Simple Anti-Tone Rings for the Banjo

David Politzer*

California Institute of Technology

(Dated: March 8, 2015)

Readily available items serve as alternatives for taming the sound of the modern, mylar, steel string banjo at the level of the tone ring. In particular, the common $1/4''$ rolled brass ring can be swapped out in minutes for pennies, replaced with simple hardware store items. Favorites featured here are the "Electric," "Surgical," and "McGhee" models.

*politzer@caltech.edu; `http://www.its.caltech.edu/~politzer`; 452-48 Caltech, Pasadena CA 91125

Simple Anti-Tone Rings for the Banjo

Many banjo players at some point find themselves with an instrument that doesn't sound like what they want. At least one category of such yearnings is for an older sound from a modern banjo. Skin heads are sought to replace mylar. Gut or synthetic strings replace steel. Sponge or old socks are stuffed at some point under the edge of the head. Another common theme is just the urge to try something different.

While trying to modify a banjo for an acoustics experiment, I stumbled on a different category of modifications. One I'd not seen or heard of before. My goal was to reduce the reflection of waves in the head off the rim and back toward the bridge. I wasn't concerned about "sound." In the process, I realized that there is a whole category of "mods" that I'd never considered. They're inexpensive, easy, and dramatic.

The surprise was that one can replace a $1/4''$ rolled brass ring with anything flexible that's the right thickness and length. There's no issue of it being rigid, being round, or securely joined at its ends. Under the down-pressure of the tightened head, it just sits there and does its job, absorbing and reflecting head waves with its own characteristic frequency dependence. I tried several different hardware store items that are sold by the foot. I cut them carefully to length, leaving them as long as possible but fitting smoothly and snugly into the head. And that works.

FIG. 1. A Goodtime rim, cut down to take a $1/4''$ ring, with rubber tubing instead

Note that attention must be paid to height. The relation of the fingerboard to the rim is

generally fixed and a certain string clearance above the neck and above the head is desired. So one can't stray very far from the initial design in terms of the vertical dimension of the ring. Fortunately, there are a great many choices in the hardware store.

To damp the head, I ended up with (real) rubber tubing with 1/4″ ID and with 0.19″ diameter screening spline as stuffing down its center. That's in FIG. 1.

However, "Electric" tone rings were certainly another possibility. Use insulated electric cord. I went with two conductor, 18 gauge because the OD was 1/4″.

My sentimental favorite, high on *panache,* I call the "McGhee," in honor of Windy Bill. It's just a piece of twisted hemp rope. Bill learned the hard way to lay his dallies, which is all you need do inside the rim.

FIG. 2. Electric, Surgical, and McGhee tone rings, plus a firm plastic version, sit atop a hydrant.

Don't have a 1/4″ tone ring to being with? Slit rubber tubing lengthwise and lay it over the top of the existing ring or rim. The extra height might be so small as to not need any reduction in bridge height or adjustment of neck.