebound is critical to the sound of the drum.

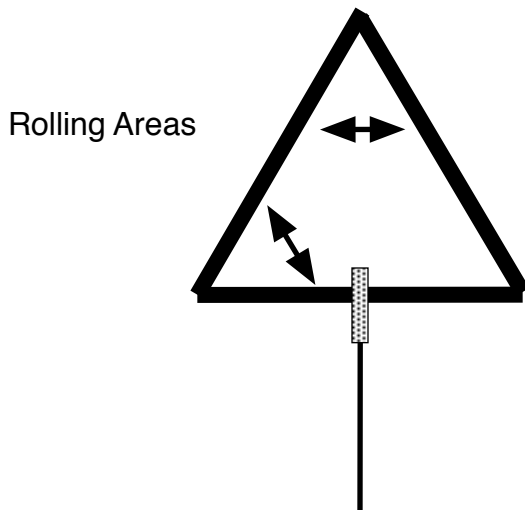
3. **MUFFLING & DAMPING:** Muffling means to partially stop the sound ringing from the head while Damping means to completely stop the ring. In most pieces (Marches, Fast Pieces) the drum should be muffled. Very infrequently should the drum be allowed to ring freely (mainly if a note is held by the band). Use the notes to help you decide what to do. You may need to muffle with opposite hand muffling technique. R L R L when the right hand is the mallet and the left is the hand.



OTHER INSTRUMENT:

1. **TRIANGLE:** Triangles come in different sizes and timbres. Try to pick the correct triangle to match the sound of the piece you are playing. When you play make sure (if possible) you hold the instrument up where it can be heard clearly. Do not play it from the stand.

Playing Area: Play parallel to the triangle, not perpendicular to the floor.



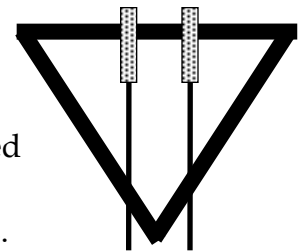
Special Effects:

At times there are "+" and "o" in the music. "+" means to muffle the tri. while striking it. "o" stands for open tone or let the ring.

Vibrato: Once you strike the triangle you can use your hand to fan the front of the triangle causing the sound to waver.

Fast Playing:

For fast playing the triangle should be clamped to a stand with 2 clamps and played with 2 beaters.



2. **SUSPENDED CYMBALS:**

NEVER STRIKE THE CYMBAL WITH A TIMPANI Mallet EVEN IF THE MUSIC TELLS YOU TO DO SO!!!!!! The composers don't have to buy \$30.00 timpani mallets!!!!!!

The Roll:

This is the area where you should roll. Use your fingers keep the sound quick and even.



ALWAYS MAKE SURE THE CYMBAL STAND HAS A PLASTIC SLEEVE and a FELT.

3. **CRASH CYMBALS:** (see Mike Burritt article)

The Grip: Grip the cymbal strap like you hold a snare stick. Allow the cymbal to rest against the knuckles.

The Crash: When you crash the cymbals only one hand will move with a wrist stroke down.

Muffling: Never leave the cymbals together to muffle them. ALWAYS muffle them against your body.

4. **TAMBOURINE**

Holding Position: should be a roughly a 45° Angle. This allows for the jingles to ring without ringing out of control. Keep the instrument at chest level.

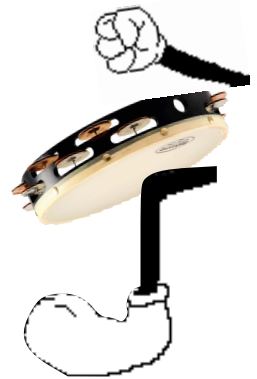
Playing Style:

1. *FF* to *mf*: Use knuckles
2. *pp* to *p*: Use finger tips
3. Fast Loud Playing: Turn the tambourine over and it between fist and the kneecap. Put the strong beats on the knee and the weaker beats on the fist.
4. Fast Soft Playing: Place the tambourine on your the leg and then use your fingers to play on the wooden rim of the tambourine

Rolls: Always start a roll with a tap. Slightly turn your hand back and forth like you are checking a door.
To end the roll always use a tap.

Thumb Roll: Lightly lick the pad of your thumb and wipe it off. Place slight pressure on the thumb and try to move it around the skin cover edge of the tambourine. The thumb just quickly bounce and slide around the surface. Thumb roll are used for softer aggressive rolls where the roll must be very consistent and fast.

Dynamics: If you need to crescendo on a roll, you can start with the roll down low and as you shake it faster, lift it up higher so a the loudest point it is even with your head.



LINEAR PLAYING EXERCISES

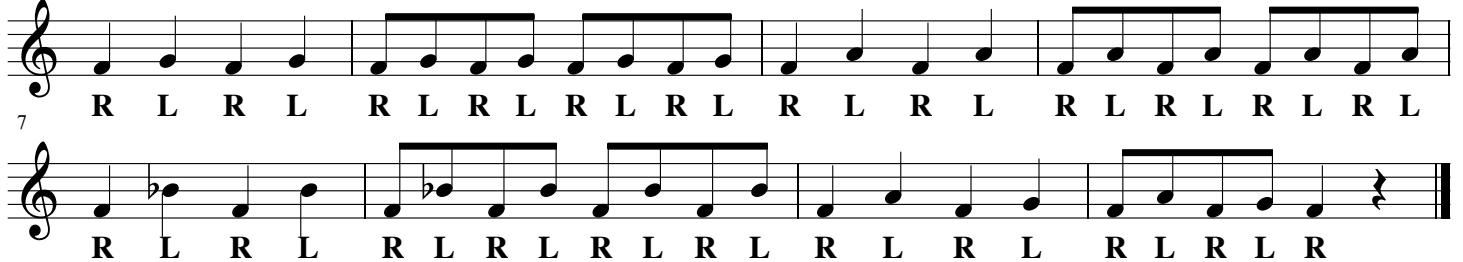
#1

Use the Windshield wiper move to go up the scale. Slide the arm up the keyboard



#2

Lift one mallet out of the way of the other



#3

Keep moving the arms up the keyboard as your body stays in front of where you are playing



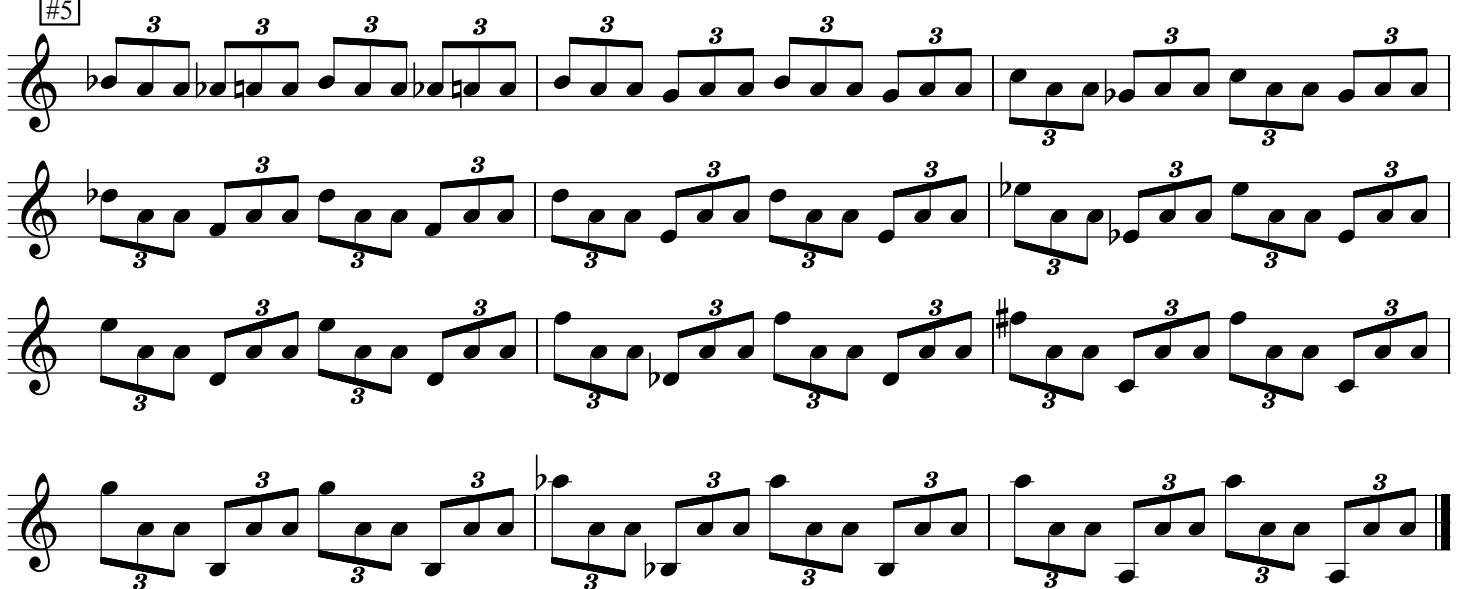
#4

Shift your weight as you ascend. You you descend play on the ends of the bars and keep your arm motion only going with the direction of the keyboard not up and down.



