Percussion Maintenance:
Tips for the Band Director

Band directors often find their percussion instruments in bad shape, and yet don't know how to repair them. As a result the instruments are simply ignored and allowed to deteriorate. But percussion instruments require the same careful treatment a violin or oboe receives. This step-by-step guide should help you maintain the percussion instruments; proper care will improve the sound, and make playing more enjoyable for percussionists. Remember, no one likes to play on a broken-down instrument.

Timpani

Timpani require careful and frequent maintenance. To examine the instrument first remove the head. If the drum is a balanced action drum, like some Ludwig models (the pedal has no ratchet or braking system, but is kept in place by a heavy spring), hold the pedal firmly in the lowest note position with your foot while removing the head. When the head is off, slowly allow the spring to pull the pedal all the way up. Do not let it jerk. Now with the head removed, examine the rim of the drum, where the head rests (Figure 1). Is it round, smooth and an even height all the way around? If the rim is not round use a rubber hammer to bend it back out. However if the height of the rim is not even or there are rough or jagged spots on the rim you will have to consult a professional repairman.

Without the proper equipment it is impossible to repair these problems correctly.

Next examine the counterhoop which puts tension on the head. If it is not round or level it must be replaced. Replace a dented, pitted, or sagging head. For timpani with a spring tension pedal, check that it remains in position no matter how hard the head is struck. If it does not, the spring is out of adjustment (a head not in its proper range may also cause the same symptom). When the pedal is hard to move up or slips down, turn the knob above the pedal clockwise, increasing the counter-tension. If the pedal is

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difficult to move down or if it slips up, the countertension is too tight; turn the knob counterclockwise until the pedal moves freely and remains on pitch. Remember, releasing the spring tension too much can cause the pedal to become disengaged, and a professional will have to repair the drum. Timpani with ratchet pedals should be checked to see if the notches are worn. If they are and there is slippage, the notched bar will have to be replaced.

Before replacing the head, spread a little lubricant, such as cork grease, around the circumference of the rim. This allows the head to move more freely when tuning, and helps to eliminate squeaks. Place the head across the rim so that there is an even overhang of head around the rim. Clean the counterhoop with a damp cloth and place it on the head. Before inserting the tension screws, clean and oil them with one of the lug lubricants produced by the drum manufacturers. Do not use a regular oil or grease, as these will collect dirt and will foul the mechanism. Then lubricate the mounting holes on the counterhoop. The spring tension timpani pedal should now be returned to the lowest note position. Then adjust head tension to tune the drum.

For rattles and squeaks, check and tighten all mounting hardware and wheels and lubricate the moving parts. If a squeak occurs because the head moves over the bowl edge, start all over by removing the head and replacing it.

Timpani should be covered when not in use and be sure to keep them from banging against each other.

**Mallet Instruments**

Mallet instruments are usually fairly easy to maintain. Once they get in bad shape, however, they are difficult or impossible to restore. Be sure to keep them covered when not in use. Wipe off the bars with a glass cleaner, and clean out the resonators. Check that the pegs between the bars do not pinch the bars; if they do, gently bend them. When the cord running through the bars is loose, tighten it, and replace frayed cords. If the instrument rattles when played check the wheels and the resonator. There may be some foreign object in the resonator that vibrates with the sound.
Wooden bars on marimbas and xylophones should be replaced if splintered or cracked and the bars should also be checked for pitch. Wood bars are now kiln dried, so the wood dries out faster than normal causing the wood to settle unnaturally. Consequently, a wood barred instrument may go out of tune in a matter of weeks. The pitch of a wood bar can also be affected by the humidity in the instrument storage room, but in schools it's hard to control humidity levels. Also check that each bar is in tune with itself by placing a finger on the middle of the bar and striking the bar on the node (where the cord runs through the bar) with a mallet. On a marimba an overtone two octaves up from the fundamental pitch of the bar should sound; on a xylophone the overtone will be a twelfth up. A strobe tuner will help in determining the correct pitch. If a bar appears to be out of tune, first check it without its resonator, then with. If the coupling between the bar and the resonator is improperly matched it will sound out of tune. But tuning bars is a delicate and complicated procedure, so if the bars are out of tune the best thing to do is to send them to a reputable tuner of mallet instruments. However, you can tune a resonator by changing the length of the pipe. To do this, gently tap on the cap at the bottom of the resonator until it has reached the correct length. To reach the cap from above, tap on a dowel placed inside the resonator. Slight adjustments are usually adequate so be very careful and constantly check for resonance. When the tube resonates the correct pitch, replace the bar over the resonator and try it. The tone of the bar should now resonate.

On bells, chimes, and vibraphones examine the felt on the damper bar and on the carriage. If worn it may start to rattle so replace it. Examine the damper pedals and the motor and pulleys on the vibraphone for squeaks and apply a few drops of machine oil to eliminate any squeaks. Be sure that chimes are tied tightly to the frame so that when the tubes are struck they do not hit the back of the frame. A broken or worn cord should be replaced. Also check the striking cap at the top of the chimes; the cap is screwed on and may come loose, causing a rattle (figure

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Drums
Drums make up the majority of the percussion instruments in most bands, and are probably the easiest to maintain. Yet these instruments are often in the worst shape of all band instruments.

To prepare snare drums for use, remove the batter head (top head), and examine the rim, counterhoop, and head. Bad heads must be replaced, or the drums will have a dead sound. Be sure that all the hardware for the drum is present and secure; replace any that is missing. Clean the hardware with a dry or slightly damp cloth, and oil with a lug lubricant.

After inspecting and repairing the drum, reassemble and tune it. To mount the head, place it on the rim of the drum, put the counterhoop on top of it, and tension the screws for proper tuning. After tuning adjust the snares to produce a good sound at all dynamic levels. The snare mechanism must be able to bring the snares all the way on and turn them all the way off. If the snares are individually adjustable, all should be adjusted to the same tension. Any snares that are falling out should be removed with wire clippers.

Tenor drums, tom-toms, bass drums, and marching drums should receive the same general maintenance as snare drums. Bass drum stands have a tendency to rattle, so isolate the noise and lubricate or pad to eliminate the rattle. Some-
times the stand will rattle against the floor; to solve this problem, set the drum on a rug or remove the wheels. Marching drum heads need to be replaced more often than other drum heads, and the drums must be frequently cleaned. Also tighten all nuts and bolts on carrying devices and replace worn straps.

Accessories

Often directors find they cannot locate the source of a problem with their percussion instruments, when a simple adjustment of a stand or some other accessory is all that is needed. Examine drum stands to see if any part of the stand touches the drum head or causes the snares to touch the head when turned off. If so, bend the arms of the stand upward until the snares hang freely and do not touch the head. Check that the suspended cymbal stands have rubber sleeves over the threads and felt pads under the bell of the cymbal (figure 3), otherwise the cymbal will rattle when played.

Figure 3. The top of a suspended cymbal stand showing the rubber sleeve over the threads and the felt pad that goes under the bell of the cymbal.

Triangles should be held from a holder and the cord that attaches the triangle to the holder should be shortened so it is barely larger than the diameter of the instrument. Also, an extra safety loop is recommended. All instruments that are not on stands should be placed on a padded table so the instruments can be set down without making any noise.

The troubleshooting guide on the following page should help band directors maintain their percussion instruments. Like any fine instrument, percussion instruments sound best when given proper care and maintenance.
# Troubleshooting Guide for Percussion Instruments

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<td>Replace.</td>
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<td></td>
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</tr>
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<tr>
<td></td>
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<td></td>
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<tr>
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<tr>
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<tr>
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