

Keeping Instruments in the Hands of Students and Out of the Shop

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Participant Handout

Included in this package:

- **Case Habits Poster**
- **Band Room Trouble Shooting**
 - **Basic Desk Drawer List**

CASE HABITS OF EFFECTIVE MUSICIANS

- *LID UP*
- *JUST THE RIGHT STUFF*
- *LID, SNAP, SNAP*
- *LID TOWARD YOU*
- *INSPECT*
- *CLEAN SWEEP!*

Band Room Trouble-Shooting

Students will be thankful of your repair skills if you can diagnose and possibly fix a problem right on the spot. Remember, not all assessments are complicated. I once diagnosed a flute problem that involved a cleaning brush left inside the instrument. Here are some suggestions that you can try if faced with one of these situations:

Woodwind Keys that Do Not Return – Every woodwind key is spring-loaded. If a key seems to flop loosely between closed and open positions, the problem may be a needle spring that has slipped from the hook on the key part. Follow the metal part of the loose key down the key arm and along the key rod. Somewhere along the way, you will find a small hook on the key part. Nearby should be a needle spring that needs to be fit back into the hook. Use the tip of a screwdriver to gently push the spring into place. If the spring needs to be pulled toward you and manoeuvred into place, use a small latch hook (an inexpensive tool that can be purchased in the sewing department, and typically used for removing “pulls” from knitted sweaters). In more exposed key locations (eg. Saxophones), just push the spring into place with your finger and look like a real expert.

If you found no needle spring near the empty spring hook, now is the time to pick up the phone.

Noisy Woodwind Keys (When pressed) – Cork key spacers are missing. Examine the noisy key. If it is a lever, find the flat spot under the finger pad end that contacts the instrument body when the key is fully pressed. If it is a pivoting key, look for a small arm that stops the key from opening too far by resting against the instrument body when the key is open. Cut a small rectangle of 1mm (1/16inch) sheet cork and glue it **with pad and cork cement** to the flat spot under the lever or under the end of the key stop arm. Commercially available “roadside repair kits” include cork or synthetic material with adhesive on one side for silencing noisy keys.

Do not insert cork under key arms that rest against other moving key parts, as this can cause adjustment problems. These noisy keys should be referred to a technician.

If the noise is coming from the L.H. side levers of a clarinet, examine the contact point between the lever and the key arm. If there is loose play in the lever between the instrument body and the key arm, a cork spacer thin enough to fit in this gap can be inserted. Glue it to the larger of the two contact surfaces. Let the glue dry completely before using these keys.

If the noisy key seems to have all of its cork spacers intact, try oiling the key with key oil. (See Page 11)

If the noise comes from a saxophone when the notes from low Eb and lower are played, also check that the guard screws are snug (and actually there) and for the presence of felt spacers under the guards. Some saxophone models use a cork spacer under the low Eb key finger pad to stop the key rather than a felt bumper under the guard.

Sticky Woodwind Key Pads – Clean pad and tone hole surfaces with a lightly moistened piece of cigarette paper. Open the key, insert paper, close, gently remove paper. Repeat.

“Stuffy” Flutes – Flute key stacks (sections with multiple key parts) are held to the flute body with tapered pivot screws. If these screws become loose, the key stacks can shift, allowing for air leaks around the pads. Check the following screw locations:

- Key post near low D key (Body key nearest the foot). When tightening this screw, ensure that the F# key (fourth one up from bottom) still moves freely. Over-tightening will cause this key to bind.
- Key post near C key (Small circle near the head). When tightening this screw, check the Bb key (First large circle from the head) for freedom of motion.
- Trill key posts. When tightening from both ends, Check C#/D# trill key (Part nearest the key posts) for freedom of movement.

Checking these screws has solved some flute problems in my shop. Problems not solved by this are usually related to mechanism adjustment or seating of the key pads. Call the shop.