#5

The A is always the Rotation point. smoothly move away chromatically. Arms should swing like Windshield Wipers



"The first step in making music with cymbals is to remember that these are instruments with a very long and proud history. Consider this with every note you produce." - Sherry Rubins

Course

MICHAEL BURRITT, EASTMAN SCHOOL OF MUSIC

I often find that young students are somewhat intimidated and uncomfortable when it comes to their cymbal playing. Most incoming freshman have spent hours working on the "R and Rs" of percussion, snare drum, mallets, and timpani. But when it comes to cymbal crash technique, they have spent very little time, especially in relation to these other areas. There is usually some kind of concept in place that was learned from a clinic or a brief summer seminar that was unfortunately not followed up on and rehearsed. The students approach, physically and more important, aurally, is not nearly as developed as the other aspects of their percussion skills.

The first thing I try to do in the initial lesson is bring in some kind of commonality between crashing cymbals and other aspects of their training. For me, this starts with holding the straps. I suggest that they think of the straps much like sticks and use a grip similar to their snare drum technique. Of course the straps will give and react much differently than sticks; but to me, the overall concept of fulcrum in the two areas is quite similar. This helps with what I like to call the wrist drop. It places more of the weight of the cymbals in the same place as the fulcrum of your snare drum grip. Essentially between the thumb, index finger, and middle finger. The rest of the hand contributes to gripping the cymbal strap, but not to the extent that the fulcrum point does. This puts more of the control in your hand closer to the cymbal. This enables you to have better command of the angles in your crash and makes the wrist movement more intuitive.

Once the cymbals are in their hands I have the students practice the wrist/arm drop by crashing the cymbal(s) off the floor. I stress getting a good crash while doing this exercise. By dropping the cymbal to floor, the student is getting a sense of two significant concepts:

1. The idea that they can control the cymbal through the use of wrist and arm, not just arm.

2. The key to getting a good quality sound has a great deal to do with using the weight of the cymbal and not their own force or strength. The most pure and beautiful sounds made by these instruments are accomplished through a very natural and comfortable movement that allows the cymbal weight and size to create the sound. Of course this kind of technique takes time to develop, but it's the understanding of this approach that I try to impress upon the student in the initial lesson.

Then comes the actual bringing of the cymbals together to produce the crash. Early on I try to simplify their technique by having students move only one cymbal to create the crash. It should be the player's stronger, more coordinated hand. Let's go with "righties" for this lesson. The left hand cymbal will be stationary at about a 45 degree angle while the right hand cymbal, in this case the moving cymbal, will be at a slightly greater angle. Let's say 30 to 35 degree as an estimation.



Michael Burritt

I then have the student drop the right hand cymbal into the left at the opposing angles creating the traditional flam attack in the crash. It is also important at this point to demonstrate the role of your legs in the crash. I position my left leg slightly forward, supporting my stationary cymbal. I believe this helps with balance and saves in back strain.

I have the student begin by leaving the cymbals together at first (after the crash), creating a sizzle sound. This helps them get used to the weight of the instruments and to develop a consistent dropping angle. Eventually they pull the cymbals apart after the crash. (Initially pulling the right hand up and dropping the left hand down, or away, following the crash.) Students should repeat this many times until they get a consistent sound and become comfortable with both the weight and movement of the instruments. These crashes are at moderate mf dynamic levels. Working on bigger and softer crashes comes later.

I always recommend that my students practice cymbals for short periods of time following longer sessions on other instruments. I do not recommend cymbal practice at the beginning of sessions because it can be difficult to move to other instruments after an extended cymbal session.

Happy Crashing!



A2 — see crash cymbals.

A2 Roll — see two plate roll.

Air Lock — 1. an undesired effect caused when a pair of hand cymbals are incorrectly struck together, resulting in the cymbals locking together. 2. an undesired effect caused when air becomes stuck between a pair of HiHats causing them to lock together.

Ancient Cymbals — see crotales.

Antique Cymbals — see crotales.

Bass Drum/Cymbals Attached (BD/Cym.) — one player playing both bass drum and cymbals. One cymbal is attached (upside down) to the bass drum with a mounting bracket and the other cymbal is held in the player’s weak hand. The bass drum is played by the player’s strong hand.

Bell — the raised center of a cymbal. The size of the bell determines the amount of overtones that will emanate from the instrument. Large Bell — more overtones, small bell, fewer overtones.

Bow — the gradual curving section from the bell to the edge of a cymbal. The height of the bow (or profile) of the cymbal will often determine the range of overtones that will occur from the instrument. Higher bow – emphasis on mid and upper mid range overtones, lower bow – emphasis on lower and darker overtones.

Bowed Cymbal — a suspended cymbal (or crotale) played by drawing a bass bow across the edge. The sound produced is a varied array of harmonics.

Bring Up/Down — a direct line motion bringing any cymbal(s) from one spot in space to another. Usually done with great speed.

Charleston Cymbals — outdated term used to indicate HiHats.

Chick — the sound produced by HiHats when closed with the foot.

Chinese Cymbal — a cymbal with an edge that is flanged and turned upwards. Usually the bell is more square shape than a normal cymbal. Chinese cymbals produce a “pangy” and “funky” sound and are often times mounted upside down on a cymbal stand.

Choked — muffle the cymbal(s) with a hand, a second cymbal, or against the torso.

Choked T — see smak.

Clash Cymbals — see crash cymbals.

Crash Choke — a crash technique where two cymbals are brought to the mid-torso immediately after crashing “choking” the sound. Primarily used as a marching technique.

Crash Cymbal — one cymbal with a relatively short decay, used to accentuate musical phrases mounted on a cymbal stand. Primarily used within a drumset and not to be confused with Crash Cymbals— plural.

Crash Cymbals — a pair of cymbals, one in each hand, struck together. Primarily used in concert or marching percussion playing.

Crotale(s) — small thick discs with definite pitches. Mounted on a stand either as a single instrument or within a chromatic scale (see crotale bar). They are struck with a mallet or mounted with rope and then struck against one another.

Crotale Bar — chromatic mounting rack for one octave of crotales.

Cup — see bell.

Cup Grind — digging and rotating one cymbal into the bell of another with enough pressure to cause a grinding sound. If done correctly, many uncomfortable overtones can be produced.

Cymbal — a metal plate made from an alloy of copper and tin that usually has a raised bell in the center. Played individually or in pairs. Note: cymbals do not have to be round and do not have to have bells!

Cymbals attached to the bass drum — see bass drum/cymbals attached.

Cymbal Pads — the cushion on crash cymbals (usually made from leather or felt) around the leather straps to protect a players hands.

Cymbal Knot — the square knot (also called sailor’s knot) used to secure a leather strap to a hand cymbal. See page 9.

Cymbal Roll — a fast succession of single or double notes on a cymbal (usually at the edge) with sticks or mallets.

Cymbal Scank — taking the outer edge of a cymbal and striking the underside of the other cymbal in the bell area.

