"WO7T Cootie"

While it would be a stretch to claim a new design on the cootie key, I at least can lay claim to my cobbled together components and assembly ideas for my Sideswiper/Cootie key which now graces my shack table. Start this project with acquiring the following materials to construct.

Materials:
(1) Wood flooring sample from Home Improvement Store
(1) Jeweler's Solid Rubber Bench Block - 4" x 4" $9.50 -Amazon
(1) Stick of K&S 5078 Flat Brass 0.032" X ½" X 12" $5.00 from Hobby Lobby
(2) 1-1/2" brass angle corner brace $3.00
(4) 1/2" small brass wood screws that recess flush in above corner brace
(1) #10-24 ¾" brass bolt with screw head ground off
(2) Brass #10-24 acorn nuts
(2) Brass 3/4" #6-32 Round Head bolts
(2) Brass #8 flat washers which will be a bit over-sized
(2) #6-32 knurled brass hand screw knobs
(2) Brass #8 1" Brass Wood Screws
(2) Brass Shelf Bracket Pegs
(2) Finger pieces of your own creation (see text)

I opted for hard rubber jewelers block, for some heft, and a 1" height to establish a minimum blade height, and I believed rubber would stay put on smooth desktop. It was also appealing for ability to drill, carve, or melt channels in it. I also chose not to use a hacksaw blade, as I feel it is too flexible, and instead used brass strip that was 1/2" wide.

In all honesty, without benefit of a known materials list, procuring the various parts took me as much time to size, purchase, and acquire, as the actual building. And in the end, owing to the price of brass these days, the last 7 items on the materials list totaled up to same price as the rubber block. And yes, one could save a bit by building with zinc plated steel versus the brass. All in all, you will likely be out the cost of a modest dinner to replicate this project.

For this initial build, I decided on hardware that was brass at all contact points. The flat brass strips come with enough to build out (4) Cooties with 5"x 1/2" arms. All mounting was intentioned to be screwed or bolted to the flooring sample, 3/8" think which should be cut to 4" X 4" square. A small notch at the edge of the rear of the rubber block was cut in undersized manner so the wiring cord would be squeezed between the rubber and the flooring sample when screwed down tight.

Prepare materials by trimming the sample flooring piece to a 4"X4" dimension to neatly fit atop the 4" jewelers rubber block. With sandpaper smooth any rough edges, and apply a minor rounding on the corners of the wood block. Next take the brass corner L-bracket braces consisting of two holes on each arm and cut off one of the holes with a hacksaw for both the brackets. Use a file or grinder to put a smooth curve back into the brass. The 0.032 1/2" brass strip was cut to 5" in my design, and one end was left with square cut, and finger end was rounded with file or grinder. I took the two brass shelf pegs

and filed smooth the actual pegs, and roughed up those ends so they would take solder. Put a light smear of flux on them, and then heat them up to take drop of solder to form a rounded end.

Assembly requires measurements being made multiple times before you drill and lock down, especially for the shelf peg spacing to the brass strip. First assemble the brass strip to the 1-hole side of the L-brackets. I chose to grind off the head of the 10-24 bolt sufficiently, so that two brass acorn nuts could be fitted on each side of the shortened L-brackets. Tighten them, and insure everything is square and the 2-hole portion of the L-brackets will sit flat on the sample wood block. Measure back from the edge about 3/8" from the L bracket start and carefully mark and drill holes one at a time for the inner two holes. You also need to drill one small hole right near the mated L connectors joint, all the way through the wood stock. This is where you will install a small uninsulated shorting wire between the brass strip, through the board, and onto the backside for final wire-up of cable. With three holes drilled, screw down the inner most screws on bracket. Then mark, drill, and install the outer most screws of L bracket.

In the past, for paddle finger pieces, I have made use of guitar pics, wood shims, binder clips, plexiglass pieces, thin petrified wood pieces, ceramic, glass, cork, felt, or whatever your imagination brings to bare. This time, I went for something reflecting the mining heritage of Arizona. The finger pieces are copper, with a minted face of some past U.S.A. coinage. The company selling my finger pieces calls them copper rounds on a famous bidding site, and 1/4 oz. coins are about the max of what you'll need and will escalate your costs about $9. You can test fit these or any of your other ideas with double-stick scotch tape, until you decide what if any finger pieces you wish to glue on.

The wiring of this cootie is largely left to your own discretion. I chose to direct wire the key to a 6' long 3.5mm stereo patch-cord, with the end cut off one end, and wires laid bare. My direct wire connects were soldered to the backside of the wood anchoring the brass strip, and the front posts. Note, that the two front posts should be shorted together in some manner, with (T)ip of 3.5mm plug going to the blade anchor, and the (S)hield of the 3.5mm connected to the two shorted posts. I chose to leverage copper foil tape, but one could have just as easily soldered up wires to the brass washers under the post bolts. It is conceivable that a 3 conductor stereo jack could be whittled out a spot out in the wood/rubber. And then appropriate cable for radio be plugged in and out.

Finally, where the bare wires exited the cable cover, I added a couple 4mm strips of heat shrink tubing, and then cut a shallow 'V' in the rear edge of the rubber block, about 5mm into the block from the back edge. With the rubbery texture of the heat-shrink and the undersized 'V' slice the cable should sit in the 'V' just before the wires come out, and with the wood top screwed down to the rubber base, it should produce a tight squeeze and pressure fit the end of the cable.

Lessons learned: Should I construct another WO7T Cootie, I believe I would leverage a hunk of 2x6 lumber to make the base versus the rubber jewelers block since it still required some rubber feet to be placed underneath to keep from sliding on the desk. I experimented with brass strips that were also much stiffer at .064" thick, but I reverted back to the thinner .032" stock and leveraged a brass stair gauge about 1/3 from the rear for this sideswiper. I did find that the thicker .064"stock brass strip would have likely worked better if this were a single lever paddle. And in pondering such prospects, next time, I would probably split the copper foil nearest the finger pieces, and fashion some sort of brass

shorting lever on the front edge, and then wire the 3.5mm stereo connector to both the front edge brass shelf pegs so I could use with an electronic keyer as well.

Building this was fun, but now the work begins in many practice sessions to learn how to properly use it.