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## Harmonica Workbench: Go ahead, take the PLUNZ!

7 June 2011 2,284 views 3 Comments



with **Kinya Pollard**

Long time readers know I have an insatiable appetite for technology and techniques for improving the tone and playability of the diatonic harmonica.

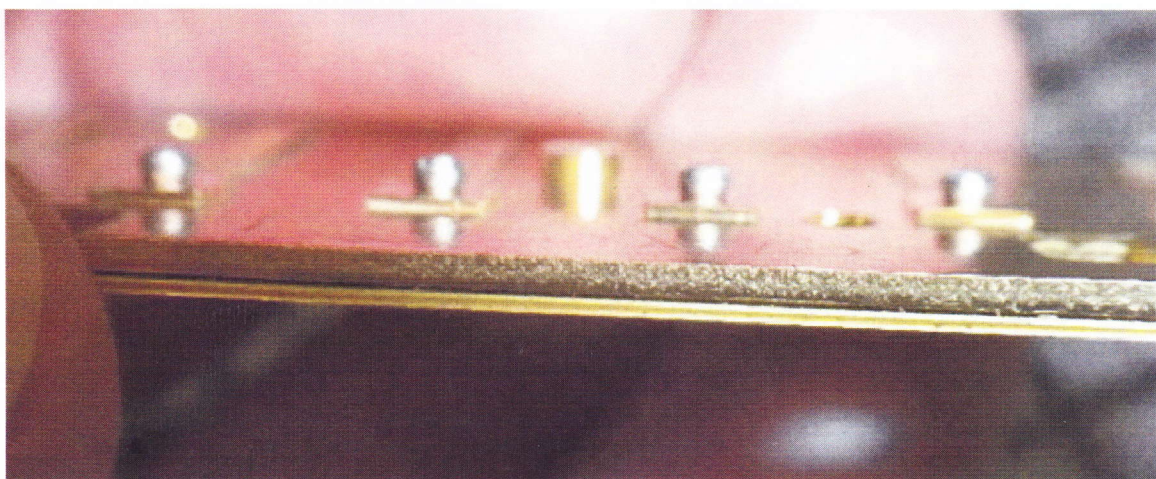
As it turns out, I actually had on my list for future articles to build a double reed plate harmonica. So, when Mauro "Plunz" Pionzio, from Plunz Special Harp invited me to review his new "Forty Plus" double reed plate retrofit kit for the Hohner Special 20 (yes, I'm still in love with the SP20 after all these years), it was a no brainer for me to accept his invitation.



For harmonica players not familiar with the concept of thicker reed plates, it is a design strategy that is intended to provide the reeds with **more power**. This is accomplished by enabling the existing (stock) harmonica reeds to swing further down into the chamber (slot). More air passes across the reed increasing volume and response. As always, proper offsetting (gapping) is essential to maximize the benefits—Bernoulli Effect anyone?

### Initial Impressions

Soon after removing the PLUNZ *Forty Plus* double reed plate kit (Key of C) from its Italian labeled package, my first thought was that it was not accurate to call this kit “double reed plate.” Double conjures up the images of two reed plates stacked on top of one another. This, it was not.



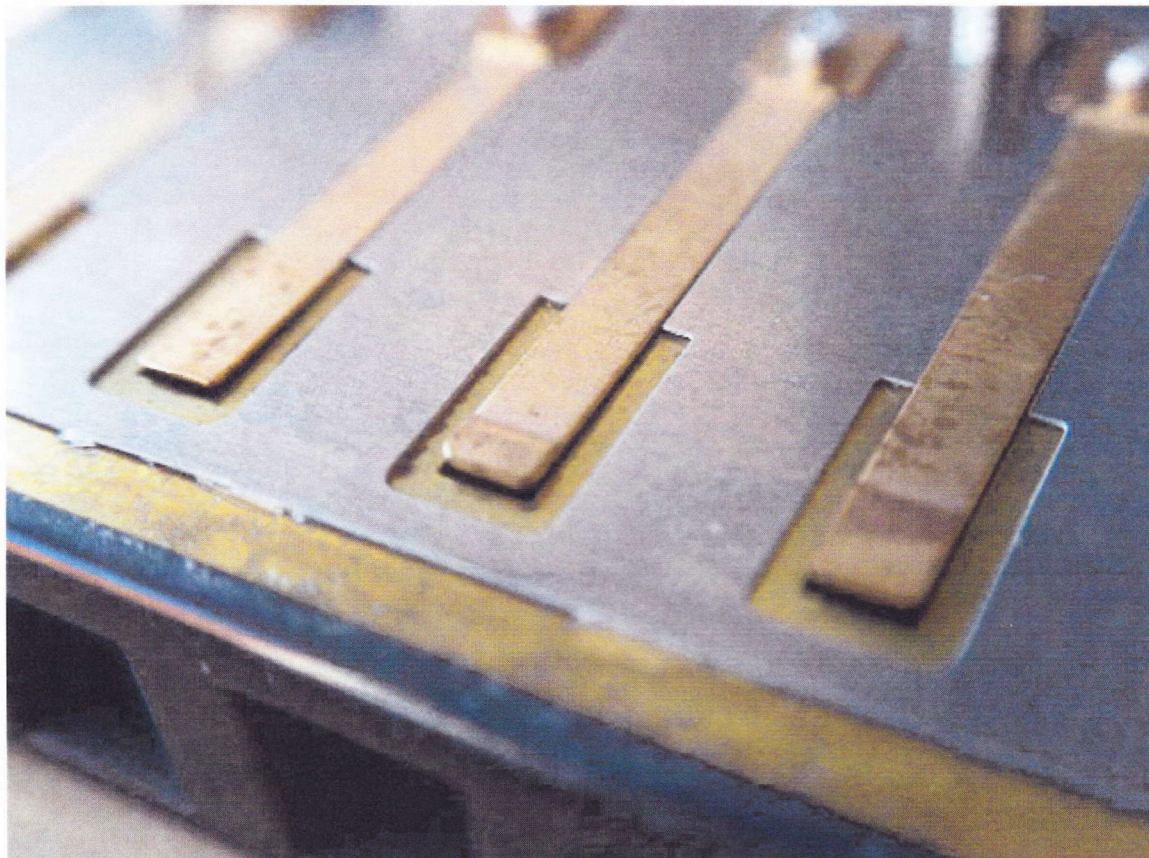
Hohner Special 20 reed plates are .90mm thick.

