Silicone Rubber Tootophone Mouthpiece

by **Thinkenstein** on November 8, 2012

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Author:Thinkenstein author's website
I'm a refugee from Los Angeles, living in backwoods Puerto Rico for about 35 years now and loving it. I built my own home from discarded nylon fishnet and cement.

Intro: Silicone Rubber Tootophone Mouthpiece

The sound produced by my tootophones has always been a bit tinny, and difficult to combine with traditional instrument voices. The silicone rubber body of the mouthpiece creates a horn-like sound that is very pleasing to the ear -- not at all tinny.

WHY IS THAT?

It has to do with percussive overtones when the reed slaps against the mouthpiece body every time it vibrates. Two materials are involved, that of the reed and that of the mouthpiece. Different material combinations create different percussive overtones, which flavor the base tone of the pulsing air. That's why different mouthpieces used on the same body create different sound qualities when playing the same note, vibrating at the same rate.

Plastic reed against plastic mouthpiece is very tinny. Silicone rubber coating the plastic reed material helps; silicone against plastic. Silicone reed to bamboo mouthpiece is better. Silicone reed to silicone mouthpiece is best.

I have plastic drumsticks with rubber heads. Hit the sticks together and there is a sharp sound. Hit the rubber heads together and there is a soft dull thud.

Since there are fewer percussive overtones, the base frequency sound of the reed vibration rate is cleaner, and less tinny.

Be sure and hear the sound sample in the final step.

Step 1: Making the mouthpiece

The curve of the mouthpiece is important. It must be a smooth curve, smoother than one can make by troweling the material. We get into mold making. The curvature of the mold defines the curvature of the mouthpiece.

The strip of X-ray film has an elongated hole in it through which a dowel passes. The X-ray film defines the curve and the dowel defines the air passage through the mouthpiece. Both get soaped with dish detergent and are allowed to dry. The detergent acts as a mold release agent.

I pinch the dowel to the film base with a clothespin. Between the dowel and the film base I insert a narrow strip of film material, which assures me the bottom of the air channel will be sealed if the silicone doesn't find its way completely under the dowel to join with the silicone on the other side.

As I build the silicone up and over the dowel, I add a strip of film material to the material over the air channel to help make the mouthpiece more rigid. This combination of materials gives me the silicone surface I want with more rigidity than the silicone alone would have.

I usually give the silicone at least half a day to harden up completely before removing it from the mold.

Next step, scrub the rubber with water and a tooth brush to get any detergent off of it. Let it dry.

Then, using the syringe, for precise placement of silicone, glue down a strip of reed material. You can test reed position by blowing the mouthpiece before the silicone sets up. When you get it the way you want it, set it aside and let it dry.

Trim excess silicone with scissors. Clean the inside of the CPVC fitting with some toilet paper and lacquer thinner, so silicone will stick to it. Stick the butt end of the mouthpiece into the section of CPVC pipe with a little silicone.

When the silicone dries, you are ready to play!

I made lots of mouthpieces. Each one comes out a little different. Experiment with different curvature. Collect your favorites.

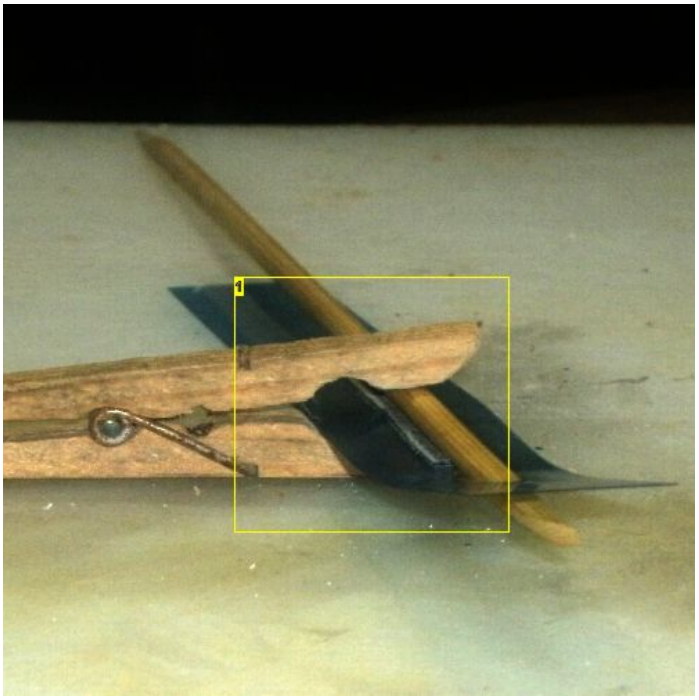


Image Notes
1. Note the strip of reed material between the dowel and the film mold material.

Image Notes
1. Put a little curve in the end of the film material by rolling it over a dowel. This curve is important since it shapes the curve of the mouthpiece.