Clarinets with No Low Notes – The adjustment screw on the G# key may be too tight. Loosen the screw until you can feel some play in the A key before it lifts the G# key. Turn the screw back in an eighth of a turn at a time, stopping to check the key action. Only turn so far as to eliminate the extra play. Have the instrument test-played for signs of improvement. If the repair worked, but the screw was very easy to turn, the adjusted screw can be held in place with a drop or clear nail polish around the screw head. The dried nail polish will prevent vibration from moving the screw out of adjustment, but can be easily chipped out with the tip of a screwdriver if the screw needed to be adjusted in the future.

Loose Socket Rings on Wooden Clarinets or Oboes – Do not assemble these parts prior to doing something about it. Here is the something: Remove the metal socket ring and place a piece of cigarette paper over the socket. Using a small mallet, tap the ring back on. It should slide down over the paper. When the ring is almost all the way back on (1 mm to go), use a hobby knife to trim the excess paper, cutting a circle around the inside of the ring and in the gap between the ring and instrument body. *Safety Note: Always position and move the knife in a manner that if it slips, it will move away from your fingers, not into them.* The final taps of the mallet should move the ring into place and hide any evidence of the paper. If the ring feels snug (cannot be turned or easily pulled off), assembly can continue.

Saxophones with No Low Notes – Look from the top, and check that the neck is in line with the bell. A misaligned neck will cause the neck octave key to stay open, resulting in squeaks or high notes.

Since there are so many things that can go wrong with this mechanism, not much more can be done with the tools in your desk drawer. However, you can determine if the problem is with the instrument or the player by using one more tool - a leak light. A simple leak light can be made from a 20-light set of clear miniature Christmas lights (the kind that only have a connector at one end), a wire coat hanger and some electrical tape. Fasten the light bulbs to a straightened piece of coat hanger wire with tape, gathering the cord in between to allow for close spacing of lights along the wire. Avoid leaving loops of cord that could get hung up on the octave key body vent tube. Insert this lighted contraption into the top of an alto or tenor sax body and close the keys with normal playing pressure. Look where the key pads meet the tone holes. If light shows through these areas, the saxophone has leaks and needs to see a technician for adjustment and

possibly some pad replacement. This handy tool can cost less than one dollar to make, and can quickly indicate the playing condition of a saxophone. Note: Do not leave a lighted tool in the instrument for prolonged periods. Heat from those little incandescent bulbs will loosen the electrical tape, causing your creation to fall apart.

Woodwinds Needing Key Oil – Use a sewing machine oiler that dispenses oil through a fine metal needle to apply a small drop of oil at each contact point between a moving key part and a key post and in the cracks between moving key parts that share a common hinge rod. Do not use the key oil bottles with the rounded plastic spouts. These let out too much oil, and excess amounts can spread over a smooth surface until it finds a key pad to damage or pad glue to loosen. If this is the only bottle available, apply a drop of oil to a toothpick or tip of a precision screwdriver. Using this tool to apply the oil will allow for control over how much oil gets used.

Trumpets that feel “Blocked” – First check that the valves are in the correct order. While you have each valve out to check the number, check the valve guide (that little plastic or metal part at the bottom of the valve spring) for a square key and check inside the cylinder for one or two notches part way down the cylinder wall. Some models will have one notch and one key, others will have two of each. Most trumpets that have come through my shop have valves designed to fit with the stamped valve number facing toward the player or toward the player’s right hand. A number facing left or toward the bell is usually a valve that does not have its piston ports lining up with the holes in the cylinder walls. For single-key valve guides that only seem to fit the wrong way, unscrew the valve stem from the piston and remove the spring. Remove the valve guide and reinsert it with the key out the other side, keeping the cupped-shaped part facing upward to accept the spring. Reassemble the valve and see if it lets air thorough.

All the valves look correct, but still no air flow? Now we wonder if something got stuck in the bell. Check for this possibility by removing the first valve slide (valve down, remember?). Blow into the mouthpiece receiver while the first valve is pressed. If air flows through and out the first valve slide receiver, the valves are in line. If the blocked feeling returns when the first valve slide is put back on, the blockage is indeed in the bell. Do not try to remove the obstruction from the front, as this will only lodge it further. This one needs to be referred to the shop, where a dent ball driver can be used from the back to knock the object forward. So far, I have dislodged several marbles, a round bottle of valve oil and a plastic monkey from trumpet bells in my shop.