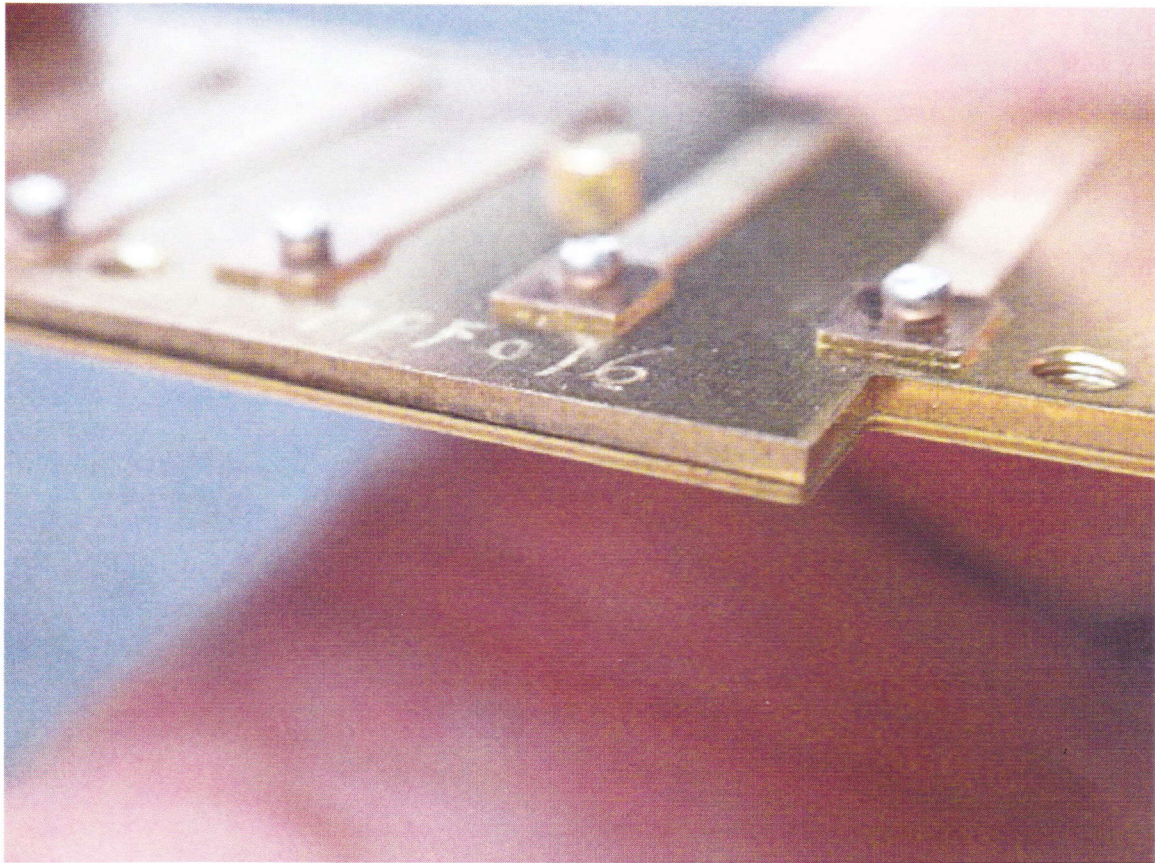


With the PLUNZ perfectly machined and fitted over the existing reed plates, the combined thickness totalled 1.27mm. This meant the PLUNZ was .37mm thinner than the original reed plate, not twice the thickness as one would expect. (1.27mm – .90mm)

