

Woodwind Repairs Directors Can Make

And Those That Should Always Go to a Shop

By Roger Venaas

I started doing minor repairs to my clarinet in high school; I repadded an old metal clarinet in tenth grade. It was fun, but it still sounded like a metal clarinet. I enjoy making minor repairs for my students

as well, but I didn't become a band director so I could spend all my time fixing students' instruments. I have learned when to stop to avoid spending all my time fixing instruments.

When considering whether to repair something myself, I first consider how difficult the repair is. If it will take me five minutes or less and is something I can do with the basic tools in my drawer, I will make the repair. If not, I send it to the shop. It is also important to consider what happens if I damage a student's instrument while attempting to fix it; I would have to pay for the repair. If a repair shop or music store damages my student's instrument, then it is responsible for fixing or replacing it.

Flutes

If a flute is missing the head crown, the student should order a new one from a repair tech. It protects the top of the flute from denting and debris.

If the flute plays poorly or is out of tune on some notes, the head cork could be loose. Use the butt end of the cleaning rod to check head cork placement. If the little line on the rod is not in the center of the embouchure hole, the head cork is loose and should be replaced. This is a repair best sent to the shop; the new cork must be custom fitted to the head joint. In an emergency, warm up (not too hot) the outside of the head with a heat source. This will temporarily expand the cork for a day or two to get you through a performance. Then, send it in to be fixed.

Dents (especially head joint and foot joint tenons) should be repaired by a professional. Other dents are cosmetic, but tenon dents make assembling the instrument difficult or impossible.

Difficult assembly, if not caused by a dented tenon, is often caused by dirt. Do not put cork grease on a tenon to make the instrument go together more easily; cork grease is only for corks. Flute tenons and sockets can be cleaned with rubbing alcohol on a tissue or cotton swab. (Never use rubbing alcohol on plastic-bodied instruments; it can cause molecular changes in the plastic and cause it to crack.)

If the head or foot joints are loose, send them to a shop to have them tightened. Do not wait until a footjoint hits the marching field.

If the keys are not working, check whether one of the spring wires is off. If so, put it back in its cradle with a spring hook. If a spring is broken or missing, the instrument should go to a shop. Repair techs keep a stock of many sizes of springs, have the tools to custom-fit the spring to the instrument, and also know how to set the correct tension.

A loose screw or rod can be tightened with a tiny screwdriver. If it is lost and a performance is not imminent, order a new screw or rod from a repair technician. In an emergency, a repairman can make a new rod or screw, but it will cost more.

Is the key bent? The most commonly bent key on the flute is the A \flat /G \sharp key between the double G key. If it gets bent, which usually happens when a student assembles the flute incorrectly, it will cause an annoying clicking sound when those keys are used. The A \flat key can usually be bent back with the fingers, but the best solution is prevention. Flutists should assemble the flute holding only the places that have no keys. Teach stu-





Saxophones

Saxophone reeds, mouthpieces, and key corks have the same rules as those for clarinet, and socket and tenon cleaning should be the same as for flute.

The main cork found on a saxophone is the neck tenon. If it gets too compressed and won't hold the mouthpiece in different positions for tuning, send it in for replacement. In an emergency, put a piece of scotch tape around it to tighten it or hold a broken cork together. An emergency pad and cork kit should have neck corks that work in a pinch.

The most common problem on a saxophone is that the neck octave key gets bent during assembly. This causes the neck octave key pad to remain open and make the lower octave notes squeak. Check this by fingering G to A. If the neck octave pad is open when fingering a G, put one hand on top of the key where the pad is and pull up on the back loop of the key until it closes. Then, with the thumb octave lever pushed, finger from G to A. The pad should open for A, close for G. Make sure students put their hand around the neck octave key when assembling, never grab the neck and the key while putting together and taking apart.

Many saxophones come with a swab for the body, but not for the neck and

work its way under the cork and disintegrate the cork cement, causing the cork to fall off. Use cork grease only when needed.

Missing key corks cause sloppy key action and clicking or will make some notes unplayable. Send the instrument in for a new cork.

Bladder pads can rip or tear; have a professional replace them. If you find clean holes in the center of bladder pads, along with a powdery residue in the case, the clarinet has a carpet beetle larvae infestation. They love to eat the wool felt that is under the skin of the pad. This is usually only found in instruments that have been stored for a long time. Infested clarinets must be repadded, and unless it is repadded with synthetic pads, the instrument will need a new case, too.

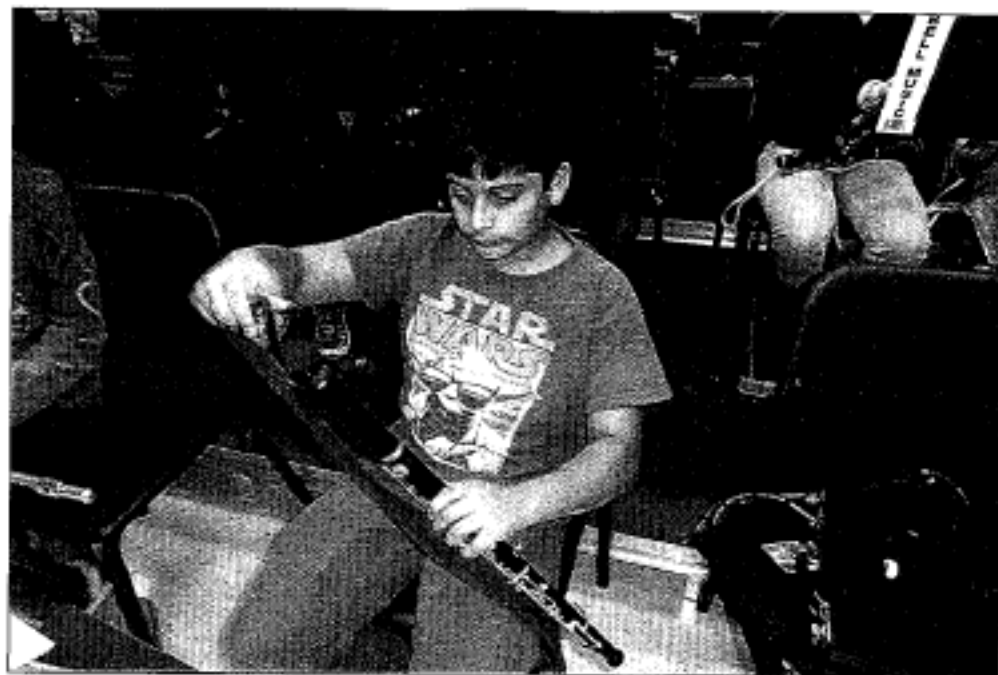
Swabbing is the best prevention for pad problems. I prefer to have students use a cotton or silk swab. Sticky pads often occur when students do not swab after playing, or when they chew gum, eat, or drink sweet liquids before or while playing. If pads stick, try inserting a dollar bill (the older and grungier the better) between the pad and the tonehole. Press down lightly on the key cup and gently pull the dollar bill out. If this does not take care of the stickiness, send it in to be replaced. Never use alcohol to clean a pad on a plastic clarinet; if the alcohol gets on the plastic, it can cause it to crack.

If a key is bent, try bending it back with your fingers. If this doesn't work, carefully use smooth-jawed pliers. Never use regular pliers, because the teeth will leave scars on the key. The most commonly bent keys on a

clarinet are the B \flat /E \flat trill key, the bridge keys, and the left hand F \sharp /C \sharp lever. These keys become bent from improper assembly of the upper and lower joints. Have students push down the ring keys on the upper joint while gently twisting and pushing the joints together. It is best to hold the lower joint below the keys while assembling. Have them grease corks if the joints become difficult to assemble.



The photo shows some of the tools I keep on hand for the limited repairs I do at school (left to right): a small rawhide mallet, a large rawhide mallet (an old chime mallet), regular and Phillips-head screwdrivers, two small woodwind screwdrivers, an old drumstick cut in half, a spring hook, a bottle of rubbing alcohol, super-glue gel, smooth-jaw pliers for key straightening, a heat source, a mouthpiece puller, two drum keys. I also have regular pliers for general use; emergency pads and waterkey corks, a feeler gauge made from a sliver of paper; rotary valve string, brass and woodwind mouthpiece brushes, valve oil, and slide grease.



mouthpiece. If the neck and mouthpiece aren't cleaned after each use, nasty things start to grow in them. My remedy is to use a cloth clarinet swab to clean saxophone necks and mouthpieces.

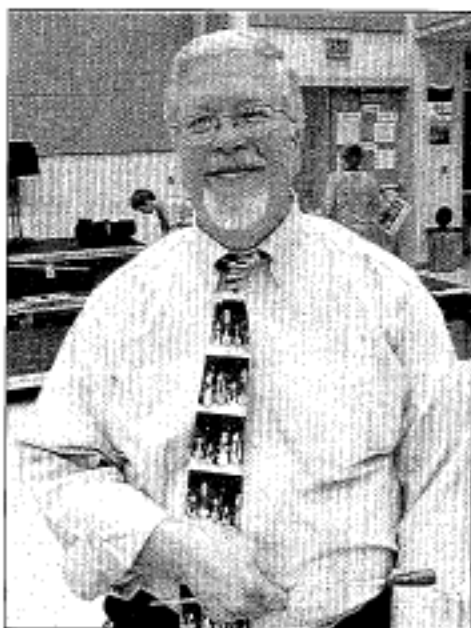
Most pad problems are caused by lack of swabbing or playing right after eating. The most common pads affected are the left hand palm keys and the low E \flat . The low E \flat sits where the moisture collects when the case is stored on its side. I show beginners how to swab their saxes after the second lesson and introduce swabbing by telling students I'm going to save their parents hundreds of dollars by showing them a simple technique. This gets students' attention and will keep their instruments playing in band and out of the shop.