Cymbal Scrape — a scraping sound achieved in two ways: (1) scraping two cymbals together from the bell to the edge. Primarily used as a marching technique. (2) scraping one cymbal with a coin or metal object.

Cymbal Straps — handles that are tied with a special knot so a player can hold the cymbals for crashing together or to hang a suspended cymbal. Usually made from leather.

Cymbal Tongs — see metal castanets.

Cymbal Tree — an array of suspended cymbals, one on top of another and mounted on a special stand.

Dampen — muffle the cymbals.

Decay — the reduction in sound after a cymbal is struck.

Dome — see bell.

Dry — (1) muffle the cymbal(s). (2) overtones that are inhibited due to a lack of lathing or extensive hammering to limit the decay time and the amount of overtones.

Edge — the outer edge of a cymbal which usually responds immediately.

Finger Cymbals — a pair of small un-pitched cymbals mounted on elastic straps and struck together to produce a high pitched sound.

Flanged HiHats — specially designed HiHats with flanged edges that increase the contact surface and the “chic” sound when the top and bottom cymbals meet.

Flings — scraping the edge of one cymbal against the underside of another from the inside out in a downward motion. Primarily a marching technique.

Flip Up/Down — a motion bringing any cymbal(s) from one spot in space to another while allowing the momentum of the cymbals to rotate or flash them around the hand. Usually done with great speed.

the definitive cymbal Glossary

Fusion Crash — using the “HiHat crash” technique move the top cymbal out and bring it back applying pressure as the cymbals come back together, creating an air pocket sound. Primarily used as a marching technique.

Grinds — a marching technique where one cymbal is aggressively rubbed against another. This is done by “winding-up” the players right hand and letting the cymbal spin freely against the other.

Gooseneck — a suspended cymbal stand shaped in the form of a curved neck where the cymbal hangs from a hook.

Hammering — a finishing technique used when making cymbals. The type of hammering used has a great influence on how a cymbal will sound.

Hand Cymbals — see crash cymbals.

HiHat — a pair of cymbals mounted, one above the other, on a stand that is activated by the player’s foot. Also called “sock cymbals”, “Charleston cymbals”, “foot cymbals”, “low-boys”, “hi-boys”, “hi-socks” and “off-beat cymbals”.

Leather Straps — see cymbal straps.

Let Vibrate — let the cymbals ring.

LV — same as let vibrate.

Low Boy — the predecessor to the modern HiHat.

Metal Castanets — heavy finger cymbals mounted in pairs on metal handles. Ideal for an authentic sound in the Baccha–nale from Saint-Saens Samson and Delilah.

Overtones — the sonorities produced that are above the fundamental frequency.

Plates — slang for cymbals, derived from the Italian word “piatti”.

Plate Roll — a symmetrical motion in which two cymbals are rubbed against each other in a circular pattern to create a continuous sizzle sound.

Profile — degree of the curvature of a cymbal from the bell to the edge. See bow.

Prep — any motion done before any particular crash.

Ride Cymbal — a cymbal to execute rhythmic patterns. Primarily used in more popular music.

Rebound — any motion done after the initial impact of any particular crash.

Scratching — a cymbal effect created when the tip of one cymbal is moved up and down on the underside of another cymbal. This creates a sound similar to scratching a record on a turntable.

Secco — dampen the cymbal.

Sizzle Cymbal — a cymbal with metal rivets installed in predrilled holes. The cymbal produces a sizzling or buzzing type of sound as the cymbal continues to vibrate.

Sizzle Crash — a sustained sizzle sound is created when the “plates” lightly remain together after impact.

Sizzle Suck — see fusion crash.

Slam — forcefully crashing two cymbals together from a short distance. This creates a choked sound. Primarily a marching technique.

Slide — a marching technique that combines a crash, a sizzle, and a vacuum. After two cymbals are struck and held for a sizzle effect, the cymbals are pressed together to create a vacuum. This chokes the sound.

Sock Cymbals — HiHat cymbals.

Smak — similar to a tap choke. Two cymbals are placed two inches from their outer edges and struck. They are dampened against the forearms. Usually played in groups of two or four.

Special Effect Cymbals — instruments that produce innovative and unusual sound colors.

Splash Cymbal — small cymbals, usually 6”–12” in diameter, with a very short decay. Often dampened immediately after struck. Also, called “choke cymbals”.

Suspended Cymbal — one cymbal mounted on a suspended cymbal stand or suspended cymbal arm with a leather strap. This term is used primarily in concert percussion playing.

Sustain — the duration of sound after a cymbal or gong is struck.

Swell — an increase in sound after a cymbal or gong is struck.

Tap — striking the edge of the top cymbal on the edge of the bottom cymbal. Primarily a marching technique.

Tap Choke — after using the tap technique, the cymbals are brought to the chest to dampen sound.

Taper — degree to which the cymbal changes in thickness from the cup to the edge.

Tuned Cymbals — see crotales.

Two Plate Roll — striking and/or rubbing together two crash cymbals.

Twong — lifting one cymbal and striking the underside of another cymbal in the bell area. Sometimes referred to as a cymbal scank. Primarily a marching technique.

Vacuum — (1) starting with the opposite edges of two cymbals pressed together, a vacuum effect is created when the cymbals meet at dead center. Primarily a marching technique. (2) see air lock.

Vertical Crash — a symmetrical motioned crash which is played in front of the body in a vertical manner.

Zilchen — scrapping one cymbal against the inside edge of another.

Zils — finger cymbals, usually used to accompany belly dancers.

Zings — scraping the edge of one cymbal against the underside of another from the inside out in an upwards motion. Primarily a marching technique.

Zing Roll — see grinds.



Percussion Instrument Suggestions:

SNARE DRUMS:

Pearl Concert Series Snare Drum: Maple 14 x 6.5 \$399.00

SNARE DRUM STICKS

Innovative Percussion IP-LD Lalo Davila Hickory Snare Sticks \$9.00
Steve Weiss Glenn Steel Snare Sticks \$9.95

TRIANGLES:

Alan Able 6" (thin overtones) \$68.00
Grover 6" Super Overtone (slightly deeper, more overtone) \$67.95
Sabian 6" Hand Hammered (many overtones) \$74.95

TRIANGLE BEATERS:

Black Swamp: 3 Spectrum Triangle Beater Set with case \$72.00
Pearl Elite Concert Triangles \$19.95

TRIANGLE ACCESSORIES:

Steel Spring Clamp from any hardware store \$ 3.00
Easy Removal Cable Ties McMaster Carr \$5.00 for 500

TAMBOURINE:

Black Swamp TD-1 10" Double Row Chromium 25 Jingles \$159.00
Dry sounding tambourine.

Grover 10" T2/BC Double Row Tambourine Beryllium Copper \$181.95
More wet sounding. Calf Skin Head

Grover 10" T2/BC-X Double Row Tambourine Beryllium Copper \$181.95
Wet Sounding with Synthetic Head

CRASH CYMBALS:

General

HS: 18" or 19" Sabian HHX Synergy Medium \$638 - \$698.
18 or 19" Zildjian Z-Mac

JH 17" or 18" Sabian HHX Synergy Medium \$599 - \$638.
16" or 18" Sabian Z-Macs

Higher End:

French: Fast speaking, light sound, fast delay, Great for Marches
16" Sabian HH (Hand Hammered) \$540.00

Viennese: Medium Weight, good all around cymbals, full sounds, moderate decay
19 Sabian HH \$698.95

Germanic: Heaviest, dark sounds with powerful, musical response and long decay.
(I would not use these for HS)
20" Sabiann HH \$738.96

Percussion Instrument Suggestions:

SUSPENDED CYMBALS:

20"	Sabian AAX Suspended Cymbal	\$280.00
	Smooth, shimmering sound that is bright and impactful in all volume	
20"	Sabian HH Suspended	
	Warmer, Richer sounding than the AAX due to its Hand Hammered Construction.	
20"	Zildjian 20" Classic Orchestral Selection	\$319.00

SUSPENDED CYMBAL STANDS:

Traditional (Medium or Heavy Weight)	\$65-95
Goose Neck Stands	\$90.00

KEYBOARD MALLETS: Balter, Mallettech, Encore, Innovative Percussion

Yarn: Marimba, Vibes, Suspended Cymbal, Tom Toms
Rattan Handles: Good for 2 mallets flexible
Birch Handles: Good for 4 mallet work, not flexible

Cord: Vibes (Rattan)	
Balter 23R (Blue Cord: Medium)	\$31.95

Rubber: Vibes, Marimba, Xylophone (Rattan or Birch)
Any

Medium Plastic: Xylophone, Bells, Crotales (Rattan or Birch)	
Encore 102B Unwound Series 1 1/8 Poly Ball (Xylo)	\$18.50
Mallettech BB34 "Becker Blues	\$ 29.95

Hard Plastic: Xylophone, Bells, Crotales (Rattan or Birch)	
Encore 202R Symphonic Series 1 1/8 Poly Ball (Xylo/Bells)	\$26.50
Mallettech OR45R Orchestral Series Hard	\$26.95
Vic Firth M137 Hard Teflon	\$32.25
Innovative Percussion Ross IP903 Dark	

Brass / Aluminum: Bells Crotales (Rattan or Birch)	
Balter 109B (Brass)	\$ 16.95

Elementary Bell Kit Mallet Replacements	
Balter 10AR Hard Phenolic	\$23.95
Vic Firth M142 Orchestral Series Keyboard	\$22.50

Percussion Instrument Suggestions:

BASS DRUM: Vic Firth (Tom Gauger) Innovative Percussion, General:

Vic Firth Tom Gauger #3 Molto (oval Mallet)	\$ 37.95
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METHODS:

Fresh Approach to Snare Drum: Mark Wessels	\$16.95 (w/ book CD, DVD)
Fresh Approach to Mallet Percussion: Mark Wessels Includes Timpani Exercises	\$14.95 (w/CD)
Fresh Approach to the Drumset: Mark Wessels	\$22.45
Mallet Percussion for Young Beginners: Eyles "Big Note" Bell Book	\$12.55

REPAIR BOOKS:

Mallet Repair: Arthur Press	\$10.95
"Mallet Repair" is an in depth account of how to recover worn timpani or yarn mallets. Included are descriptions of materials needed, clear illustrations, and clear, simple instructions. A great resource for any percussionist!	

Band Director's Percussion Repair Manual	\$26.95
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This concise and well-organized manual by Ed Brown is a must for the serious music educator and percussionist. Written in an easy-to-use format, Band Director's Percussion Repair Manual is a one-stop sourcebook that answers most percussion repair questions. Subjects include percussion terminology; how to measure drums; repair procedures for drums, mallet instruments, etc.; setting up an inventory list; and a recommended percussion repair kit.

Percussionist's Dictionary: Adato and Judy	\$13.95
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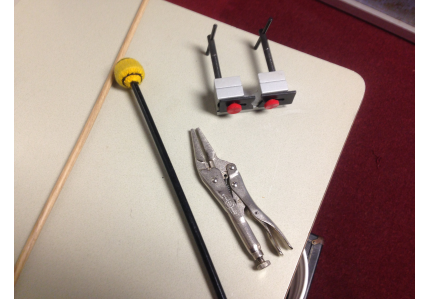
The Percussionist's Dictionary compiled and edited by Joseph Adato and George Judy contains translations, descriptions, and photographs of percussion instruments from around the world. Includes foreign terms in 26 languages.

REPAIRING A BROKEN MALLET SHAFT

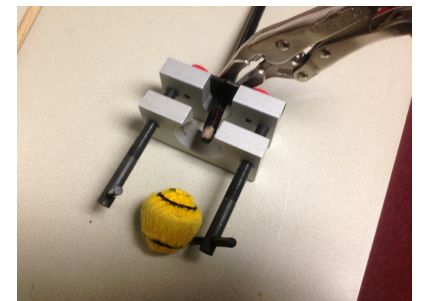
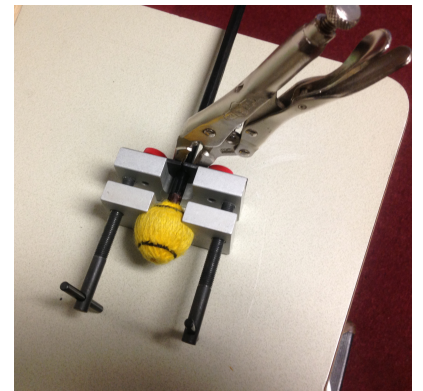
I've had some success gluing a broken mallet shaft using Gorilla Glue and clamping them. However in most cases this does not work as it is difficult to get the mallet perfectly fit back together. But with this method you can replace the shaft by easily.

NEEDS:

Needle Nose Vice Grips
Bobcat Mouthpiece Puller
5/16" x 36" Oak (or Hardwood) Dowel Rod
Hacksaw
File or Sandpaper
Glue



1. First put the head of the mallet in the mouthpiece puller's cup. Make sure the vice section of the mouthpiece puller are together. Place the the vice grips on the shaft of the mallet tightly against the back of the vice.
2. Alternate turning each T handle opening the space between the vice sides. If you notice the mallet shaft slipping in the vice grips, open them and tighten then reapply.
3. Continue twisting each T until the mallet comes off. In some cases mallet are also fastened with a small pin nail. The mouthpiece puller will be able to pull this out as well. If necessary you can use a 5/16" drill bit to clean out the mallet before moving to the next step.
4. Fit the mallet on the new Dowel Rod
5. If fit is good, reglue with Gorilla Glue or any epoxy.
6. Use the non-broken mallet as a guide. Measure and Cut to Length. Use a file or sandpaper to smooth and round the end of the mallet.



Focus on Performance: Marimba Clinic

Recovering Marimba Mallets

by Mario Gaetano

The serious percussion student must have at his disposal a large variety of sticks and mallets to accommodate the various instruments he/she is expected to play and the different musical styles, articulations, dynamics, and tone colors needed to be produced. The advancing student should have at least three pair of timpani mallets (soft, general, staccato), snare drum sticks, wire brushes, rubber and plastic xylophone/bell mallets, bass drum mallets, and three sets (six pair, to accommodate four-mallets playing) of yarn marimba/vibe mallets (soft, medium, hard). Needless to say, keeping well-equipped can be quite expensive, but after the initial investment is made, the mallets can be recovered after they wear out for practically

pennies. The textbook Mallet Repair by Arthur Press (published by Belwin Mills) is an excellent source to get one started. The book discusses in detail the recovering of timpani, marimba, and chime mallets, as well as the making of wire brushes.

This author utilizes a technique for recovering marimba mallets which results in a "mushroom-shaped" mallet head with an inner layer of yarn that is wound horizontally. This method has some advantages over mallets which are wound with all of the yarn running vertically:

1) the core is more dense resulting in more fundamental pitch, a deeper and richer tone, even in the higher register; 2) the mallets also

produce a deep, rich tone on the vibraphone; 3) the mallets tend to have more rebound off the bars; and 4) the mallets tend to wear longer. The process for this type of mallet recovery is outlined below. The equipment needed is minimal: one skein of white, two-ply 100% acrylic baby yarn (at approximately \$1.30 per skein, it will cover about twelve mallets!), a yarn needle, a pair of scissors, and either adhesive moleskin (1/16" thick) or surgical tubing.

Instructions:

1) Remove old yarn and observe the condition of the inner layer of moleskin or surgical tubing, if there is one. If it is in good shape, without holes or torn places, leave intact. If the inner layer is damaged, remove it and replace with a 1/2" strip of moleskin, being careful not to overlap. Thin surgical tubing also works well as an inner layer.

2) Holding your thumb on the yarn, wind the yarn horizontally over the moleskin or tubing, counting the revolutions as you go, until you reach a desired density (See Figure 1). The more dense the layer of yarn, the larger the mallet head will be and a softer, less articulate tone quality will result. The tone quality of the mallet also depends on the material the ball itself is constructed of. A wooden or plastic ball will produce a much brighter, more articulate mallet than a rubber ball. Remember the number of revolutions, as you will want to use the same number on each pair or set of mallets.