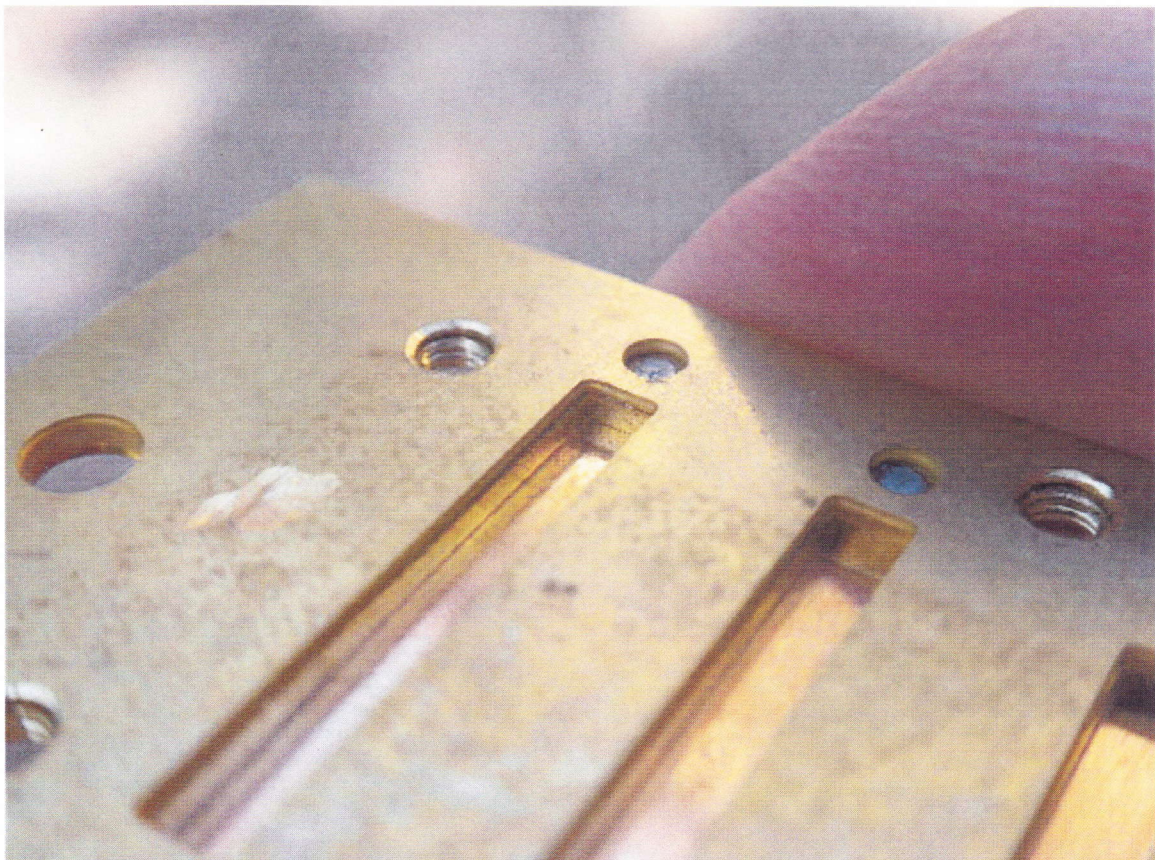


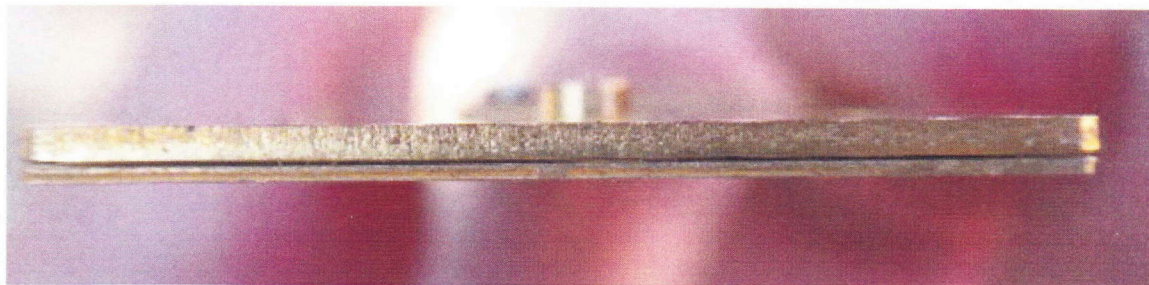
Immediately, my mind started racing for a more appropriate word to describe what I was seeing. Images of the TurboHarp liners popped into my head. But unlike the brilliantly engineered TurboHarp liners ([www.turboharp.com](http://www.turboharp.com))—designed to decrease the air gap surrounding the first 70% of the reed (Think Sizing; reference: April-May edition)—the PLUNZ strategy was to increase the depth that the reed would travel. I would be comfortable, simply calling this product, the “PLUNZ Reed Plate Retrofit Kit”—drop the reference to double.





