Tuning Schemes for the Modern Percussion Ensemble

By Michael McIntosh

In the last 20 years, there has been a renaissance in the role played by the symphonic and marching percussion section. As today’s modern composers ask for more and more unique sounds, it is more important than ever to have great-sounding equipment at all times. The following are tips and suggested pitches to cover all your needs in the concert hall, the marching band field, and indoor venue.

CONCERT SNARES:

A great-sounding concert snare is a combination of three sub-components:

- Properly tuned top (batter) head
- Properly tuned bottom (snare side) head
- Properly tuned individual snares and strainer

To properly tune the batter head, start by seating the head evenly on the bearing edge of the shell. Insert the lugs through the top rim into the lug casing making sure each lug is finger-tight (dip the tip of the lugs into white lithium grease to ensure smooth turning and longevity of equipment). Once the lugs have been finger-tightened, use a drum key and crank each lug a half-turn, utilizing the tuning pattern shown to the right.

The process is an arduous one, but will ensure an evenly tightened membrane. Take the batter up in pitch to a C or D and stop. Place your first two fingers in the center of the head and press down firmly for a couple seconds, then release. This will slightly stretch the head allowing the seating process to begin. After 10-15 seconds of intermittent pressure, continue the tuning process, raising the batter head pitch to a G (or desired pitch.) I have found that batter heads pitched to G allow characteristic resonance of the shell while allowing for ppp articulation and an overall great snare sound. Continue to double-check the head near each lug to ensure the head is properly “seated” (when each lug zone is in tune with itself, the head is said to be in tune or seated). For the top head, I prefer the Evans Strata 700 (7.5mm) for its warmth and articulation. The Evans Genera Concert Snare (Snare 7.5mm) is also a competent choice known for its sensitive snare response. In both, the 2mm overtone ring can be utilized to increase articulation.
To properly tune the bottom (snare side) head, set the head on the bottom bearing edge. Insert the lugs through the top rim into the lug casing, making sure each lug is finger-tight (dip the tip of the lugs into white lithium grease to ensure smooth turning and longevity.) Once the lugs have been finger-tightened, use a drum key and continue the tuning process stated above. The bottom head can be tuned one of two ways: high or low. A high-pitched bottom head will give you more articulation and a shorter overall snare sound (great for concert snares.) A lower-pitched bottom will give you a longer or “wetter” sound. This tuning is ideal for Field Snares (most marches call for this type of snare).

If the literature you are performing calls for two snare drums, the high-low tuning scheme might be the way to go as it will create great contrast in the snare sonorities. With regards to the snare-side head, I prefer the Evans Hazy 200, which is a 2mm thick snare-side head. The thinner bottom head allows for an overall characteristic snare sound while giving the performer greater sensitivity at the ppp dynamic range.

The third sub-component of a great-sounding snare drum is the snare-side strainer. The strainer is composed of wire strands or any number of individual plastic strands or “guts.”

If the drum you’re tuning is composed of wire strands, no individual tuning is necessary. Make sure the wire strands are engaging the snare side head all the way across the drum. If you have individual strands, the strands need to be individually tuned to have a great-sounding drum. Disengage the snare strainer and slide a pencil between the strands and the bottom head creating a resonating chamber. As you pluck each gut to hear the pitch, take a small screwdriver and turn the corresponding screw (located at the end of the strainer opposite the throw-off mechanism) thereby tightening the strand. Continue this until all strands have been tuned. I prefer the strands to be one homogenous pitch. Another variation would be to tune every other strand high, leaving the alternating strands low. Another is to tune the peripheral strands on both sides very high and leave the center strands low. Individual preference dictates many tuning schemes but the strands will love you for devoting attention to them! Once you have tuned the strands, remove the pencil and engage the strainer. Use the strainer knob to ensure the strands are properly tightened (no strands should be hanging - all should touch the bottom head). Use the vertical adjustment knob on the strainer to raise or lower the strands making sure the strands touch the snare side head. As the heads stretch, tuning touch-ups throughout the next several days will be needed to maintain a properly tuned drum.