Noisy Piston Valves – Do you hear clanging and rattling as valves are pressed and released? Check that cylinder top caps and valve buttons are snug. Also check for missing felts on the undersides of the finger buttons or in grooves in the cylinder top caps. As models vary, compare valves with the other ones on the same instrument.

Euphonium or Tuba Valves that Do Not Let Air Through, even though the key action seems normal. You have an easy-fix situation if your model has a washer-type valve guide between the valve stem and the piston, and two holes in the top surface of the piston. To check this type of valve guide for proper positioning, unscrew the valve stem until the valve guide can turn. A small pin on the underside of the valve guide is designed to fit into a small hole in the top surface of the piston. The second, larger hole in the same surface is there for drainage. If the valve stem

gets loose (usually from a student fiddling with the button) the valve guide can turn and re-fit itself into the larger hole. The “fiddler” can tighten the stem again, securing the valve guide in the wrong position. The valve looks the same and still “works”, but no air gets through. Simply remove the valve, loosen the valve stem, seat the valve guide pin in the smaller hole and re-tighten. Done. A properly positioned valve guide will reveal part of the larger hole as well as the stamped valve number.

Broken Metal Braces – If there are braces that have come loose at one end or have fallen off, the shop is the only choice. With the instrument’s structural integrity already compromised, continued use will result in broken solder joints in other places. The proper solution involves flux and a pointed blue flame. Do not attempt to secure the joint with adhesive tape, glue or a “weldless” plastic adhesive. These just create a mess that must be cleaned away by the technician before a solder repair can be done. I have had my share of scraping contaminants from metal surfaces before being able to do a solder repair. It takes time. I charge by the hour.

The Basic Desk Drawer

The tools listed here are easy to obtain and will enable you to deal with common situations described in this package.

- One set of **Precision Screwdrivers**. These are available at hardware or department stores. Pick the set with a good selection of flat blade tips for slotted screws. The other types of screwdriver tips do not see much action in Band Class.
- **Small Star-Shaped Screwdriver** (Phillips head No. 1). This tool fits most saxophone guard screws that are not the slotted type. This item may not have to be purchased if one is included with the precision screwdrivers.
- **Saxophone Leak Light**. Remember the coat hanger, electrical tape and miniature lights?
- **Sheet Cork** (1mm or 1/16inch thick) for silencing noisy woodwind keys. Available for the Hobby Supply place.
- **Hobby Knife** for cutting cork spacers from sheet cork. Ask for one when buying the cork.
- **Tweezers**. Use for inserting cork key spacers under woodwind key stop arms.
- **Pad and Cork Cement**. Order this from the Music retailer. It comes in small tubes for those impromptu repairs.
- **Cigarette Paper**. Use this tool on loose clarinet socket rings and sticky key pads. Remove the papers from their original package and put them in a plain envelope before storing them at school.
- **Small Latch Hook**. Reach those inaccessible needle springs. Purchase in the Sewing Department. The latch part is not a necessity, but the hook has a good shape for moving needle springs.
- **Rubbing Alcohol**. First aid section of the pharmacy for this metal joint cleaner.
- **Brass Mouthpiece Puller**. I have had two styles cross my workbench: The “Bobcat” style is compact and easy to use, and easily fits in a briefcase. They remove mouthpieces of any size, but the small screws may be difficult to turn in a really stuck situation. “Feree’s” has a style that looks like metal jaws and a hook, but they have good pulling power with a fine-threaded pull screw and a large handle. E-mail these companies or call your Music retailer.
- **Brass Mouthpiece Straightener**.
- **Tuning Slide Grease**.
- **Valve Oil**.
- **Key Oil**.
- **Sewing Machine Oiler** for key oil. Look for the small plastic bottle with the thin metal needle. Back to the Sewing Department.
- **Business Card** with contact information of the nearest shop.