3) Holding the yarn with your thumb, wind the yarn vertically around the ball, pulling firmly. Each time you pass over the top of the ball, do so slightly off center, about 1/8". This technique will be used to form the "crown" of the mallet (see Figure 2). Count the number of revolutions you used to cover the ball to the desired thickness and use that number as an

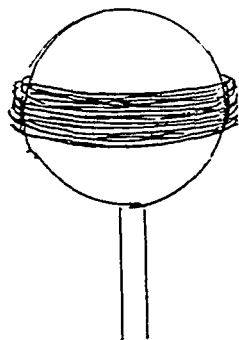


Figure 1

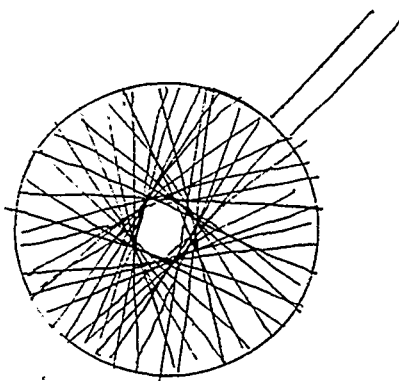


Figure 2

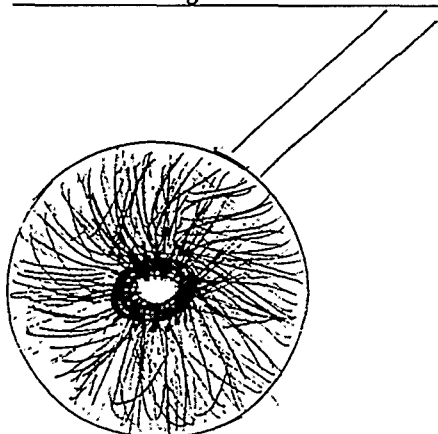


Figure 3

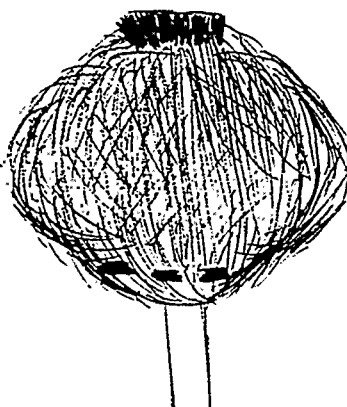


Figure 4

approximate guide for matching the other mallets in a pair or set. During this step you should periodically check the sound of the mallet by tapping it on a marimba bar to be certain you achieve the desired hardness. Be certain the yarn is wound evenly around the circumference of the ball. The tone quality of the mallet can also be altered at this stage, depending on how firmly the yarn is wound. A tighter wrap will result in a more articulate mallet than a looser wrap. After the desired hardness is achieved, cut the yarn and tie it around the base of the ball, at the handle.

4) Cut approximately a two-foot length of yarn and thread your needle, tying a small knot in one end. This will be used to sew the crown and the base. Sew a single row of stitches, side by side, around the circumference of the crown, starting inside and working outward (see Figure 3). Leave the knot

on the inside of the crown and snip it off later.

5) When the crown is finished, begin sewing the base of the mallet head where it meets the handle using the same strand of yarn, without cutting (see Figure 4).

The stitches at the base can run horizontally and can be more widely spaced. Note: should you run out of yarn, simply rethread the needle and "over stitch" where you left off. Make no knot! After the base is completed, simply bury the yarn in the mallet head and cut it off.

Creating upper and lower facings, often seen on commercial mallets, make the mallet more decorative, but are not really necessary for keeping the mallet intact. A well-sewn crown and base are all that are needed. Learning to recover

mallets will not only save you a great deal of money, but will also give you a sense of pride. You will be able to "custom-make" your mallets to your own personal sound, technique, and style of playing. Recovering mallets takes patience. It may take a few attempts before you are satisfied with your results. As in other musical endeavors, practice makes perfect.

Mario Gaetano is percussion professor at Western Carolina University.

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Percussion Instrument Maintenance Part II

By Mario A. Gaetano

THE SECOND PART of this article deals with the care and upkeep of the mallet-keyboard percussion instruments and cymbals. First, some general principles regarding all mallet-keyboard instruments:

- 1) The instruments should be used for the purpose they were intended. They are not trap tables, nor are they carrying carts. They may look rather sturdy, but the bars, posts, dampers, etc. can be damaged if certain things are placed on top of them, even if the instrument is covered.
- 2) The instruments should be played with the proper mallets. Never use anything harder than a medium-hard rubber mallet on a rosewood marimba or vibraphone. Avoid plastic-acrylic mallets on a rosewood xylophone as they may chip the bars. Mallets made from polyethylene and even rosewood are commercially available which can deliver a loud, biting tone quality, similar to plastic, but will not harm the instrument.
- 3) The instruments should always be covered when not in use.
- 4) The instruments should always be lifted over a threshold to avoid damage to the frame. They should never be wheeled over a sidewalk or pavement. Instead, they should be lifted by two or more people. The chime and vibraphone pedals should be placed in the "up" position when moving.
- 5) When traveling, the instruments should be dismantled and packed in cases. If cases are not available, wrap the individual components in heavy blankets: keyboards, resonators, rails, sides, frame, pedal, etc.
- 6) Avoid exposing rosewood instruments to extremes in temperature and/or humidity. Sudden changes can drastically affect the intonation and may even cause bars to crack. The ideal environment is 30-40% humidity and 70-75°F. Do not store

instruments in direct sunlight, nor in front of radiators or air conditioners. Do not take rosewood instruments outside.

- 7) Avoid touching rosewood with one's hands. The salt from the skin can damage the finish. Do not allow perspiration to stay on the instrument for the same reason.
- 8) It is highly recommended that instruments with synthetic bars be purchased for public school usage. They are less expensive and are not affected by temperature, humidity, etc. There are manufacturers that produce synthetic-bar instruments with exceptional tone quality. Marching percussion units should always use instruments with synthetic bars.

Now for some specifics regarding the care and maintenance of keyboard percussion instruments:

Orchestra bells: Clean with a metal polish. Replace worn felt or suspension cord. Be certain all of the screws which mount the bars to the frame are tight and replace any that are bent or missing.

Vibraphone:

- 1) Clean the bars with window cleaner or diluted ammonia.
- 2) Oil the motor with machine oil.
- 3) Check the integrity of the electric cord. If it is frayed or damaged, it should be repaired or replaced. The cord should be unplugged and properly stored when not in use.
- 4) Tighten all the screws in the frame and pedal. They have a tendency to work loose over time.
- 5) Lubricate the rotating fan mechanism and the moving parts of the pedal with WD-40 or petroleum jelly.
- 6) Inspect the belt. If it is hard or cracked, replace it with a new one from the manufacturer.
- 7) Inspect the damper bar. It must be straight. If the felt is packed down, it can be fluffed up with a needle. Also, inspect the cushion under the pedal. If it has worked loose, it should be reglued. If it is missing, a

small piece of sponge can be cut and glued to the base of the pedal.

- 8) Inspect the posts and insulators. If the posts are bent, they can be straightened easily with a pair of pliers. If the insulators are worn or cracked, they should be replaced. New insulators can be purchased from the manufacturer. Surgical tubing or an automobile fuel line hose can be cut to fit each insulator. This is tedious, however.
- 9) Inspect the suspension cords. If they are worn, replace them with cords from the manufacturer. Venetian blind cord or any nylon cord of the same diameter can be purchased from your local hardware store for this purpose. Be certain the cords are tight.
- 10) Vacuum the resonators with a long nozzle vacuum hose.
- 11) If the keyboard is damaged, it can be refinished (electroplated) by a professional. The bars can also be professionally tuned.

Chimes:

- 1) Lubricate the pedal and damper mechanism.
- 2) Inspect the felt damper. Replace it if it is damaged.
- 3) The suspension cords need to be tight so that each tube is securely suspended. The tubes should all hang in a straight line.
- 4) The tubes can be polished with chrome polish. Do not allow the tubes to rust.

