

Hi-Tech Sounding Bowl

by Bob Heltman, CMW, AAW © 1-2010

Ireland's National Treasure, namely woodturner Mr. Tobias Kaye, (www.tobias-kaye.co.uk/welcome.htm) is the real sounding bowl genius. HIS bowls have tuned strings across the rims. Plucking the strings gives mellow sounds and the bowls are used internationally in music therapy. (I made one and immediately felt better after plucking its one string.)

The type of Sounding Bowl described herein is entirely different, allows for some good fun, and gives folks more clever than I a chance to improve on what I did. My approach uses little electronic gadgets that make sound when clicked ON. The idea came from the Speak To Me Catalog (www.speaktomecatalog.com) which is full of toys and



devices that make noise. The above item, Figure 1, takes a 10 second recording, measures 3" wide by 1/4" thick and would have been ideal for my use, but I couldn't come up with a method for automatically clicking on the little red button when the bowl is lifted. Darn! And I had a clever short voice message to startle anybody lifting my bowl. The plan was to embed this device in a recess under the bowl's bottom side.

Stymied with this gadget, I next remembered talking greeting cards. A trip to the store, and some fun time tweaking various talking greeting cards, led me to choose a loud one making strange music. Fig-



Figure #2 shows the front of this card; I already started



to cut off the front. Figure #3 discloses the electronics inside such cards. A small strip of (white) plastic slides back and forth to open or close the electronic circuit. Figuring this might work, I carefully cut around the electronics, leaving all still glued to the

light cardboard back of the greeting card. These electronics measured about 3 1/2" long and 1/4" depth. This determined the size of the bowl's bottom and amount of inset. Figure #4 is a close-up



and the white plastic tab has been cut from the card and slid under the flat spring contact which closes the circuit. As I pondered how to make an auto-



matic switch to close the circuit and cause sound, I next applied 2 sided tape to the bowl's bottom inset (Figure #5), pencilled in where the identification would be wood burned, and laid out the 4 feet with red lines showing where I would remove 4 long portions of the bowl's rim between the feet to better allow sound to be heard.

The next step was to remove the red marked parts

of the rim. What eventually came to mind was to use my side-grinder. Figure #7 shows a rubber



stabilizing pad, as used with routers, laid over the bed of my Nova DVR lathe, the bowl, and the side-grinder with a course sanding disc. Nearby was the dust collecting vent! This approach worked very well (a bit to my pleasant surprise) and at a manageable speed. I started where the red line met a foot and drew the sander toward me about half way to the next foot. Then I repositioned the bowl and sanded back toward the center of the same red line from the other foot. A wood rasp made the removed areas clean and even, followed by a bit of hand sanding.



Figure #8 shows the wood burning completed, and the sound system set on the sticky side of the 2 sided tape. I had lined out where the electronics would sit, cut away unneeded tape, removed the

backing, and simply set the electronics in place.

I was beginning to see that I needed an On-Off device that would only close the circuit when the bowl was lifted, giving a fun surprise to whomever moved the bowl. A shallow "V" device, hinged near the center was needed and I'd have to screw the hinge area to the wood bottom. This meant double checking the thickness of the wood!



Figure #9 shows my depth measuring system; a long horizontal piece of wood with a hole for a 1/4" dowel held in place with a flat bent spring. First the gauge is held across the rims, dead center, and the dowel pushed down to touch the inner bottom of the bowl. Then the gauge is moved with the dowel just outside the bowl, which must sit on a flat surface. A weight (other smaller bowl in this



case) holds the gauge from falling over, and a ruler is placed as shown.

Figure #10 looks across the edge of the table and discloses that I have a little more than 1/2" of wood between inner bottom and bottoms of the feet. Given that the recess for the electronics already is inset 1/4" This means screws for the hinge have to be no more than just a little more than 1/4 long!



Figure #11 shows 1/2" brass screws (from the miscellaneous screw bin every woodturner must have), a palm drill with small diameter drill, and a piece of flat copper strapping cut from a water pipe suspending strap (which all the better woodturners have, or something much like it).

At the contact end of the copper strip, and after much experimenting and associated disgruntlement, I soldered on a spray of copper wire strands from an extra lamp cord. These little strands of wire would brush against the open circuit halves, allowing the small battery current to flow, when the bowl



was lifted. Figure #12 shows all in place, ready for final tinkering, bending, and adjusting for optimal performance. For added performance I also superglued a nut under the left end of the lever as added weight. The screw holes were a tad too large, al-

lowing the lever to shift sideways, BUT THIS SYSTEM WORKED!

In tinkering with these little sound systems I believe I suspected that each has a little capacitor in the circuitry. It takes a little "recharging" time between tests. This was learned the hard way as sometimes I thought I had the adjustments just right, only to find the sound not coming forth. I'd walk away in frustration, but upon returning, the darned thing worked again.

It would be ideal to conceal the whole electronic apparatus by gluing on loud speaker cloth, and allowing only the ON-OFF switch to stick through. A plunger, like on jewelry boxes...a sort of stiff small pin sticking straight out...would be ideal. Oh well, maybe next time. Or maybe YOU can come up with a better approach.

Figure #13 shows the completed bowl. It measures



7 1/2" diameter by 3 3/4" high.

I used a micro-torch to burn only the INSIDE growth rings. This, along with a wide and recessed rim, gives a surprising sense of depth. (Note there are no small screw holes in the inside bottom; I clipped the 2 screws short!) If you examine the picture carefully you can see the bottom rim has 1/3rd cut away to let the sound out.

By angling the rim, a gorgeous quilting pattern shows (bottom and top in picture) and provides an eye-catching chatoyancy. The finish is several coats

of spray lacquer, following by buffed wax. When spraying the lacquer on the outside bottom, I first finished the woodburning, and left the paper on the 2 sided tape. After the lacquer dried I stripped off the tape and stuck on the electronics.

Also, in case the battery cannot be replaced, or for other reasons you want to change out the electronics, use an adhesive removing product like Un-Do®

By proceeding carefully, major and even minor glitches and mistakes were avoided.

The main invention still needed is a simple and reliable switch that turns the sound on and off when the bowl is lifted. Even better would be an adjustable switch that could also turn on for a brief and changeable amount of time when sitting the bowl down. If anybody comes up with this, please drop me an e-note (bobh@leadingedgepands.com). Thanks in advance.

A final observation...

Many years ago, when working with various college professors on projects meriting associated equipment donations, I remember one telling me that, "The most exciting things happen at the boundary zones of two or more different fields of exploration, like optics and electronics." Here we see woodturning interfacing with micro-electronics.

I'm sure that with more technical breakthrough in small sound recording and generating systems that even better "sound bowls" are in the future.

Imagine a bowl that might tell you about the wood from which it was made, where the tree came from and how, and a biographical sketch of the wood-turner! We live in the age of magic. ☺☺