



**Southeast**  
Missouri State University  
TM

## **Percussion Repair:**

**From the General Music Classroom to the High School Band Room**

**Dr. Shane Mizicko**

**Director of Percussion**

**Southeast Missouri State University**

**[smizicko@semo.edu](mailto:smizicko@semo.edu)**

**573-651-2343**

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## Tools and Supplies

- **Tool box**

- Various sizes of flat-head (regular) and Phillips (cross-shape) screwdrivers
- Adjustable wrench
- Various wrenches (US and Metric)
- Drum key (a high tension drum key will be needed for marching drums)
- ¼ inch drive socket set
- Allen (hex) wrenches (US and Metric)
- Hammer
- Various drill bits
- Utility knife
- Tape measure
- DrumDial ([www.drumdial.com](http://www.drumdial.com))...optional

- **Supply box**

- Snare cord, cymbal felts, sleeves, and washers ([www.steveweissmusic.com](http://www.steveweissmusic.com))
  - Sabian Crisis Kit
  - Zildjian Drummers Survival Kit
- Various wing nuts (cymbal stands, crotales)([www.steveweissmusic.com](http://www.steveweissmusic.com), hardware store)
- Cymbal straps ([www.steveweissmusic.com](http://www.steveweissmusic.com))
- Mallet instrument node insulators (or tubing cut to size) ([www.steveweissmusic.com](http://www.steveweissmusic.com))
- Mallet instrument cord (parachute cord / paracord is standard) ([www.steveweissmusic.com](http://www.steveweissmusic.com))
- Various Orff instrument pins and cording (Available at [www.westmusic.com](http://www.westmusic.com))
- ¼ inch black braided polyester elastic (finger cymbal and castanet)(Fabric/craft store)
- Fishing line or Avery Dennison 5" Secur-A-Tie Circle Fasteners (Office supply stores / Staple / Office Max)
- Glass cleaner (Windex or similar)
- Rags / old towels
- Sand paper (medium/100 grit)
- Braided rope (various sizes and strengths used to suspend gongs, tam-tams, etc...)(available at hardware stores)
- Dr. Scholl's Moleskin (Drug store, etc...)
- Petroleum jelly (Vaseline or similar)
- 3 in 1 oil and/or WD-40
- Wood glue (interior use)
- Tape (masking tape is often used a temporary clamp)
- Large hose clamps or large rubber band (tambourine repair)
- Threadlocker (Loctite Brand - Blue)

## Glockenspiel/Bells (General Music Classroom)



- Disassemble - save old pins, insulators, felts, etc... until you get new replacements. Use the old parts as templates for shopping for new parts.
  - *Studio 49 and Sonor* replacement parts are available from [www.westmusic.com](http://www.westmusic.com)
    - Individual glockenspiel bars are available (\$15+)
  - Some suitable replacement parts are available at local hardware stores:
    - Pins = Bright finish nails or panel board nails
    - Felt circles = Felt bumpers/pads used under furniture & lamps
- Lightly sand bars (just enough to remove old markings and scuffs) and wipe everything clean.
- Check frame, if needed, re-nail/glue frame.
- Paint (gloss is best for bars)
- Reassemble... **important**... if your new nails/pins are not the same size you may need to pre-drill to avoid splitting the rails/frames.

## Orff Xylophones/Metallophones (General Music Classroom)

- If there's buzzing... check box and internal dividers. Glue where necessary and, if possible, tape/clamp until glue dries.
- Replace broken pins, worn cord/tubing, and missing or deteriorated pin insulators
  - *Studio 49 and Sonor* replacement parts are available from [www.westmusic.com](http://www.westmusic.com)
    - Individual xylophone and metallophone bars are available (\$35-\$85)
  - Some suitable substitute parts are available at local hardware, automotive, and medical supply stores.
    - Pins = bright finish nails or panel board nails
    - Pin insulators = Hard emission tubing
    - Tubing = Surgical tubing

## **Accessory Instruments (K-12 General Music – High School Band)**

- **Finger Cymbals** and some **castanets** (broken straps) – repair with ¼ inch black braided polyester elastic (Fabric or craft stores)
- **Guiro, maracas, wood blocks** (cracked)– can often be glued (tape will suffice until glue dries)
- **Rhythm sticks** (splinters) – sand and/or glue
- **Wind chimes/chime tree/mark tree, triangle** (broken fasteners) – fishing line or Avery Dennison 5” Secur-A-Tie Circle Fasteners...(available at office supply stores)