Marimbas/Xylophones:

- 1) Dust the resonators and frame with a damp cloth. Remove the bars and vacuum out the resonators with a long nozzle vacuum hose.
- 2) Rosewood bars can be polished with a furniture polish that contains little or no wax. Synthetic bars can be cleaned with soap and water.
- 3) Cracked bars can be repaired or replaced by a professional. The instrument can also be tuned and refinished by a professional if needed.
- 4) Inspect the posts, insulators and sus-

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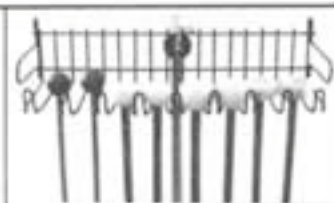
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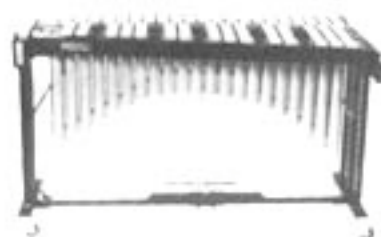
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Percussion Instrument Maintenance Part II

pension cords. Replace as needed.

- 5) Most marimbas have adjustable resonator caps. The resonators can be tuned to the pitch of the bar for optimum resonance. Blowing across a resonator, much like one blows across a soda bottle, produces a pitch. Check this pitch against that of the bar. If the resonator is flat in comparison to the bar, then the resonator needs to be made shorter by moving the cap inward. Conversely, if the resonator is sharp, the cap needs to come outward. Moving the resonator caps can be accomplished with a long wooden dowel and rubber hammer. Some manufacturers are now supplying a screw mechanism on the lowest resonators for individual tuning. This is tedious work, nonetheless, the results are very subtle. It is recommended that this type of resona-

tor tuning be left to the discriminating professional.

- 6) The frames of most marimbas have two resonator positions—one high and one low. In warmer temperatures use the upper position and in colder temperatures use the lower position. This is a more general and easy approach to matching the pitch of the resonators with that of the bars.

Cymbals:

- 1) Cleaning and polishing cymbals is entirely optional. Some professionals feel the tone of cymbals becomes darker and richer if they are not cleaned. Others advocate cleaning to produce more ring and a brighter tone. Marching cymbals need to be polished for their enhanced visual effect. Should you decide to clean your cymbals, it is important to use a commercial cymbal cleaner. Avoid using abrasive cleaners such as

chrome polish and brass cleaners which can wear down the tone grooves. Use a number of clean towels and rub the polish along the grooves of the cymbal. Be particularly careful to remove all of the cleaner. Any residue which remains on the cymbal will impede its tone. Rinse the cymbal with water and polish the cymbal with another clean towel.

- 2) Cymbals should be transported in a cymbal bag or case. They should be played in a proper manner. Avoid using plastic or brass mallets on a suspended cymbal. Avoid dropping cymbals even when in a bag or case.
- 3) Cracked cymbals can be repaired by drilling a hole at the end of the crack and then filing the edges to prevent a vibration. A V-shaped wedge can also be cut out of the cymbal. Cymbals which have been

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cracked are structurally weaker instruments and should be handled/played very carefully. The tone quality is also diminished.

- 4) Inspect the cymbal straps. If they are worn they should be replaced with the appropriate leather straps. Use a square knot for tying the straps. Avoid using any type of wooden handle on a cymbal. **PN**

Mario Gaetano is currently an Associate Professor of Music at Western Carolina University, Cullowhee, North Carolina where he teaches applied percussion, percussion methods, percussion ensemble and jazz ensemble. He is also principal percussionist with the Asheville Symphony Orchestra and an active recitalist throughout the region. He has numerous published compositions and arrangements for percussion instruments to his credit.



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The Acoustics of Resonators

by Ron Samuels

The acoustic characteristics of marimbas must be looked at in terms of how the instrument sounds in relation to the room in which it is being played. Once resonators are properly tuned, they should never need retuning (barring any physical changes in the plug depth.)

At Marimba One, we have defined specific variables that allow us to tune both resonators and bars to a high degree of accuracy. We tune both the bars and resonators at a temperature of 70 degrees, with the resonators located one inch below the bars. This means that at 70 degrees, the resonators are in perfect tune with the bars. When the temperature rises above 70 degrees, the resonators go sharp (as a result of the increase in the speed of sound), and when the temperature drops below 70 degrees, the resonators go flat. To keep the resonators in tune in warm weather where they will go sharp, one must either move the resonators closer than one inch to the bars to make them go flat, or make the resonant length of each individual resonator longer. The opposite is true for cooler temperatures.

We have developed a system that accurately and easily compensates for differences in temperature. Each resonator bank has two rosewood knobs at the bass end of the instrument. In temperatures warmer than 70 degrees, simply turn the knobs to raise each bank, and in cooler temperatures, turn the knobs to lower each bank. Since each resonator bank pivots at the treble end (where the resonant length is so short that it is relatively unaffected by temperature changes) the effect is that the lowest bass resonator is adjusted the most, and the next to the lowest bass resonator is adjusted just a bit less than the lowest one, and so on.

If one was to use individually tunable resonators, each tube would have to be individually adjusted when a resonant marimba was needed in an

adverse temperature. This is time consuming, and also quite difficult when considered in the context of my next discussion, and that is room acoustics.

I am sure that most mallet players have experienced marimbas that sound excellent in certain rooms or halls, only to find that in different rooms and halls, some notes sound unresonant, cut off, boomy, or otherwise unbalanced. You can even walk around a marimba in certain situations, and discover that some bars sound good in one listening position, and sound poor in other listening positions.

The best room acoustics evenly enhance all ranges of the harmonic spectrum. But many rooms cancel certain frequencies, and enhance other frequencies.

If you were to adjust a moveable resonator plug for a note that was being canceled and therefore sounding unresonant or dead as a result of a room acoustics problem, the result would be the bar's frequency remaining at the problem room frequency, with the resonator now being out of phase (out of tune) with the bar. This will not improve the situation. The best way to deal with a room acoustics problem is to move the marimba to various other practical locations in the room, and find the area that is most even in sound balance.

For best resonance, the resonators must remain in phase with the bars. On all Marimba One marimbas, this is easily done to a high degree of precision with our tuning knobs. Extensive testing in our factory, utilizing methods exclusive to Marimba One, is done on each resonator as an individual component of the marimba, and on the resonators as a whole. This assures the player a perfectly tuned set of resonators in a wide range of temperatures.

At Marimba One, we invite you to call us and discuss any of these issues. We believe we have the easiest and most accurate resonator tuning system available, and that we make the highest quality marimbas worldwide.

Consider the possibility of owning a Marimba One.

RON SAMUELS

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REPLACING AND CLEARING A TIMPANI HEAD

by Mark Wessels

In order to reach your full potential on playing the timpani, the instrument must be in good working condition, with heads that are in tune. This article will briefly describe the process for changing a timpani head and tuning (clearing) it so that it produces a pure characteristic sound.

WHEN SHOULD I REPLACE THE TIMPANI HEADS?

In a normal school environment, a timpani head that is well maintained may last for 4 or more years before needing to be replaced. However, if the heads accumulate dust and grime from outside use, or are not stored properly (with timpani covers), heads may need to be replaced on a yearly basis. Dents, scratches and other damage to the heads will definitely affect the drum's ability to sustain a pure tone, in which case they will need to be replaced as soon as possible.

WHAT SIZE TIMPANI HEADS SHOULD I ORDER?

Don't make the mistake of just ordering a standard set of timpani heads without first checking to see which type of timpani you own. Although most claim to be standard sizes (32", 29", 26", 23"), there are many cases where this isn't the size of head you'll need.

Begin by measuring the size of the bowl from one side to the opposite. In some cases (with especially very old models or with Dresden type timpani), the bowl will actually be smaller than the stated size. Next, check to see if the collar is "standard" size (next to the shell, as a drum rim) or "extended" (where there is 2" of head that extends beyond the bowl). If it is standard, order a head the size of your bowl measurement – if it's extended, add 2" to the bowl size (therefore, a 32" extended collar timpani will require a 34" timpani head).