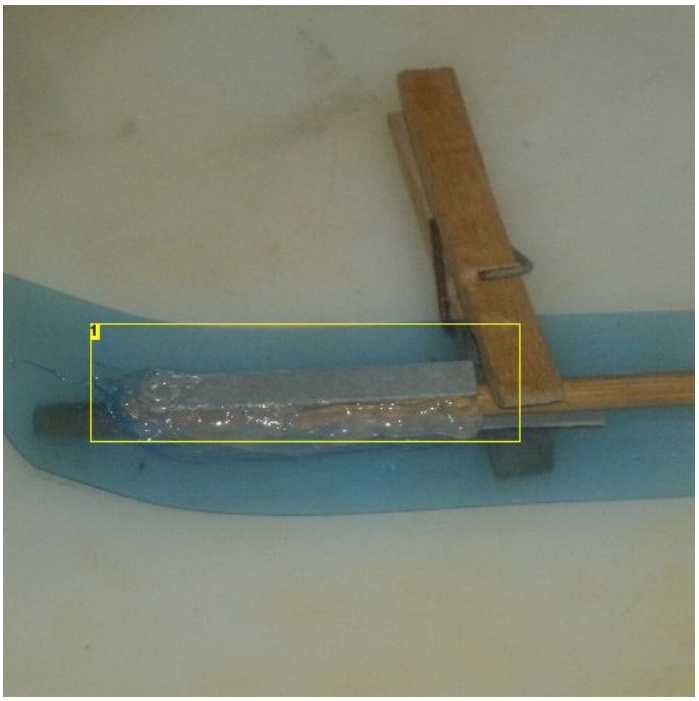
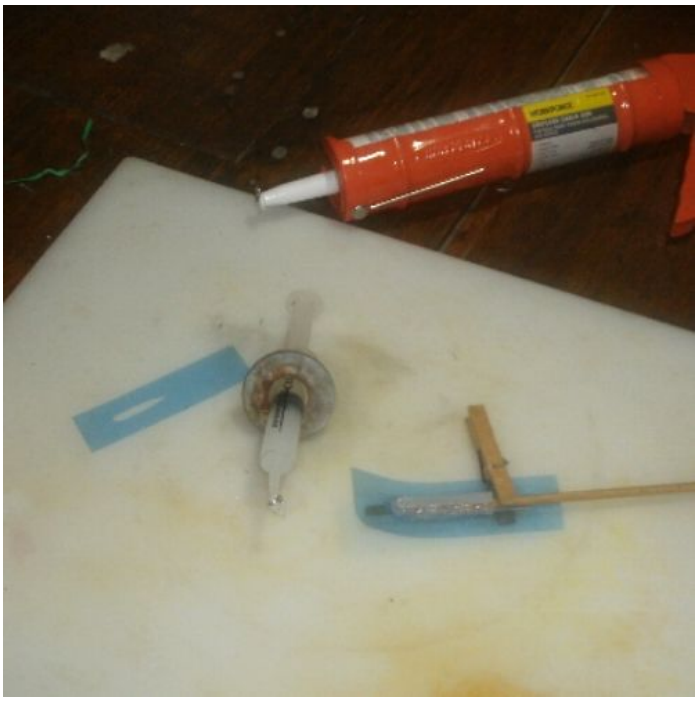
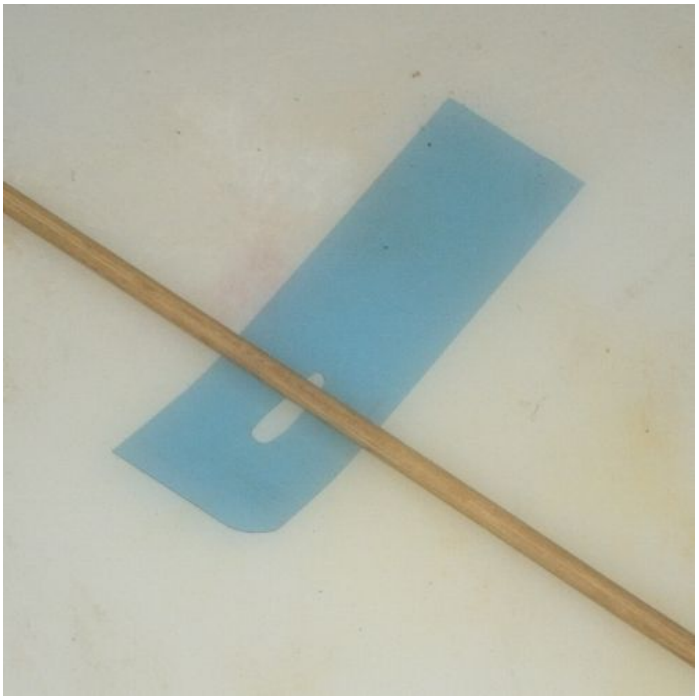


Image Notes
1. This is the strip of reed material that I build into the mouthpiece over the air channel for rigidity.





Step 2: Making X-ray film tootophone bodies

This is the sax tooter that I will use in the audio sample. The mouthpiece is built into a small section of 1/2" CPVC water pipe. CPVC is for hot water, and the 1/2" diameter pipe is smaller than regular 1/2" PVC pipe.

The mouthpiece then plugs into standard diameter fittings and can be attached to an X-ray film body put together with silicone rubber. Silicone sticks like crazy to the film material. You just have to be sure the image is cleaned from the film. Film images can be cleaned off right away with water, a metal kitchen scouring pad, and elbow grease. Alternatively, you can let it soak in water for about 3 weeks and then easily wash it off with a sponge.

I roll up the film and hold it with masking tape. Then, packing the syringe with silicone from the big cartridge, I squeeze some under the edge and tape it down further until the silicone hardens up. I usually use some silicone and electrical tape for joining the film body to the CPVC fitting.

You can make all sorts of horn bodies this way, or just play the mouthpiece with no body at all.

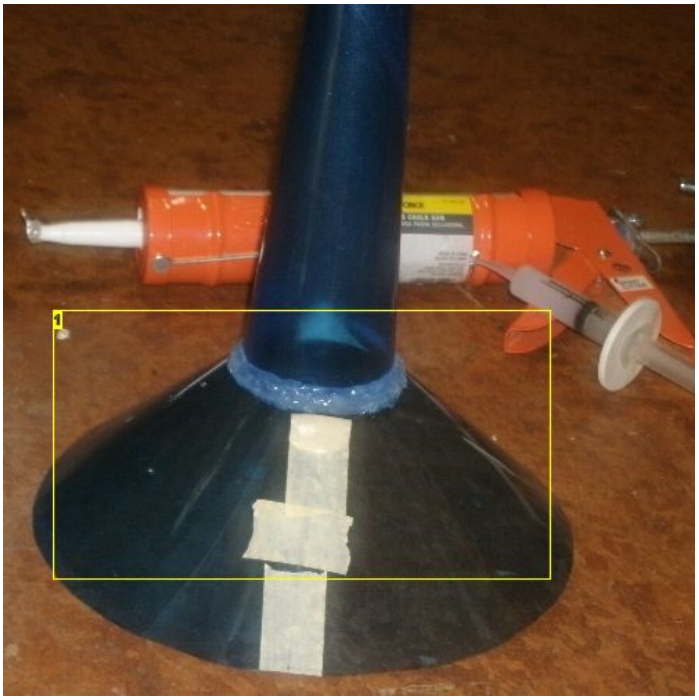


Image Notes
1. This is a trumpet bell being added to another tootophone.

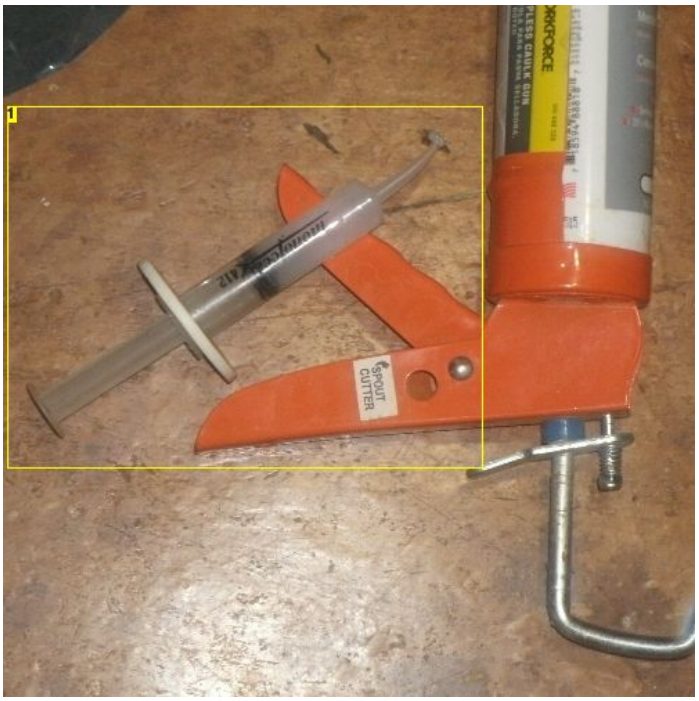


Image Notes
1. This veterinary plastic tipped syringe is ideal for detailed extrusion work.

Step 3: Sound Sample

Click on the icon that looks like a dog-eared page to hear "Besame", a sample of this sax tooter with a silicone rubber mouthpiece.

File Downloads

BESAME MUCHO.mp3 (1 MB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'BESAME MUCHO.mp3']

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