



Reeding Aloud

“Monster Harmonica Workbench” with Kinya Pollard,
www.harmonicasesions.com

June 2004

Welcome back Harmonica “Gear-heads.”

My last article focused on reed gapping and curling. Although difficult, once mastered these techniques will reward you with “custom” harmonicas that will be perfectly matched to your playing style.

I decided to continue my attention on reeds in this issue by demonstrating a proven reed replacement technique. I mastered this method for practical reasons. The thought of discarding a set of customized reed plates, simply because of one or two blown (damaged) reeds seemed ludicrous to me. In fact, because my reed replacement strategy eliminated the reed rivet by threading the reed plate, future replacements for the same reed slot became as simple as bolting on another reed. Did I pique your interest? Let’s proceed ...

Anatomy of Reed Replacement

- Refers to the removal and replacement of a damaged reed with a good reed
- A damaged reed is one that goes flat and cannot be re-tuned, or does not “hold” it’s tuning (good for maybe one song, before it goes flat again). The most commonly affected reeds are 4 through 7, both on the blow and draw sides.
- Reeds are constructed out of spring (tempered) metal, and takes considerable abuse (i.e. excessive volume of air, temperature variances, etc.). Inevitably, the reed will fatigue and develop a hairline fracture, almost always at the heel (base) of the reed.
- See for yourself: with the cover plates removed, lift the damaged reed with your Lee Oskar reed offset tool about ¼ of an inch out of the slot, then release it. You’ll probably find the reed stall while traveling back through the slot. Help it along by gently pushing it through the slot with the pick end of your tool, and the reed will most likely snap off at the heel of the reed.

Tools and Materials

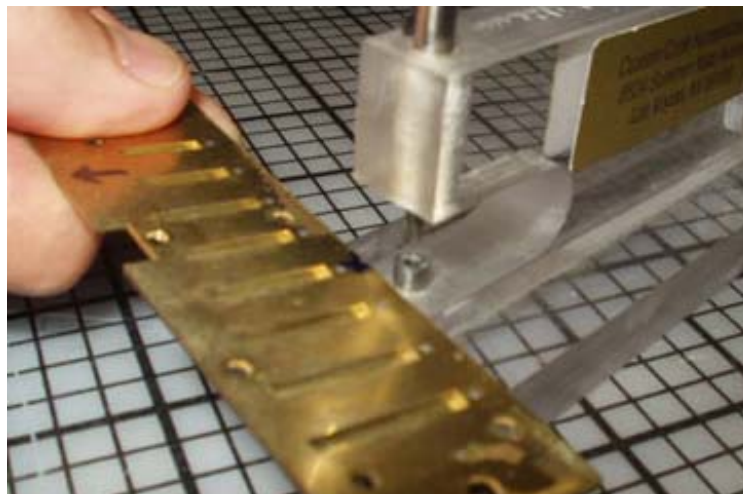
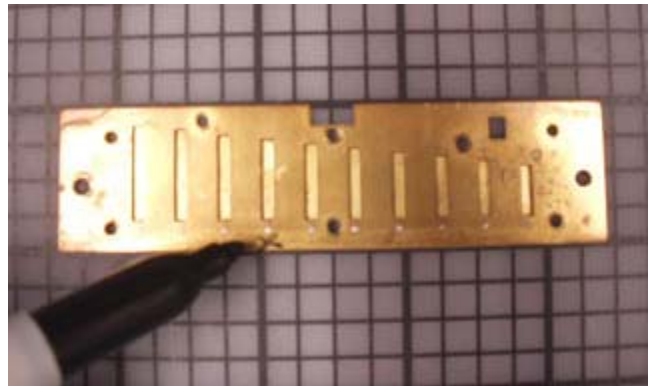
Use your tool kit from the last sessions, and include the following:

- Reed knockout/replacement tool, sources:
 - Custom Craft Harmonicas (<http://home.earthlink.net/~romel/>)
 - F. & R. Farrell Company (<http://www.frfarrell.com/kotool.html>)
- The following tools and materials are available from www.micromark.com
 - Ball peen hammer (#22119)
 - Toolmaker’s Mallet (#81523)
 - Rat tail file from Micro size file set (#50323)
 - Tap 0-80 (#14145T)
 - Ratchet Drive Tap Wrench (#15126) or standard Tap Wrench (#20130)
 - 4” Flush End Cutter (#82828)

- Miniature Brass Bolts 0-80 x 1/8" (#70157)
- Miniature Brass Washers 0 (#70206)
- Optional: Dremel Rotary Tool with cut-off wheel
- Donor Harmonica (you'll never throw away a harmonica after this session) by the same manufacture and key, but not necessarily in the same model. For example, hand made Hohner Marine Band, Special 20, and Golden Melody have identical reeds. Hohner MS (Modular System) reeds are interchangeable between models; for example, Big River and ProHarp.
- I recently spoke to Rick Epping from Hohner, and the Service Center located in Virginia will be offering new replacement reeds (4 ~ 7) per dozen, per model. Stay tuned for more information on this ...