When in doubt, remove the heads that are currently on the drum and measure them, or contact the instrument manufacturer of the drums with the model number to obtain the correct head size.

TAKING OFF THE OLD HEAD

IMPORTANT! You must keep your foot on the pedal in the lowest position as you begin to unscrew the tension rods (a student with nothing better to do would come in handy here). The spring on the pedal will cause it to jump to the highest position as you loosen the tension on the head and possibly cause damage.

It's best to unscrew the tension rods in the same manner that you do when putting a new head on the drum – one full turn on each rod, in opposites. Fully loosening one rod at a time places stress on the collar and could cause it to warp (it's not likely, but why take the chance?). After all the tension rods are detached from the receivers, you can slowly allow the pedal to return to the highest position and take your foot off. Remove the collar and old head.

CLEANING AND GENERAL MAINTENANCE

This is the perfect time to perform general maintenance to ensure that the instrument is in proper working condition! Even if you're not replacing the heads, most of these suggestions should be performed on a yearly basis.

Check the counter hoop to see if it is flat and round. A bent or warped counter hoop is the number one cause for timpani not sounding true, no matter how much effort is put into tuning.

Clean the instrument thoroughly inside and out with a damp cloth (yes, even the dust and spider webs on the base that have accumulated for years and years)! Tension rods and receivers should be wiped free of dust, debris and accumulated grease. Use a small bowl of water mixed with dishwashing liquid and Qtip where necessary.

Dents in the bowl can be removed with a rubber hammer, though if the bowl integrity has been compromised, it'll only be a cosmetic fix. Use small strokes around the edge of the dent and work towards the center.

Clean the bearing edge (lip) of the bowl. If you have older drums that have years of accumulated grease, you can *lightly polish* the bearing edge with #0000 steel wool or fine sandpaper using small circular strokes (don't sand or scrape horizontally). In most cases, simply wiping with a slightly damp cloth is sufficient. You may wish to apply a dry teflon spray which will lubricate the bearing edge (eliminating the annoying "creaking" sound when changing pitches). Just a light coating is necessary - don't over spray! Allow to fully dry before putting the new head on. Cork grease is a somewhat acceptable substitute if applied in a very, very light coating (a thick layer will cause the head to lose its resonance).

MOUNTING THE HEAD

Put the new head in the counter hoop and place both on the bowl. Check that the head makes contact fully inside the hoop and that there are no wrinkles or waves in the head (indicating a possible warped hoop or head). You may wish to line up the logo, if it exists, at this time (across from the pedal) - or the "spine" (as in the case of Remo heads) across the middle of the head (left to right). Apply a light lubrication to the bottom of each tension rod with cork grease, then thread it into its receiver until the top of the rod makes contact with the counter hoop. *At this point, check that the head and collar are centered on the bowl with an even amount of space around the rim (very important).*

Depress the pedal to the lowest position (hopefully, your student helper didn't leave...) and thread the rods until each is "finger tight" with the counter hoop. Don't over tighten - just get each one with the same degree of light tension all the way around the drum. At this point, the head should be properly seated on the bowl with no wrinkles or waves.

With your timpani tuning key (not pliers or crescent wrench), give each rod one half turn in a crisscross pattern (5 o'clock, 11 o'clock, 7 o'clock, 2 o'clock, etc), moving around the drum fully until there is a recognizable pitch. Press the pedal to the mid-point and play a soft stroke in the proper beating area (use a hard mallet for easiest pitch recognition). Listen for a pure tone and sustain. If the sustain is uneven (the pitch has

waves in it) or does not have a decent resonance (length of sustain), it may be necessary to once again check the evenness of rod tension around the drum and adjust accordingly. Measuring the rods or using a tension measuring device such as a "DrumDial" might help, but these methods don't work 100% of the time.

At this point, if you can't get the drum to sound a decent sustainable pitch, it's best to start over rather than kill yourself trying to fix the problem. If a warped head or rim (or bowl) is causing the problem then you can do your best, but it'll never sound great.

Lower the pedal to the bottom position and continue to tune the drum up until it has reached the lowest note in the pitch range (** this is what I prefer. Others prefer to raise the pedal to the highest position and tune up until the drum has reached it's highest note in the drum's pitch range*).

GENERAL PITCH RANGES

(These are my personal preferences for most common drums. Refer to your instrument's manufacturer for specific ranges):

32" – D to A

29" – F to C

26" – A to E

23" – D to A

FINE TUNING, OR "CLEARING THE HEAD"

To get the best possible sound from your timpani, you must spend a good amount of time getting the head to sustain the same pitch at each tension rod. This is a difficult procedure that requires a great ear, concentration and quiet environment! It might be helpful to place a small mute in the center of the drum and to tune in the mid to upper range of the instrument. *(And if you have the ability to put the timpani on a platform or chairs to bring the playing area up to ear level, it can save you from a backache)!*

Start by striking the drum softly in the proper area with your ear close to the drum head (play at a mid point between two rods, not directly on top of a rod). Listen carefully to the fundamental pitch (not the overtones) and hum the pitch to yourself. Next, strike the drum at a forte level and listen to the sustaining pitch. If the loud stroke sounds flat (lower) relative to the soft strokes, one or more of the tension rods *directly across from your beating area* is flat. If the loud stroke sounds sharp (higher) than the soft strokes, it's the opposite. If this is the case, you'll need to find the offending tension rod (ACROSS FROM THE BEATING AREA) and make the adjustment with a quarter turn.

Strike the drum softly 2-3 times, listening for the fundamental pitch – then forte. If the forte stroke sounds the same pitch, then this area of the head is clear. Move over to the next "channel" and compare to the first. Repeat the process until the drum is clear and sustains a true pitch from soft strokes to loud.

Try not to spend more than 10 minutes fine tuning any timpani without a significant break. Ears are easily fatigued and after a point, you'll start second guessing yourself and possibly do more harm than good.

PEDAL ADJUSTMENT

Generally, if the drum is in the correct pitch range, the pedal should work throughout the full range of the instrument – but occasionally you'll need to adjust the tension on the pedal (*these instruction details standard Ludwig timpani models, which are common in school music programs and notorious for being out of adjustment. If you have other instruments, consult the manufacturer for specific instructions for pedal adjustment*).

Start with the pedal fully depressed into the highest position and remove your foot. If the pedal moves back (down), apply more spring tension by dialing the tension knob clockwise (checking every couple of turns until the pedal remains in the top position). If the pedal remains steady in the upper position, but won't stay in the lowest position, the spring is too tight. Return to the upper range position and gradually DECREASE the spring tension by dialing the knob counter clockwise.

It's important here to note that there is a finite amount of thread space on the rod which secures the pedal spring. Over-dialing the knob can damage your spring (if too much tension is applied), or separate the rod from the pedal altogether. *TURN THE KNOB IN SMALL INCREMENTS UNTIL THE DESIRED TENSION IS ACHIEVED!* You'll definitely know if you've turned it too much... that loud gunshot you'll hear means that the drum needs to go to the shop to get fixed.

In many cases, you'll have to adjust the pedal where the spring tension works in “most” of the pitch range. At this point, you can adjust the pressure pads using a drum key. This is the mechanism under the base of the timpani that squeezes two small “brake pads” against the pedal rod – which is accessed through the small hole in the side of the base under the pedal. Apply just enough tension on these pads to allow the pedal to retain it's position through the full range of the instrument – but not so much that the pedal doesn't move freely.

If this adjustment mechanism doesn't secure the pedal, carefully turn the drum on its side to inspect it. 9 times out of 10, one (or both) of the brake pads are missing! You should replace them by ordering a new part from the manufacturer. In a pinch, you can find a rubber-like substitute at a hardware store and cut it to size.

FINAL RECOMMENDATIONS

To get the best possible sound from your timpani, it's necessary to fine tune your drums frequently. I've never found tuning gauges or devices to be reliable substitutes for a good ear – and the only way to develop the ear is by frequent practice!

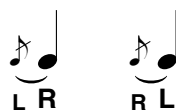
Don't simply accept bad sounding, out-of-tune drums which cannot obtain a true pitch. Only if you properly maintain your instruments and tune them frequently can you (or your student) be successful at becoming a true musician on the timpani!

