



“If you could see what I saw through your eyes” “Monster Harmonica Workbench” with Kinya Pollard

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In the August issue I wrote about the importance of superior illumination. For this October issue, our focus will be on magnification.

At my last Harmonica Maintenance Workshop a student asked me to explain why some of the reeds would “lock up” and render his harmonica unplayable. I responded by recalling the time a friend of mine called me to complain about a similar situation; only worse, because his harmonica would intermittently begin to click and clack as well. Even before I hung up the phone, I remembered pondering the possible causes for this mechanical anomaly – did the reed shift on it’s axis and hit the reed slot, or were Gremlins in there messing with the mechanics? We arranged to meet at my shop and set upon a complete examination of the instrument.

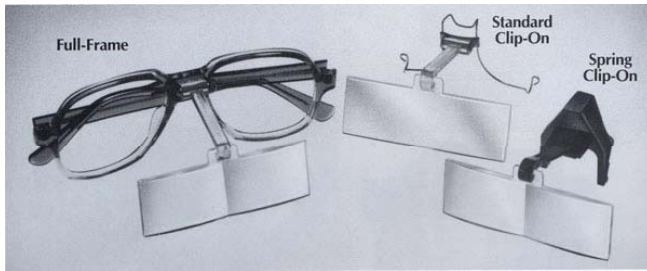
Removing the cover plates from his harmonica revealed two toothpicks rattling around! How in the *bleep* did these toothpicks get in there in the first place?! After twenty minutes of intense interrogation (and much kidding and laughter), we figured out that it was because he transports his harmonicas, unprotected, in his pants pockets. Consequently, his harmonica picked up lint, toothpicks, and who knows what else. (That nixed the Gremlin hypothesis.)

I told this story to the class to assure all my students that lint and debris are the major reasons that reeds lock up. To verify this assertion, I disassembled my student’s harmonica and examined the reeds under magnification. There it was, as large as a Buick Skylark a piece of lint that lodged in between the reed and reed plate!

Without magnification we were not able to see the problem. An important key to successful harmonica maintenance is to super-size your work.

There are numerous hands free magnification devices, tools, and instruments available.

Here are a few that I use at HARPSMITH Central:



Thanks to my Dentist (you're The Man, Doctor Mike!), I was introduced to Rand Vision Aids. These phenomenal magnifiers are available in numerous configurations and magnifying power:

Working Distance

20"
14"
10"
8"
6"
4"

Power | Enlarges your Work by a Factor:

1.5x
1.75x
2.00x
2.25x
2.75x
3.50x

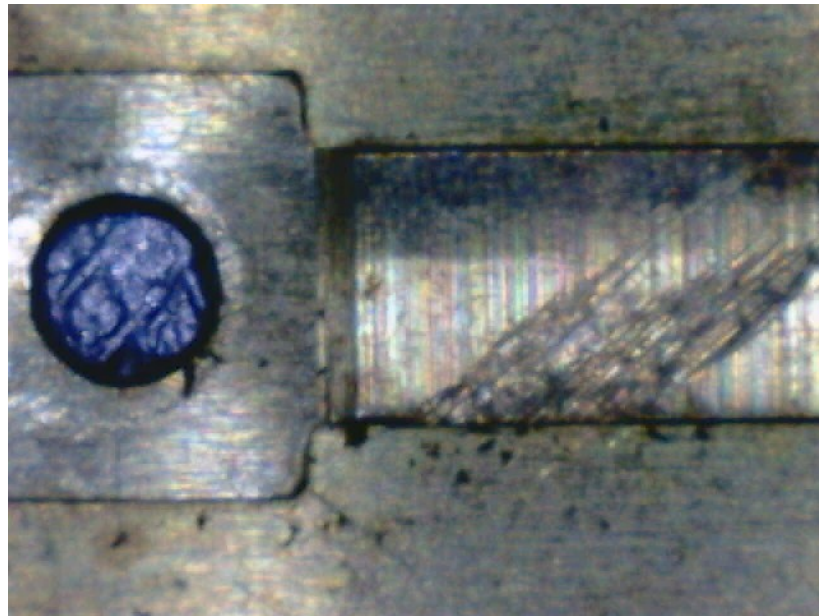
Lighted Magnifiers have a large 5" circumference lens to magnify your work 175% and provide exceptional 100+ fc (foot candles) shadow free illumination. This affordable device utilizes an energy efficient cool temperature (stay away from hot incandescent types!) 22watt Circline Fluorescent lamp. For ultimate "eye-friendly" viewing, I recommend replacing the standard "Cool White" #FC8T9 | 60CRI lamp with the color corrective #FC8T9/KB | 82CRI Circline lamp.