If a pad falls out, it needs to be replaced, never try to heat up the pad cup and stick the gluey side of a pad back in. It is almost impossible to line up the indentations in the pad (the seat) with the tonehole so it won't leak. In an emergency, use a peel-and-stick pad and cork kit, then send the instrument in to have the pad replaced by a professional.

Saxophone key guards often get bent, making the key stick or not open enough. If it is not too badly bent, a light, sharp tap with a rawhide mallet often moves it back so the key can function again. If it is badly bent, send it in for straightening. If a keyguard flange is broken, send it in to be resoldered. Never put super glue on it; this is nasty for the technician to repair and never holds anyway.

There is nothing I hate more than having a student sit for a week in rehearsals while his instrument is in

the shop being repaired. Doing minor repairs can keep students from missing rehearsal time, earns appreciation from your band students, and is kind of fun, but it is always better to avoid having to repair an instrument. Cleanliness is next to godliness when it comes to instrument maintenance. □



Roger Venaas is a 1980 graduate of the University of Minnesota, Duluth, with bachelor degrees in music and education. He graduated from Red Wing Technical College (Red Wing, Minnesota) with a certificate in Band Instrument Repair in 1992. He has taught elementary, middle school, and high school band in Minnesota, Iowa, and South Dakota. He teaches 5th grade band, 6th grade band, 5th and 6th grade classroom music, 5th grade computer, and middle school jazz band at Dakota Valley Middle School in North Sioux City, South Dakota, where he has worked for the last ten years. He lives in Le Mars, Iowa with his wife Robin, a fine flautist. He repairs band instruments in his basement workshop.

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dents to use the barrel/socket area at the top of the main joint and the bottom of the foot joint below the keys while putting the flute together.

If the key is still binding, try putting a drop of key or valve oil on the joints of the key, and work the key back and forth a dozen times. If that does not fix the problem, send the instrument in for repair. It needs serious straightening or dent removal.

If the key is broken it must be sent to a repairman to be silver-soldered. Some bargain instruments have keys made of pot metal instead of nickel-silver. Pot metal keys melt into an unsightly puddle when heated to a temperature hot enough for silver-soldering.

If pads are leaking, avoid bending keys or setting adjustment screws. Send the instrument in for regulation.

After playing, flute students should swab out their instruments. I have my students get a bandana to use as a flute cleaning cloth. They are inexpensive, colorful, and help them be able to tell which flute is theirs. They thread the bandana into the eye of their cleaning rod, fold it over, twist it around the rod, and clean out all three joints. I allow students to care-

fully wipe off their fingerprints with it after cleaning the inside, but I do not permit them to use a silver polishing cloth very often, because of the risk of scratching the silver or destroying a pad. When students are done cleaning their flutes, they tie the bandana on the case handle, never storing it on top of the flute in the case, because this can bend keys.

Oboes and Bassoons

Check the reed first. Reeds cause many problems, especially on the oboe. To avoid this at first, I start beginners on a medium synthetic reed. After they have played for a year, I switch them to a cane reed. If you don't have a professional oboist to make reeds for your program, students will need to order a good quality cane reed. I don't recommend having band directors repair oboe or bassoon keys or pads. They are easy to mess up and not worth the time and effort. All repairs for these instruments should be sent to a shop.

Clarinets

Check reeds first, and replace them early and often. My 5th graders go

through many reeds before they learn to avoid snagging them on their clothes and music stands. Single reed players should be able to see a hair of black mouthpiece tip over the top of their reed. This allows the reed to vibrate freely when it's played. I start beginners on #2 reeds. When they have gone through the box they bought at rental night, they are probably ready to move on to a #2½. This typically happens at the end of the school year, when students begin playing in the upper register.

If the mouthpiece has a chip or dent in the tip or rail, or if it has deep teeth marks in the top, it must be replaced. If it is dirty, students should clean the mouthpiece in warm, soapy water and use a mouthpiece brush.

If one of the clarinet's joints is wobbly or loose, or if the tenon cork is gone, send it in for a new tenon cork. In an emergency, put one layer of scotch tape on damaged cork or use a self-stick tenon cork strip from an emergency repair kit to replace missing cork. Then send it in after your performance. Too much cork grease is just as bad as not enough. An overabundance of grease will