ALL RUDIMENTS SHOULD BE PRACTICED: OPEN (SLOW) TO CLOSE (FAST) TO OPEN (SLOW) AND/OR AT AN EVEN MODERATE MARCH TEMPO.

* These rudiments are also included in the original Standard 26 American Drum Rudiments.
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III. FLAM RUDIMENTS

20. FLAM *



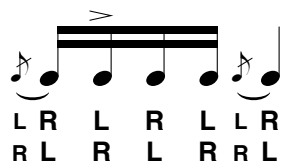
21. FLAM ACCENT *



22. FLAM TAP *



23. FLAMACUE *



24. FLAM PARADIDDLE *



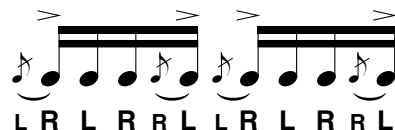
25. SINGLE FLAMMED MILL



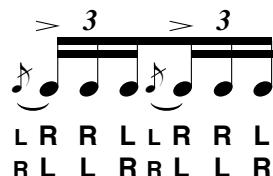
26. FLAM PARADIDDLE-DIDDLE *



27. PATAFLAFLA



28. SWISS ARMY TRIPLET



29. INVERTED FLAM TAP



30. FLAM DRAG



IV. DRAG RUDIMENTS

31. DRAG *



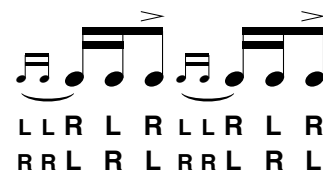
32. SINGLE DRAG TAP *



33. DOUBLE DRAG TAP *



34. LESSON 25 *



35. SINGLE DRAGADIDDLE



36. DRAG PARADIDDLE #1 *



37. DRAG PARADIDDLE #2 *



38. SINGLE RATAMACUE *



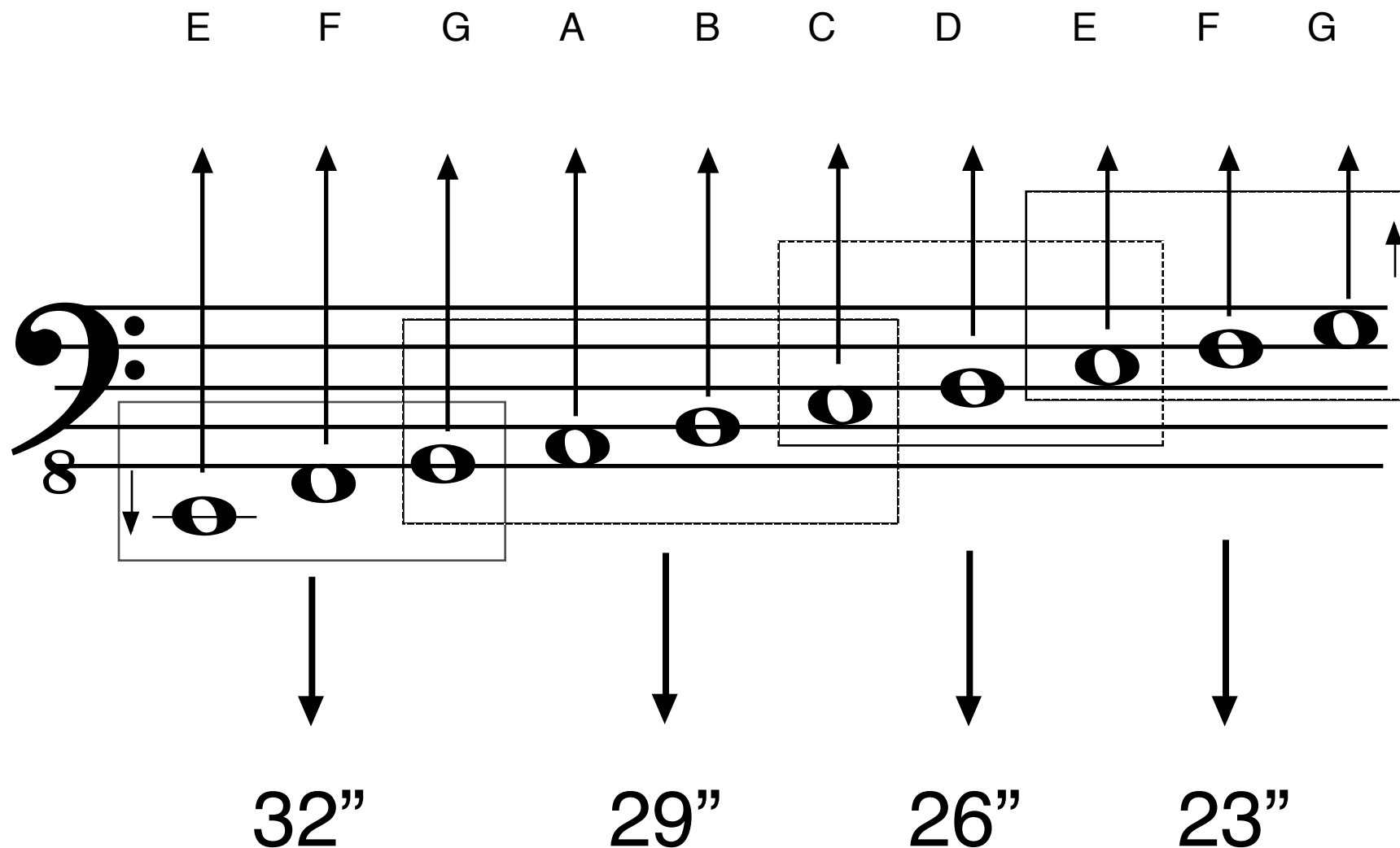
39. DOUBLE RATAMACUE *



40. TRIPLE RATAMACUE *



TIMPANI NOTES & RANGES: (best ranges)



Name/Group:

Date/Period:

Percussion Section Assignment Chart

Original Design by Bruce Pearson

Edited & Adapted by M. Max McKee
Director, The American Band College

Player Name or Part #

*Title of Composition
Composer/Arranger*

AC	Antique Cymbals	CA	Castanets	DS	Drumset (or TS)	IP	Iron Plate	RT	Roto-Toms	SY	Synthesizer	TW	Train Whistle
AF	Afuche (or CB)	CAB	Cabasa (or AF)	FC	Finger Cymbals	MA	Maracas	SA	Sandpaper Blocks	TA	Tambourine	TY	Typewriter
AG	Agogo	CB	Cowbell	FD	Field Drum	MB	Marimba	SB	Sleigh Bells	TAM	TamTam	VI	Vibes
AN	Anvil	CC	Crash Cymbals	FT	Floor Tom	MT	Mark Tree	SC	Susp Cymbal	TB	Temple Blocks	VS	Vibraslap
BD	Bass Drum	CE	Celeste	FX	Flextone	NC	Nightingale Call	SD	Snare Drum	TD	Tenor Drum	WB	Woodblock
BE	Bells (Glock)	CG	Chinese Gong	GC	Glass Chimes	PG	Pop Gun	SH	Shaker	TH	Taxi (Car) Horn	WC	Wind Chimes
BH	Bicycle Horn	CH	Chimes	GD	Gourd	PI	Piano	SHB	Ship's Bell	TI	Timpani	WH	Whip (or SS)
BO	Bongos	CL	Claves	GO	Gong (Tam Tam)	PS	Piccolo Snare	SI	Siren	TM	Timbales	XY	Xylophone
BR	Brake Drum	CO	Congas	GU	Guero	PW	Police Whistle	SP	Steel Pipe	TR	Triangle	—	—
BT	Bell Tree	CR	Crotales	HD	Hand Drum	RA	Ratchet	SS	Slapstick (or WH)	TS	Trapset (or DS)	—	—
BW	Bird Whistle	DC	Duck Call	HH	Hi Hat	RC	Ride Cymbal	SW	Slide Whistle	TT	Tom Toms		

Special Notes: