YAMAHA Educator Series
WIND INSTRUMENTS

Christopher Zello

Clarinetist Christopher Zello maintains a diverse background working as a performer, educator and in arts administration. He has studied at the University of Cincinnati College-Conservatory of Music, DePaul University and the University of Wisconsin-Milwaukee Institute of Chamber Music; and spent summers at Tanglewood and Banff.

Currently he performs with the Fox Valley Symphony, teaches at Cardinal Stritch University, and works as the Assistant Manager of Present Music. Previously he worked in woodwind instrument repair at the Cascio-Interstate Music Superstore in New Berlin, Wisconsin.
Mr. Zello has been heard on live recital broadcasts for Wisconsin Public Radio and WFMT Chicago. On May 20, 2002, he will be heard on WFMT's Live from Studio One broadcast. Most recently, he released Contemplations, his first solo CD containing a new composition by composer Ronald Foster, entitled Contemplations for Solo Clarinet (1999), and six selections found on many state contest music lists.

Christopher Zello plays the YCL-CS, the YCL-SEA, and the YCL-681II clarinets.

"Mr. Bell, do you know why my clarinet won't play?"

By Christopher Zello

Although dropping a clarinet is responsible for most damage, there are other maintenance issues that will prevent an instrument from playing. Any repair technician will easily spot a problem and be able to repair it. But can you spot one before an important performance? Here we will walk through a trouble-shooting session and read several preventative maintenance suggestions.

I first suggest collecting information from the player. What seems to be the problem? How and when did you notice it? Can you show me? Although an answer may not provide you with the entire list of causes for a problem, it will be a start. Make it a goal to find as many problems leading to the trouble as possible.

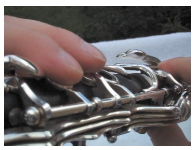
A visual inspection of the clarinet is the next part of diagnosing why the clarinet won't play. Upon first glance, I search for problems such as bent keys, missing pads, pads that have torn skins, missing key corks, broken tenon corks, springs that are broken or have come off their contact point, missing pivot screws & key rods, and even missing keys.

Inspect some seemingly unrelated parts crucial to the playability of the clarinet. What kind of condition are the reed, mouthpiece and ligature in? Remove the mouthpiece to inspect inside the bore for blockage. Does the problem still exist when you substitute a different reed, mouthpiece or ligature?

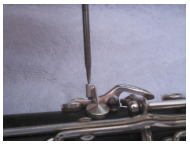
Pinpoint the area of the problem in several ways. By simply playing down to the lowest playable note, you will discover the area of the bore where the problem has occurred. Keep in mind that this is not 100% reliable, since a small leak in the upper joint (say on one of the top 2 side trill keys, near the barrel) can manifest itself inches lower (such as the right hand joint).

Before disassembling the clarinet, you should check three critical areas for trouble.

• The Bridge key mechanism



• The A + A-flat key mechanism



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• The Crow's foot

The alignment of the bridge key is one of the most troublesome for the beginning player. All too often the player will discover that when there is some type of problem, they might be able to pivot the alignment so that the new point of contact will "solve" this problem, making the clarinet play. I advise keeping the bridge key aligned properly, and fixing the problem: "treat the disease, not the symptoms." The next step is to check that the pivot screws, holding each part of this bridge key mechanism, are tight. With screws tightened, the key should operate independently and not bind.

Beyond just a visual inspection of the bridge key mechanism, you can check the adjustment of the bridge key by playing a 1+1 high B-flat (figure 1A), and lightly tap on the pad cup just below the first finger of the left hand. If you hear a timbre change in the pitch, then the bridge key is out of adjustment.

The A + A-flat mechanism will be damaged if the clarinet falls face downward on the keys. Generally the A-flat key will become smashed into the A key, throwing both keys off their pad seat connection to the tone hole.

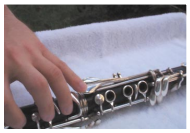
If the clarinet was not dropped or damaged in this way, you might have to simply loosen the adjustment screw, so that there is a little bit of play in the A key before it picks-up the A-flat key.

The Crow's foot is located below the low E and F# right hand pinky keys, and is the mechanism responsible for the proper functioning of the F, F#, and E pads.

You will need a feeler gauge to check the adjustment and levelness of the keys. I use ungummed cigarette paper (specifically OCB brand) cut into a triangular shape. With normal key closure pressure, check under the four corners around the pad with the small end of the feeler gauge. For keys that rest open, you should do this test with only slight pressure to seat the pad. Avoid any type of "gorilla grip," since young players do not play with a strong touch. Any pad that isn't touching consistently all around will need to be reseated.

It is easiest to start by checking the seating of the F# with your feeler gauge. Depressing this key should close the F pad.

Check that the F and E pads are closing at the same time. Try this with both E fingerings (Left pinky E, and Right pinky E lever). First check the F pad independently to make sure it is seating evenly. Then with either E fingering, check the seat around both pads. Note that you should feel the same amount of tension on both the F and E pads as you pull through the feeler gauge.



The alignment of the Crow's foot mechanism can be influenced by several items most easily left to repair by a technician. These items are not exclusive to missing key corks, the wrong thickness key cork, pad height or thickness, and general key alignment. A well-adjusted mechanism will play easily, allowing the note to "pop" when the player plays a middle register D to left hand B (fourth staff line, to the third) repeatedly.

Using your feeler gauge, check other pads in the area of the problem. You might discover several other pads that need reseating.

The last step as you continue your troubleshooting, having checked the areas mentioned above, is to disassemble the clarinet to check each joint for proper pad seating. While sealing the bottom of each joint with a finger or your hand, use your other hand to cover the keys and seal all the open tone holes. Inhale to create suction. A leak will allow you to inhale easily, indicating that a pad might not be seating on the tone hole. Exhale. Are there any keys that are normally sprung closed "blowing open" easily as you exhale? Those keys might lack enough spring tension.

A second person can help you during this process, if he or she could push down on the pad cups to determine which keys might be lacking spring tension.

Any number of problems can exist beyond those which this short guide discusses. I have intentionally not discussed how to make these repairs, so that you will seek the expertise of a professional woodwind repair technician. Despite any inconvenience of a clarinet player being without their clarinet while it is in for repair, it is better to have a different instrument that is unfamiliar than one which is not functioning properly.

Although no amount of preventative maintenance will help you when an accident happens, I have ten suggestions to keep your clarinet in top playing shape. Many of these will additionally minimize your maintenance costs.

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1. Use a handkerchief swab to clean out your clarinet after each use.

2. Swab your mouthpiece separately. Remember the facing is delicate, so handle it with care. Remove any "build up" on the exterior. To clean the interior, soak the mouthpiece in lukewarm or cold water (never warm or hot water, as this will discolor the exterior) and a mild dish detergent. If you keep it clean, you won't have to do this frequently - maybe once a year.

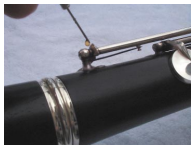
3. Keep your clarinet and clarinet case clean. Remove all unnecessary items from your case, including medals, coins and other objects which can tear pads or bend keys. Wipe the keys and body with a soft cloth. Use a fresh paintbrush to remove dust.

4. Keep your clarinet in a hard shell wood or plastic case. Many "light" cases lack sufficient padding to protect your clarinet if dropped or if you bump into something.

5. Protect your reeds when not in use by storing them in a reed wallet. Protect your reed and mouthpiece by using your mouthpiece cap when the clarinet is not in your mouth.

6. Do not stand your clarinet up on the bell. Use a peg or stand to hold it. Never rest your clarinet on a music stand!

7. Use light cork grease on your tenon corks. Don't use too much that it is visible or makes a mess, but enough that the instrument doesn't "grip" unreasonably upon assembly or disassembly.



8. Use a small drop of key oil every few months to keep noisy keys quieter. Using a needle point oiler, apply a small drop between the hinge tube and the post. Don't forget to do this on ligature screws as well.

9. Uniqueness of environment will influence the need to bore oil your wooden clarinet. Consult professional players or a repair technician for advice on whether or not you should use bore oil and how to apply it properly. Use of a humidifier in the case of a wooden clarinet is highly recommended in dry seasons and climates.

10. Most importantly, if it has been over 2 years or you can't remember the last time you had your clarinet examined by a woodwind repair technician, now is the time to take it in for a check-up. I recommend yearly check-ups after the initial inspection.

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