The ProScope is a digital USB (computer based) microscope I use when maximum magnification is required.

This image at 50x magnification verifies the cause of a clicking reed. The person on the tuning bench was a little too aggressive with their tuning file (chisel) and deformed the edge of the reed. This resulted in a reed that would snag against the reed slot as it vibrated.





Looking directly at the leading edge of a Hohner Marine Band blow reed plate, this image shows the results of a botched 3 blow reed replacement procedure. The reed plate was mangled during removal of the reed, and will require significant Harpsmith'n to make flat and true again. Ignoring this correction will result in loss of compression and minimize the player's ability to nail that 3 draw half step bend!

For those readers wondering why anyone would want to waste their time on this project, consider the original owner of this Bb Hohner Marine Band was the late, great, William Clarke. The new owner already feels lousy enough so I will not reveal his identity.

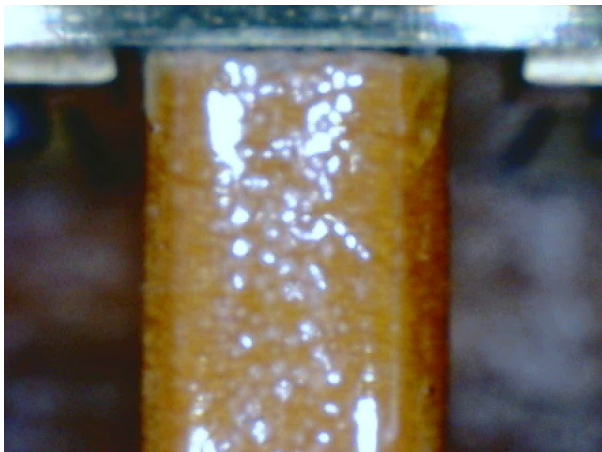
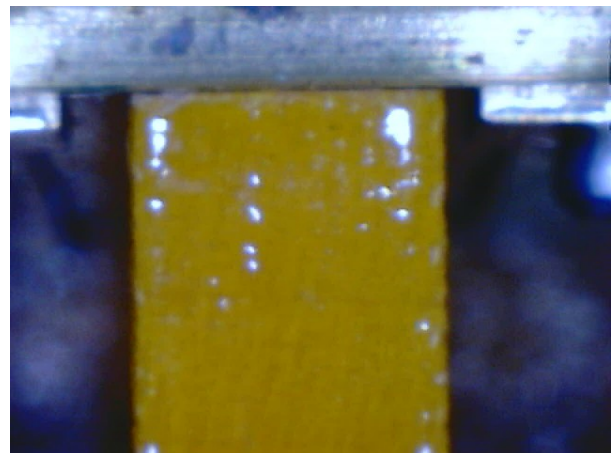
This slide shows a piece of hair (and un-even finish) that was varnished onto William Clarke's wooden comb. The rule of thumb is "the cleaner the mating surfaces, the better your harmonica will play".





No this is not a 2x4 stud, but rather a magnified (50x) view of the #2 slot (tine) of a Hohner Marine Band wooden comb. Can you see the striations where air leakage occurs?

Here is a screen shot of the Hohner Marine Band looking directly upon the mouthpiece (between reeds #2~3). The horizontal bar across the top is the blow reed plate with a side view of two reeds and rivets. The vertical yellow colored column is the tine from the wooden comb. Notice the sharp vertical edges? This is why playing out of the box Marine Bands can be painful on the lips and tongue ... ouch!



Shown is the Hohner Marine Band 2005 Deluxe. The vertical edges have been rounded off and varnished for swelling prevention and playing comfort.

This concludes our two part article on Illumination and Magnification. Don't be surprised with the profound positive impact it will have on your work!

Stay tuned!

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