## **Drums & Tambourines (K-12 General Music – High School Band)** **(Broken/worn Heads)**

- **Tunable tambourines, bongos, djembes, snare drums, miscellaneous drums**
  - Measure the diameter and/or take the old head to your local music store to match the size.
    - Most (beginner-professional) concert snare drums are 14” in diameter
    - Tambourines vary in size: 10” for middle school-professional  
10” or less for elementary school
  - Some tunable skin heads (tambourines and bongos) can and should be replaced with synthetic heads.
  - Remo tubanos
    - Remo replacement pre-tuned tubano heads are available from [www.westmusic.com](http://www.westmusic.com) and your local dealer.
- **Non-tunable real skin tambourines, bongos, etc...**
  - Remove tacks and old head
    - If the head is not coming off easily try turning the drum upside down/head down...soak the head and a bit of the shell in warm water (generally no more than an ½” – 1” of water is needed). This generally releases any previous glue.
  - Let shell dry and remove/sand any remaining glue off of the shell.
  - Soak new head for about 20-30 minutes in warm water.
    - Real skin (untucked/no hoop) available at [www.drumfactorydirect.com](http://www.drumfactorydirect.com) (Search Percussion/Hand Drum Heads)
  - Apply a thin layer of wood glue to shell and place new damp head on shell.
  - Place large rubber band or large hose clamp over the new head and on shell (You may need to connect two smaller hose clamps to make one that is large enough for the circumference of the drum).
  - Let dry
    - If you use a large rubber band be sure to keep the center of the head moist while the edges dry (The edges will dry slower under the rubber band and the head will pull from away from the edges if the center dries first).

## **Mallet Instruments (Middle School – High School Band)**

- **Common DIY Glockenspiel/Concert Bells Repairs**
  - Poor sounding or ‘dead’ sounding notes.
    - Check pins, felt, damper (if equipped), and frame.
  - Prevent damage to concert bells by purchasing a Musser M8005 Bell Cart (Musser Dealers or [www.pylepercussion.com](http://www.pylepercussion.com))



- **Common DIY Marimba and Vibraphone Repairs**
  - Bent pins (carefully bend back into position with pliers)
  - Missing or deteriorated pin insulators (order replacement insulators at [www.steveweissmusic.com](http://www.steveweissmusic.com) or cut tubing to size)
  - Worn or broken cord (order replacement cord at [www.steveweissmusic.com](http://www.steveweissmusic.com) or purchase parachute cord / paracord)
  - Worn vibraphone damper or not all notes are silencing (order replacement damper felt or attach Dr. Scholl’s Moleskin to damper felt where needed.
    - Musser damper felt available at [www.steveweissmusic.com](http://www.steveweissmusic.com)
    - Check local dealer for other brands.
- **Common DIY Chime Repairs**
  - Notes rattle (check for frayed cables)
    - Musser chime replacement cable kit available at [www.steveweissmusic.com](http://www.steveweissmusic.com)
    - Check local dealer for other brands as well as [www.malletinstrumentservice.com](http://www.malletinstrumentservice.com)
  - Not all notes are silencing (attach Dr. Scholl’s Moleskin to damper felt where needed.)
- **Professional Concert Bells, Marimba, Vibraphone, and Chime Repairs**
  - Rebuild frame and/or provide replacement concert bells case.
  - Bar tuning, bar refinishing, and individual bar or chime tube replacement.
    - [www.centurymallet.com](http://www.centurymallet.com) (Century Mallet Service - Chicago, IL)
    - [www.marimbas.com](http://www.marimbas.com) (Fall Creek Marimbas - Victor, NY)
    - [www.demorrowinstruments.com](http://www.demorrowinstruments.com) (DeMorrow Instr - Arkadelphia, AR)

## **Timpani (Middle School – High School Band)**

- **Common DIY Timpani Repairs**
  - Most pedal problems can be fixed by either properly tuning each drum to its respective range and/or by replacing the head.
    - General Pitch Ranges
      - 32" – D to A
      - 29" – F to C
      - 26" – Bb to F
      - 23" – D to A
  - Check [www.vicfirth.com/education/articles/replacing\\_timp\\_heads.html](http://www.vicfirth.com/education/articles/replacing_timp_heads.html) for detailed directions for measuring and changing a timpani head.
  - Dents in the bowl can be removed with a rubber hammer. Use small strokes around the edge of the dent and work toward the center.
  - The number one reason that timpani heads do not sound true is because the counter hoop is not flat or perfectly round. Check your local dealers to order new counter hoops. If the bowl is no longer round that is a job for a professional.
- **Professional Timpani Repairs**
  - Bring the bowl into round, replace any counter hoops that are not flat and round, repair and/or install tuning gauges, paint, etc...
    - [www.pctimpani.com](http://www.pctimpani.com) (Precision Classic Timpani - Portage, MI)
    - [www.americandrum-w-light.com](http://www.americandrum-w-light.com) (American Drum Mfg. Company, Denver, CO)

## **Bass Drum (Middle School – High School)**

- Drum or stand rattles (check for any possible loose screws or objects inside the drum)
- Drum rattles (possible internal spring rattle in lug casing)
  - Once you determine which lug is rattling... this is not always an easy task... remove one drum head and then the suspect lug and then pack the lug casing with cotton/cotton ball.



## **Bass Drum (continued)**

- Suspension band broken (these are the bands that are used on bass drums that are suspended on hoops stands)
  - Suitable substitutes (vacuum cleaner belts) can be found in hardware stores.
  - Can also be ordered from [www.steveweissmusic.com](http://www.steveweissmusic.com)

## **Hardware Tip**

- Never attach a cowbell, 'jam block,' tambourine, etc... to the threads of a cymbal stand. Instead... create a dedicated stand by using an old 'useless' stand by adding a *LP Mini Everything Rack* (LP472).



## **Percussion Cart / Cabinet**

- To avoid unnecessary damage to small accessory instruments and to prevent the loss of triangle beaters from year to year... dedicated percussion storage is a must.
  - A simple file cabinet (line each drawer with carpet)
    - One drawer labeled for wood (maracas, wood blocks, castanets, etc...)
    - One drawer labeled for metal (triangles, cowbells, shakers, etc...)
    - One drawer labeled for large beaters & mallets (bass drum, gong, etc.)
  - In addition to a file or storage cabinet a portable percussion cabinet/cart is an invaluable addition to every percussion section; it not only prevents damage to fragile accessory instruments but helps prevent mass chaos when changing from piece to piece. I highly recommend the Columbus Percussion Concert Percussion Cabinet available from [www.columbuspercussion.com](http://www.columbuspercussion.com)



# How to Organize Your Percussion Section

**Dr. Shane Mizicko**

**Director of Percussion, Southeast Missouri State University**

**smizicko@semo.edu, 573-651-2343**

*An organized plan will...      ...teach your percussionists how to be more organized  
...help prevent mass chaos when changing from piece to piece  
...help prevent unnecessary instrument damage / maintenance  
...helps keep track of instruments & prevents lost instruments*

## **Shared Spaces - Band, Orchestra, Choir (See Diagram #1)**

- Establish a basic or generic setup that is similar for all instrumental groups. If choir uses the same rehearsal space this setup will be easy to move back out of the way.
- Maintain separate equipment and a separate designated area for the drum set.

## **Storage Room and/or Shelves (See Diagram #2)**

- Store all equipment not used daily out of the way.
  - Field drum, concert toms, extra snare drums
  - Extra keyboard percussion instruments (marimbas, vibraphones, chimes)
  - Tam-tams and/or gongs
  - Extra cymbals, cymbal stands, miscellaneous hardware, trap tables
- Label shelves, walls, and/or floors

## **Accessory Instrument Storage (See Diagram #3)**

- Percussion Cart or File Cabinet
  - Line drawers with carpet or durable foam
  - Label drawers
    - Wood (maracas, claves, wood blocks, castanets, guiro, etc...)
    - Metal (triangles, cowbells, whistles, shakers, etc...)
    - Large beaters/mallets (bass drum, tam-tam, chime, etc...)
- Keep 'difficult to mount' instruments on stands and setup whenever possible.
  - Mark tree/wind chimes
  - Temple blocks
  - Miscellaneous 'Everything Rack' (for mounting cowbells, jam blocks, etc.)

## **Miscellaneous Tips**

- Have plenty of hand towels (black) available for use on music stands as trap tables.
- Avoid cymbal cradles. Trap tables are recommended for quiet and safe playing.
- All students should own their own stick bag with a minimum of sticks and mallets.
  - Concert snare drum sticks
  - Medium yarn and/or cord mallets (marimba, vibraphone, sus. cymbal)
  - Bell mallets
  - Xylophone mallets
  - General timpani mallets
- Cover mallet instruments and timpani when not using. Have a place to store the covers when instruments are in use.