Look carefully into the reed plate slot and you will see the depth of the reed slot increased by the .37mm thickness of the PLUNZ kit.





### In a letter written to me...

Mauro explained the methodology behind the evolution of his innovation, "Some years ago I became intrigued by an article published on [www.harp-l.org](http://www.harp-l.org), about double reed plate harmonicas, so I started to customize a Hohner Marine Band Classic 1896 applying this modification. The results were mixed. On the positive side, there was an increase in volume, as well as improvements in bending and overblowing notes without gap modification. On the negative side, doubling the reed plates added weight to the harmonica, and the additional 1.8mm thickness made it difficult to properly align two layers of reed plate slots.

Taking into account that some harmonica models, such as, Hohner Meisterklasse and Crosssharp, Hering Vintage were built with 1.05mm and 1.20 thick reed plates, I attempted to make and test brass plates ranging from .2mm to .7mm. After numerous trials, I found the best choice was .4mm (Harpsmith .37mm), resulting in a combined total thickness measuring 1.3mm (Harpsmith 1.27mm). This applied for Hohner Marine Band, Special20, and Golden Melody reed plates.

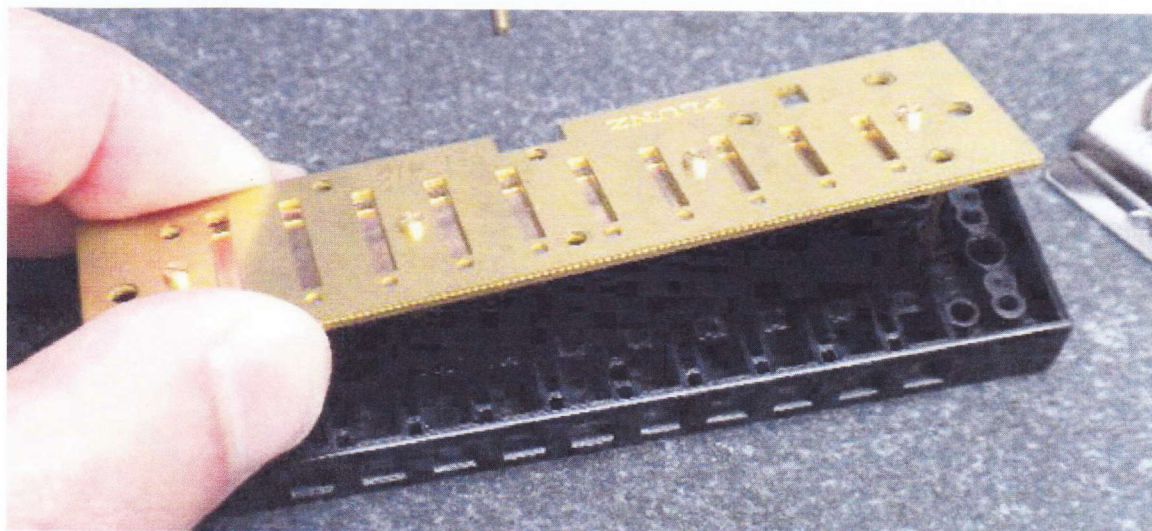
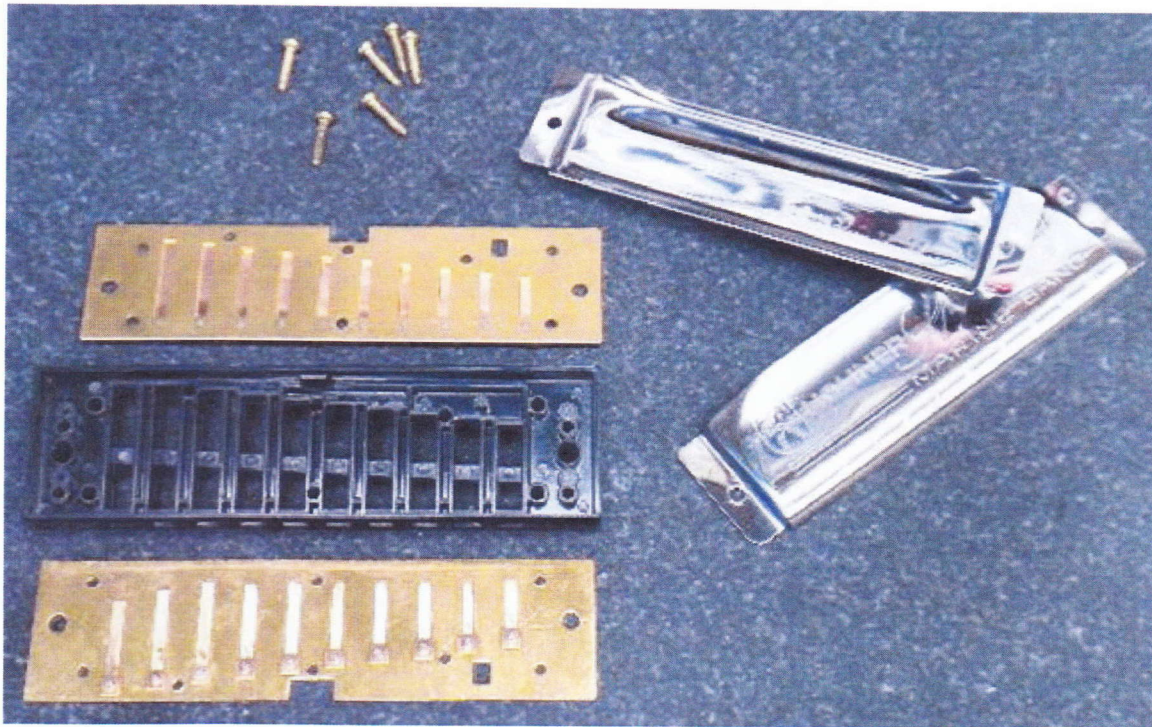
The PLUNZ reed plate kit is supplied with metric screws and can be assembled onto the reed plates with slight modifications. It can be also easily disassembled and assembled again. My goal is to create a product that can be approachable to everyone and that can give the chance to get a high quality instrument."



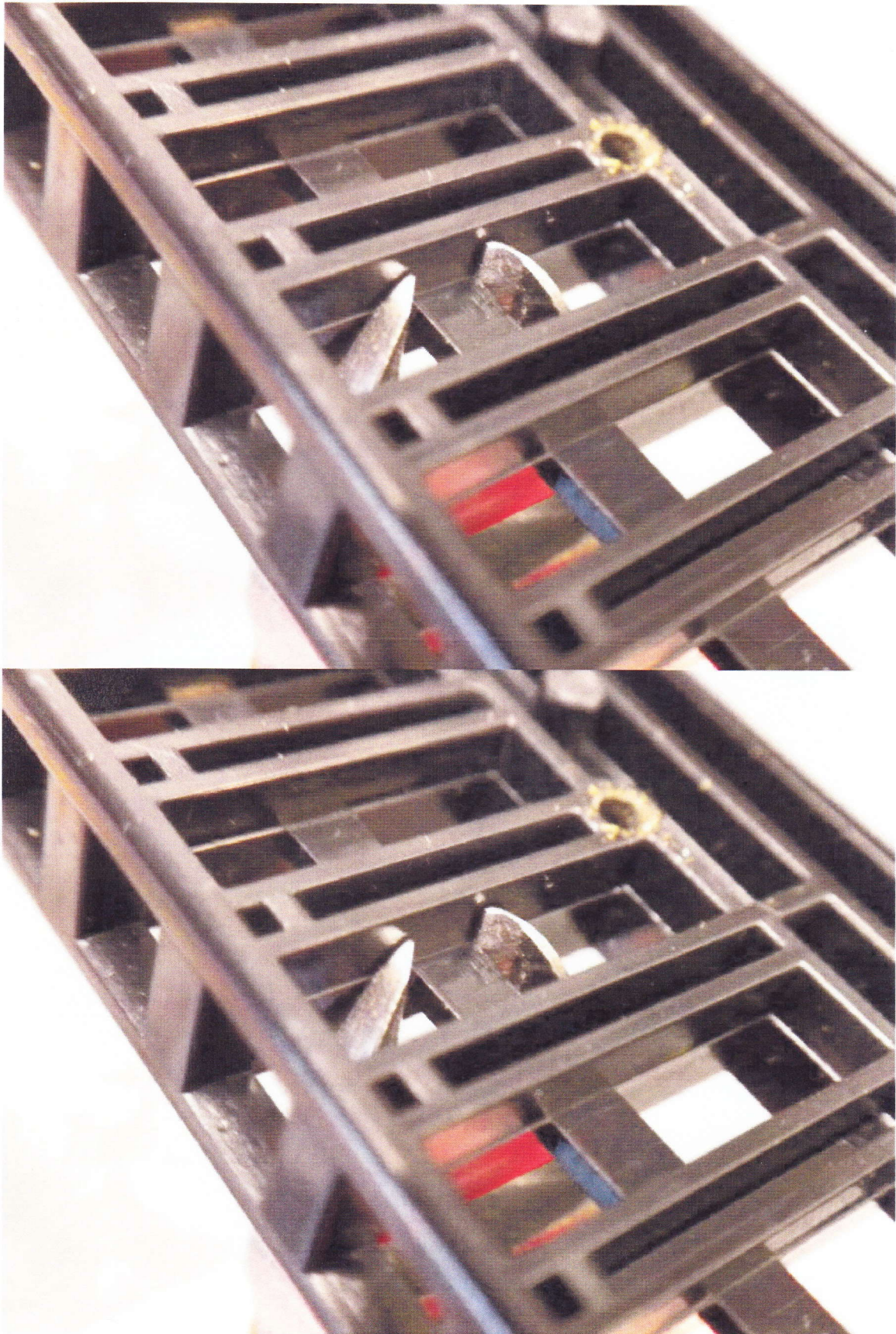
### Taking it to the Bench

Drawing on the reed plate—without the comb—being able to play musical sounding *bent* notes with ease (think Winslow Yerxa's Discreet comb principles), was my indication that the PLUNZ

Reed Plate Retrofit Kit was going to be a fun ride. When I recognized the high quality machining and alignment of the PLUNZ kit, I became convinced that the completed harmonica will be the one I take on gigs. This was going to be good. First, I disassembled a Hohner Special 20 in the usual manner. Next, I decided that it would be a shame to miss an opportunity to improve the comb for playing comfort and ease of future maintenance.

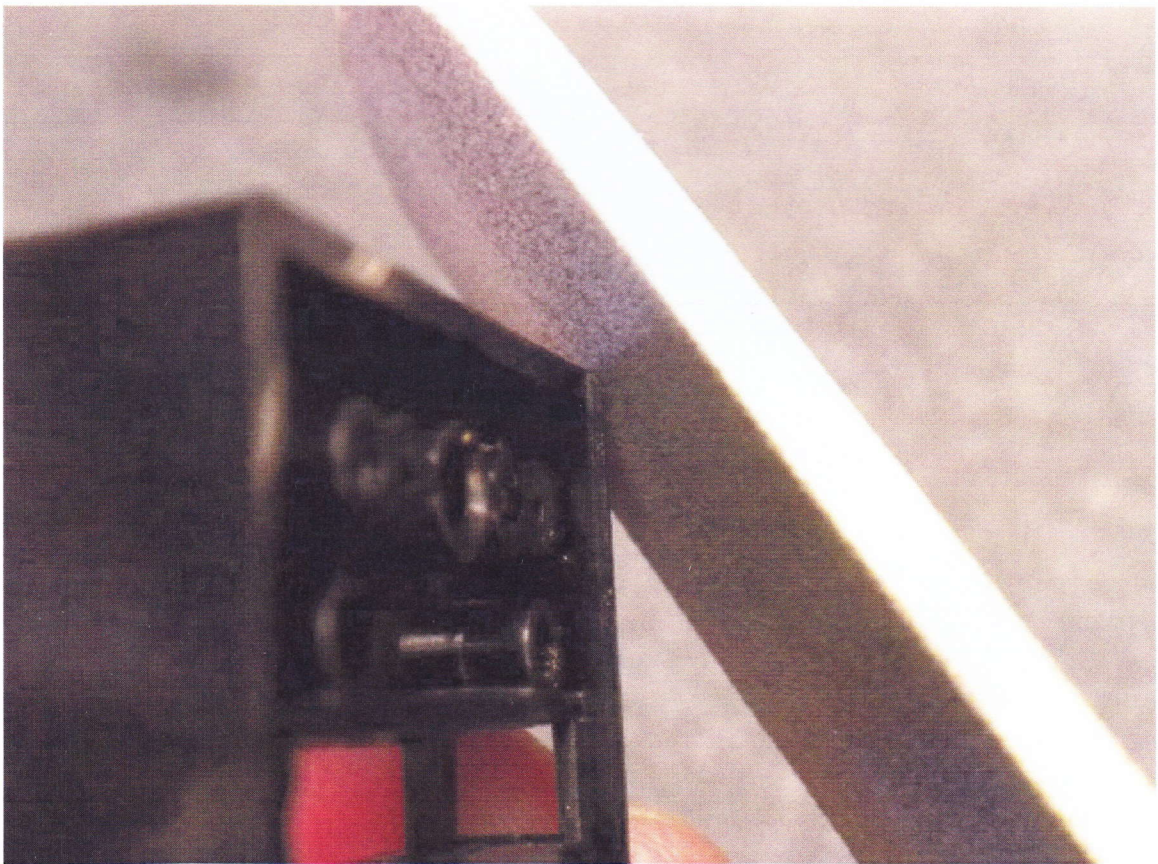
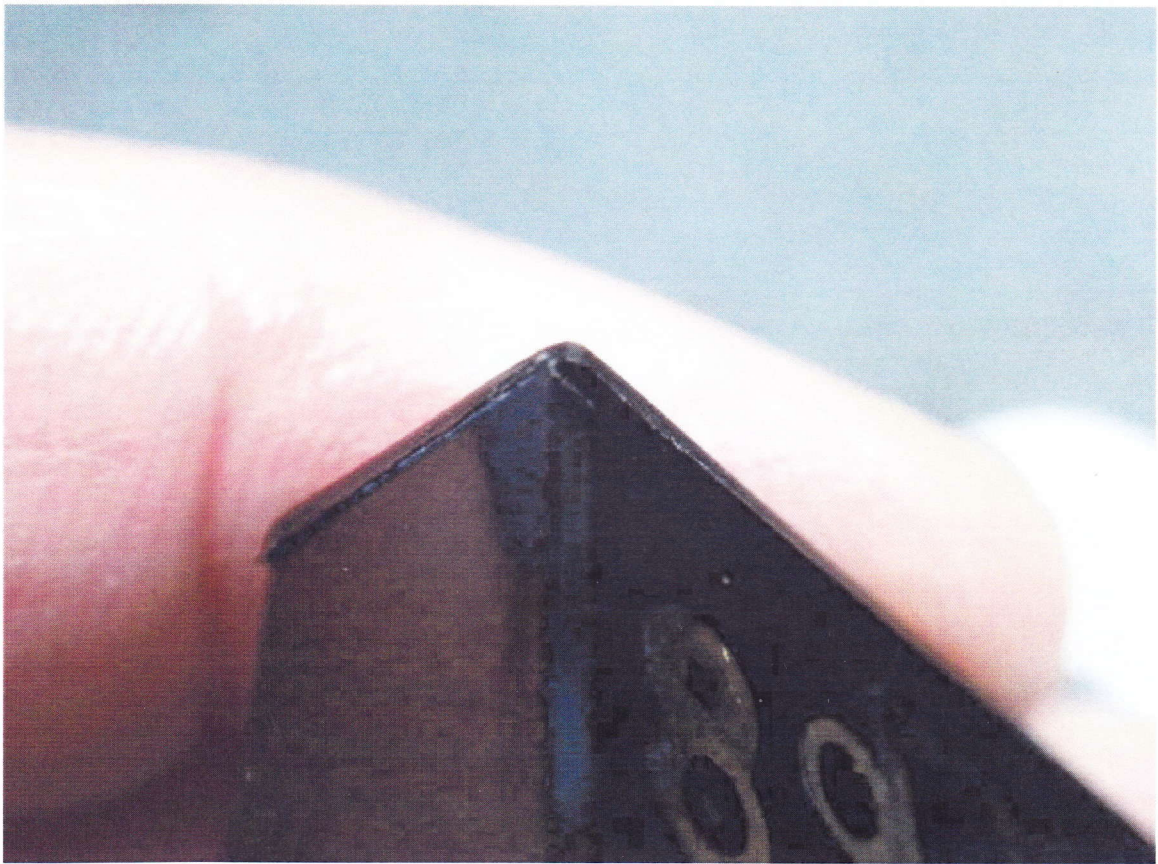


The comb mods were quick and easy to do. With a sprue cutter (micromark.com) I removed all ten sprues from the comb chambers. This will expedite reed service some day.



For playing comfort, I rounded off all the sharp corners from the comb with a double-sided manicurist's shaping and polishing board.



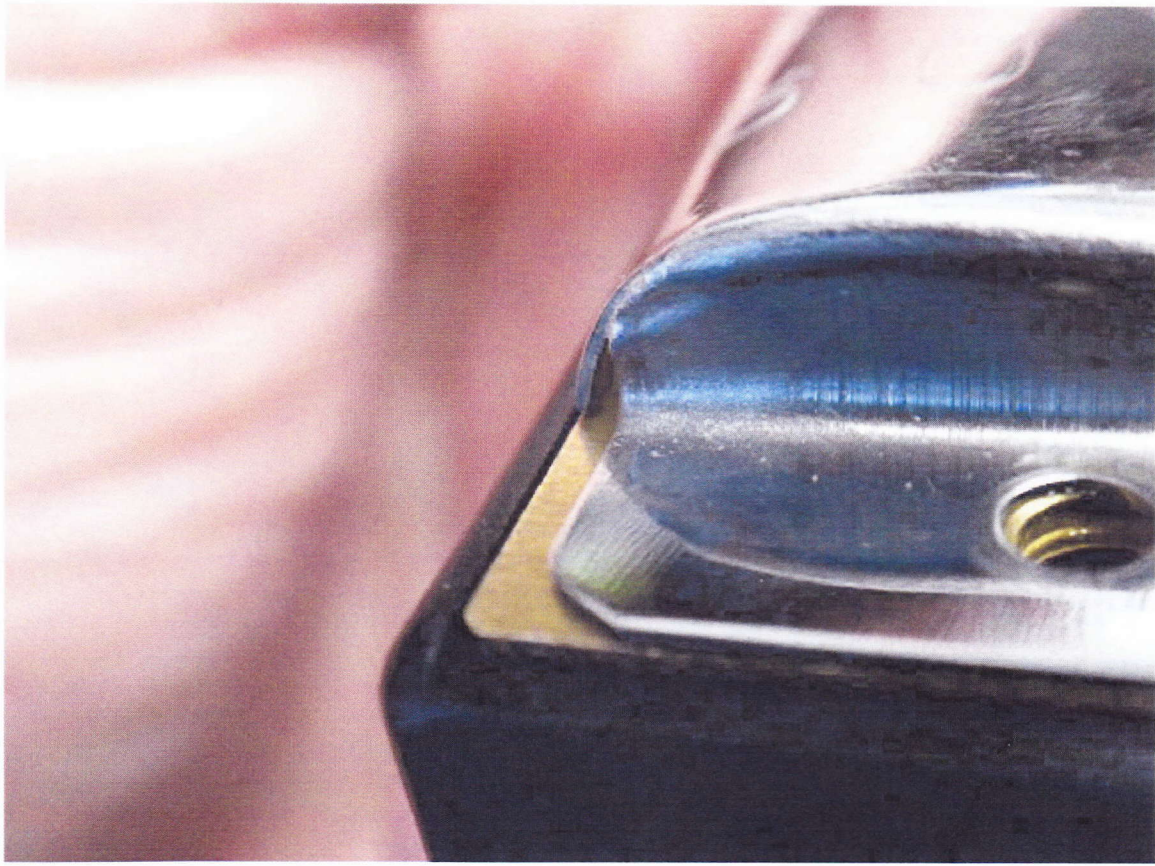




I secured the PLUNZ reed plates onto the modified comb, and attached the cover plates. The leading edge of the SP20 cover plates are designed to press up against the inner ledge of the comb.



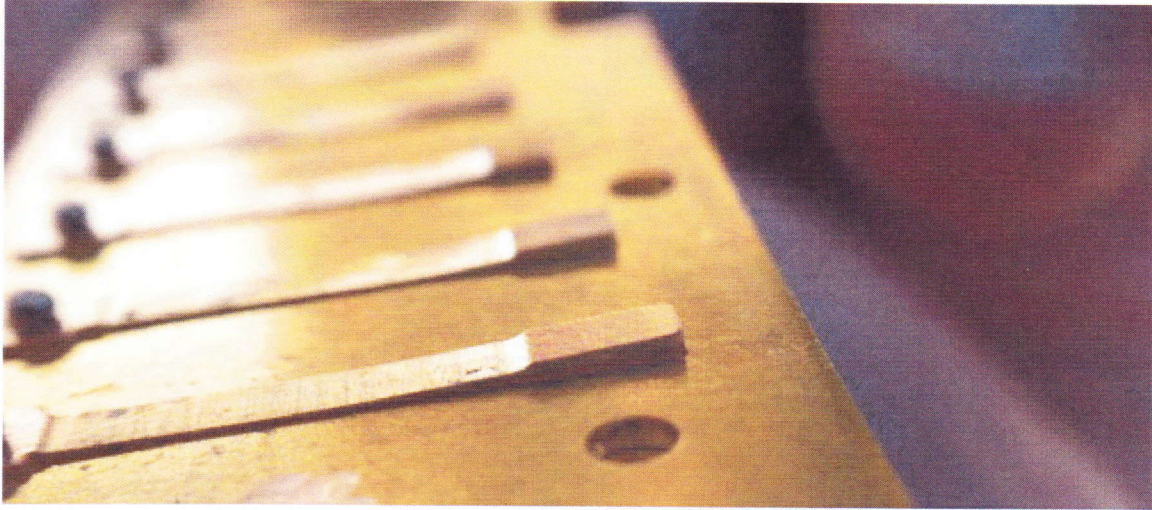
However, with the increased heights of both the blow and draw reed plates, the leading edge of the cover plates will now sit "on-top." I originally thought this would be a problem regarding air leakage, but was pleased to discover it was a non-issue.



From a side view comparing a stock Special 20 with the PLUNZ harmonica, the additional thickness was also a non-issue for my playing comfort.



After playing a few arpeggios and chords I was immediately impressed with the skillful job PLUNZ did on the tuning, but wondered "where the anticipated increase in volume and responsiveness was hiding"? It took only a few moments to identify those reeds that had exaggerated curvatures, which resulted in a loss of compression (excessive offsets/gapping). After I adjusted the reed profiles to my playing preference, I *found* the increased volume and responsiveness that I was looking for—all without sizing a single reed plate slot!



### **Overall Impressions**

For this review, a set of PLUNZ “Forty Plus” reed plates in the key of C were selected.

An unexpected benefit of the PLUNZ reed plate retrofit kit, for this workbench overblower (I’ve yet to attempt on the bandstand), I was surprised how solid and musical the 5 (F#) and 6 (Bb) overblow notes played. Nice.

Any harp-tech and/or player who has ever contemplated building and playing a harmonica with thick reed plates, but is intimidated with the processes, look no further. The PLUNZ solution will be well worth your time and money. You won’t be disappointed.

### **Down Side?**

Well, theoretically speaking (I don’t have empirical data), the thicker plates and “super reeds” could lead to greater reed stress and earlier breakage. We shall see.

### **Celebrity Hands**