**CONCERT TOMS:**

Most modern literature calls for 3-4 concert toms. I prefer to use 10”, 12”, 14”, and 16” concert toms. These sizes allow for a good high-to-low contrast...
while keeping the pitch ranges characteristic to the shell size. The Evans Strata 1000 series is a great choice allowing for a warm round tone with a dark fundamental. For tuning purposes, see above. The pitches are not set in stone as today's literature can ask for a variety of sounds. I start with the 10” drum and tune it to a pitch which allows the drum to speak well. It’s easy to “over crank” the small drums. Be careful; when this happens, you lose most of the tone and projection of the drum. I then tune the 12”, 14”, and 16” keeping an intervallic relationship between the drums. Each drum should resonate freely and unrestricted.

**CONCERT BASS:**

I consider the concert bass drum an integral part of the symphonic percussion ensemble. The highest paid player in John Phillip Sousa’s band was the bass drummer! A great-sounding bass drum has a deep, rich tone that supports the bottom end of the music ensemble. I use a 40” bass drum utilizing the Evans Strata 14mm top head with the Power Center Dot and the Strata 10mm head on the bottom side. The thinner bottom head allows the drum to resonate properly. To tune the bass drum, seat the head on the bearing edge and slowly and evenly take each lug up in tone, then repeat for the bottom side head. Once the heads have been taken up in pitch, take your fingers and lightly press the center or nodal point of the drumhead to get rid of the overtones; this allows you to hear the fundamental more clearly. While pressing the center, take a small bass drum implement and lightly tap the head near each lug listening for pitch differentiation lug to lug. The

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goal is to get each lug zone to the same pitch. Once you have tuned the head, you can take the whole head up or down (lug by lug) as you decide on an overall pitch. I like both heads (top and bottom) to be at the same pitch. In a symphonic setting, I’ve found tuning to a B works very well. In an outdoor venue such as a stadium, I like tuning to a C-Sharp. Again, these are personal preferences which I’ve found work best…use them as a suggestion only.

**TIMPANI:**

For Timpani playing, I prefer the Evans Strata series. The heads produce a dark fundamental and blend extremely well with the low brass in a symphonic or outdoor setting. To change/tune the head, first place the head on the bowl, making sure that it is sitting evenly on the bowl. Place the counterhoop on the head, again checking for evenness all the way around. Hold the timpani pedal in the position that creates the lowest pitch. Replace the tension rods and finger-tighten the rods until they make contact with the head. DO NOT APPLY PRESSURE TO THE HEAD YET! Use the cross-lug sequence starting with full turns and eventually going to half turns. While maintaining the pedal in the lowest position, tension the head until it reaches the lowest note in the playing range (as suggested by the drum’s manufacturer.) Check the depth between bearing edge and the counterhoop, measuring the collar at each tension point. Use the pedal and tune the drum to a mid-range pitch. Strike the drum about 3” from the collar to produce the best tone. Go “lug by lug,” pitch-matching each lug. Depress the pedal all the way down and now tune the head to the highest pitch on each drum (as suggested by the drum’s manufacturer). The drum head is said to be “cleared” when all spots at each tension lug are in tune. The following timpani tuning ranges are generally accepted:

- 32” D-A
- 30” E-B
- 29” F-C
- 28” F-C
- 26” Bb - F
- 25” Bb - F
- 23” Eb - Bb
- 20” F-C

**ETHNIC DRUM TUNING:**

Ethnic drums (bongos, congas, and timbales) are a major staple in modern symphonic literature. The drums should be tuned such that the drums speak well and have a good characteristic sound. To achieve this, I use Evans Tri-Center Bongo and Conga heads. The dot in the center removes unwanted overtones and adds weight to the center, thus dropping the fundamental frequency, producing more low-end.

**BONGOS & CONGAS:**

To properly mount a bongo or conga head, set it on the drum, placing the counterhoop over the head, and finger-tighten each rod/claw until the nut at the bottom of the rod is snug, making sure the collar height is even all the way around (the collar height is the distance between the top of the counterhoop and the flat playing surface of the head). Using the cross-lug
tuning sequence above, slowly bring the head up to taste. Play the head using a variety of palm, hand, and finger strokes until you are satisfied. The bongos should have a nice characteristic “pop.”

TIMBALES:

For timbales, I use the Evans J1 Etched, which is a single ply 10mm head. These heads provide a satisfying tone while delivering a brilliant rim shot. To tune, set the head on the drum and finger-tighten each lug. Using a drum key, tune the heads up using the cross-lug tuning sequence. Tune the drums to personal taste. The tone should be full with a nice separation between the high and low drum.

MARCHING EQUIPMENT:

SNARE DRUM:

For the marching side of things, I love the MX White Series from Evans.

The MX series is extremely extremely durable and produces a great sound. The MX series works equally well outdoors or in a winter percussion venue. I use the MX White batter head and the MX5 5mm (an Aramid Fiber/Polyester composite) on the snare side. I like the composite head on the bottom because I feel a nice tight bottom head is the key to a great-sounding marching drum. It is also cost-effective and relatively maintenance free. For tuning, see the above tuning sequence for the concert snare. Pitch-wise, I tune the bottom head to a D (an Eb the weather is a little less humid). I also tune the individual snare strands to the same pitch. Make sure your preferred pitch is not too high. An overly cranked marching snare does not have a lot of projection and does not blend well with the flutes and trumpets.

TENORS:

I use tenors sized at 6”, 6”, 10”, 12”, 13” and 14”. The MX White tenor head is a great choice here, indoors and...
outdoors, as the heads are made using two 7.5mm of the same tonally rich film used to produce the MX Bass head. My tuning scheme is the following:

6” F and C (low/high)
10” A
12” F
13” Eb
14” Bb

When tuning multiple sets of tenors, tune one set to your personal taste, then use that set of drums as a template for the rest of the sets. You’ll find your tuning time significantly decreases.

**BASS DRUMS:**

I used both the MX1 White series bass drumhead and the Evans MS1 Bass head. The MX1 is a 10mm single-ply head, which includes a unique tone damping system that enhances articulation and focuses the low-end. The MS1 is a single-ply 10mm head, which allows the performer to use more “old-school” damping methods. Both heads have had great success in outdoor stadiums as well as indoor venues. I have used many different-sized bass drums (since the high school I work at performs mostly in an enclosed dome, I go with 16” 18” 20” 24” and 26”. The drum corps I teach uses 18” 20” 24” 28” 32”) and I will list a basic tuning scheme:

16” B
20” G flat
24” D flat
28” A flat
32” D-flat

The bass drums should have an intervallic relationship, with each drum able to resonate within the characteristic qualities of its shell.

All of the above tuning tips and schemes are based on trial and error. Remember, there is no right or wrong way to tune a drum. Make them sound good, take care of the equipment, and happy drumming!

*Some tips were used with permission from Evans Drumheads.*

Michael McIntosh is currently the percussion designer/arranger and music coordinator for the Bluecoats Drum and Bugle Corps. His daily activities include acting as the percussion coordinator for the Carmel-Clay school district in Carmel, Indiana. Michael is an active clinician and has performed clinics for TMEA, OMEA, DCI, WGI, BOA and PASIC.

Michael has percussive works published by Row-Loff Publications, Yamaha Sounds of Summer, Tap Space Publications, Drop 6 Media and the Hal Leonard Corporation. He is a Yamaha artist/clinician as well as a signature artist with Innovative Percussion. Michael also endorses LP Percussion, Evans drumheads, and Zildjian cymbals.