Procedure

1. On the "host" harmonica, remove cover plates.
2. Remove reed plates from comb.
3. Mark the area near the flush side of the rivet to identify the location of the *damaged* reed; e.g. 4 blow on a C harmonica.
4. Repeat the above procedure on the "donor" harmonica, with exception of identifying the location of the *good* reed, not another damaged reed! *Tip: Did you know that the same size reed, in the same pitch (note) can be located in another harmonica in a different key? For example, the pitch for the 4 blow reed on a C diatonic harmonica is C. Let's suppose you do not have a C donor harmonica; however, you have a Bb donor harmonica. Simply remove the 4 "draw" reed, because the pitch for this reed is an identical C! Refer to Mel Bay's Harmonica Wall Chart by David Barrett for quick reference (#MB20291).*
5. With the "host" reed plated, place the raised side of the rivet into the "open diameter" die of your Reed Knockout Tool. Carefully align the "pointed" punch over the center of the flush side of the rivet, then with your Small Peen Hammer lightly tap the rivet out of the reed. Throw this damaged reed away (I've learned this the hard way by reinstalling bad reeds back into the reed plate!).



- Repeat step 5 with the “donor” harmonica and prepare the good reed for the 0-80 bolt, by carefully reaming out the hole left behind by the discarded rivet, with the Micro-Size “rat tail” file.



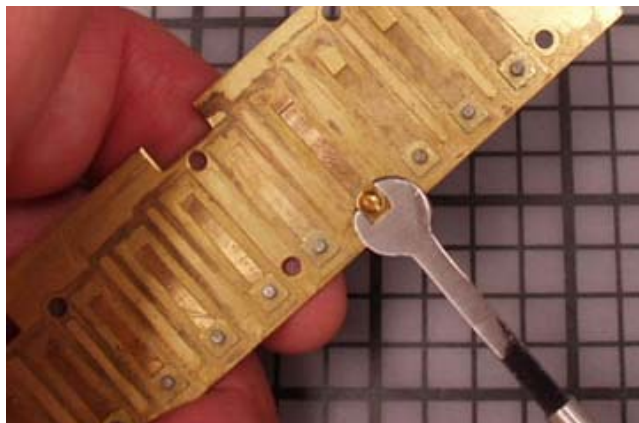
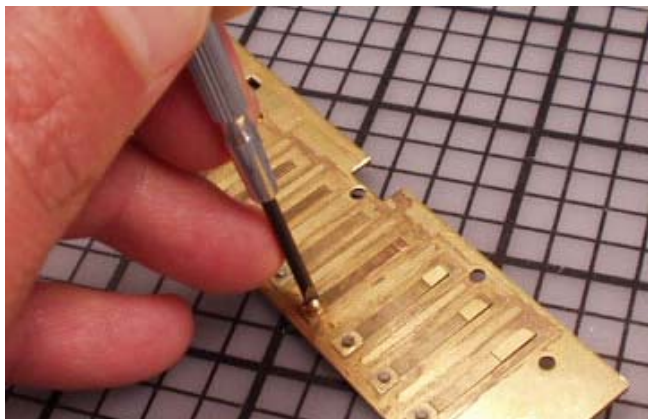
- The above procedure will distort the heel (base) of the reed ever so slightly. It is imperative to restore an absolutely flat profile before installing the reed onto the “host” reed plate. To remedy this problem, place the reed onto a hard “flat” surface, preferably an anvil and gently tap the heel of the reed a couple of times with the Toolmaker’s Mallet.



- Using your Ratchet Tap Holder and #0-80 Tap, carefully (and straight!) thread the hole in the reed plate that was left behind by the discarded rivet. Similar to the reed, the matching surface of the reed plate must be absolutely flat. Place onto a hard flat surface and lightly tap flat. This is also a good opportunity to clean the area of any crud or debris.



9. Now returning to the good reed: slide a #0 Washer over the #0-80 Bolt, then carefully insert this combination into the heel of the reed (pad side up, flat side of reed down). Align over threaded hole in reed plate, then slowly and snugly screw into place. The reed will rotate slightly to the right of the slot upon tightening. Hold the reed plate up to the light, and with your reed wrench adjust the reed in the slot so that you can see an even amount of light around the sides and top of the reed. “Plink” the reed a few times to ensure clearance, otherwise your harmonica will play with an annoying metallic clicking noise.



10. Turn the reed plate upside down and cut off the excess stud with the 4” Flush End Cutter. *For wooden or metal combs, it will be necessary to smooth the stud absolutely flush with the surface of the reed plate, otherwise this “hump” will be problematic for an air tight fit. A Dremel tool with a cut-off wheel works well (be careful not to gouge the reed plate surface).*



11. Refer to my last two issues: “Stop those dogs from howling! Part 2” for tuning techniques and “The Tao of Harmonica Customizing” for gapping and curling techniques.

Congratulations! Your out of the box harmonica has been transformed into a “real” instrument that will give you years of enjoyment.

“Sometimes when I consider what tremendous consequences come from little things ... I am tempted to think ... There are no little things”.

-Bruce Barton

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The “Harpsmith”