Tootophone Sax and Trumpet

by **Thinkenstein** on February 1, 2011

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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: Tootophone Sax and Trumpet

The end of the road is where you find me and my tootophones.

At Musiciansfriend.com , an alto sax sells anywhere from $250 for a student model up to around $3,800. This tootophone sax costs about $1 to make, sounds pretty good, and is a lot easier to play. Music departments take note. For the cost of one traditional sax you could probably equip at least 250 students with tootophone saxes. When the economy really, really sucks, you can still afford to have a band!

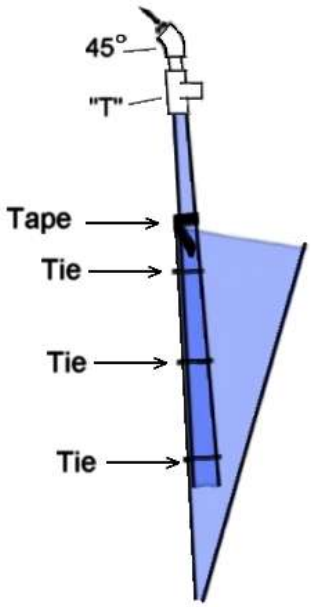
The mouthpiece for this tootophone variation is the same as the "Tiny Tootophone", http://www.instructables.com/id/Tiny-Tootophone. See that instructable to learn how to make the mouthpiece. It is made out of an insulin syringe and costs about 25 cents to make.

The reed material affects the sound. Stiffer plastic reeds sound more trumpet-like. Softer rubber reeds sound more like a saxophone.

Variations to the body of the tootophone make variations in the sound it makes. The tootophone sax has a rubber reed and a body that uses two cones made from x-ray film plastic. It is held together with electrical tape and a little nylon string.

Be sure and use good quality tape, such as that from the 3M company. The difference is in the adhesive. Cheap tape just doesn't stick as well.

To hear how the sax and trumpet sound, listen to the audio files in the last steps.



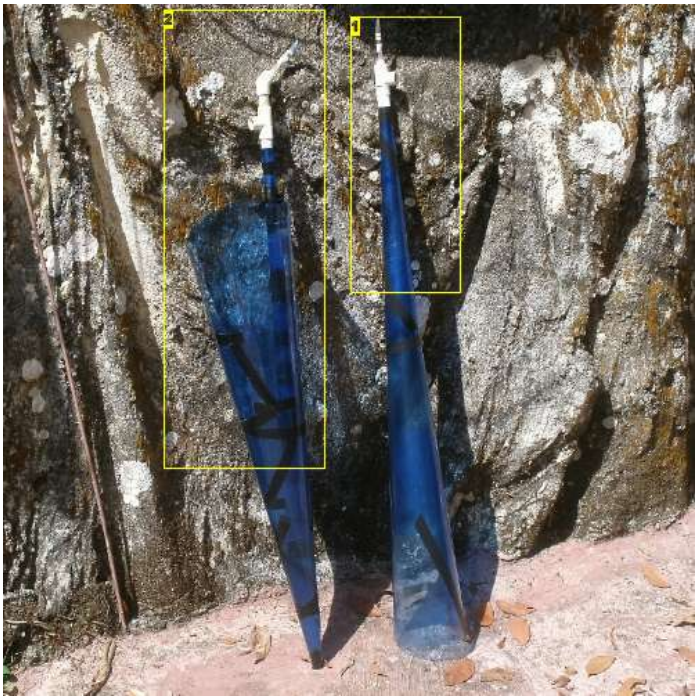


Image Notes
1. The trumpet model, with plastic reed, is a single cone.
2. The sax model has a rubber reed. The body is a cone within a cone.

step 1: Cleaning the film

I figured the tape would stick better to clean plastic than to the emulsion on the surface of the film. To wash the emulsion off, I found that a wash basin, metal scouring pad, water and a little elbow grease did the job quite well. The pad scratches the plastic, but that doesn't affect the sound. A stainless steel pad is slightly magnetic, so a mesh strainer and a magnet could be used to help remove any bits of the abrasive pad that might break off into the wash water.

I saved the wash water in plastic containers in hopes of figuring out a way to recover the silver from it. It is like black ink at first, but the solids slowly settle to the bottom. Maybe electroplating will work, or heating of the dry sediment to drive of everything but the silver. I haven't gotten to that stage of the game yet, so I am just storing jars of the stuff.

Commercial recovery of the silver often times involves destruction of the film, so I think this is more effective recycling.

Image Notes
1. The x-rays are soaked and scrubbed in this basin.

Image Notes
1. The inky wash water contains silver.
2. Metal scouring pad.

Image Notes
1. These cleaned films are hanging from a clothesline for drying.

step 2: Rolling Cones

Rolling a cone is not difficult. Start at one edge and roll. Tape down the free edge to keep it from unrolling. If small end needs to fit into one of the 1/2" CPVC fittings, size it accordingly before taping the cone.

After the cone is taped together, if it is too loose in the fitting, you may trim a little off the small end of the cone to make the end diameter a little larger.

I use a little clear PVC cement when I jam the cone into the fitting, and then tape the joint with a few layers of tape. The PVC cement seems to make the joint firmer.

Since the cones are longer than any of the x-ray films you have to make them in sections. The first section is rolled and taped. Then the next cone is inserted part way into the first cone and allowed to unroll. It stops when it meets the walls of the first cone, and conforms to the same conical angle. The cone's free edge is then taped and the two sections are taped together. It's like plugging the second cone into a socket in the end of the first one.

The internal cone of my sax is made of three small x-rays, while the outer cone is made of two large ones.

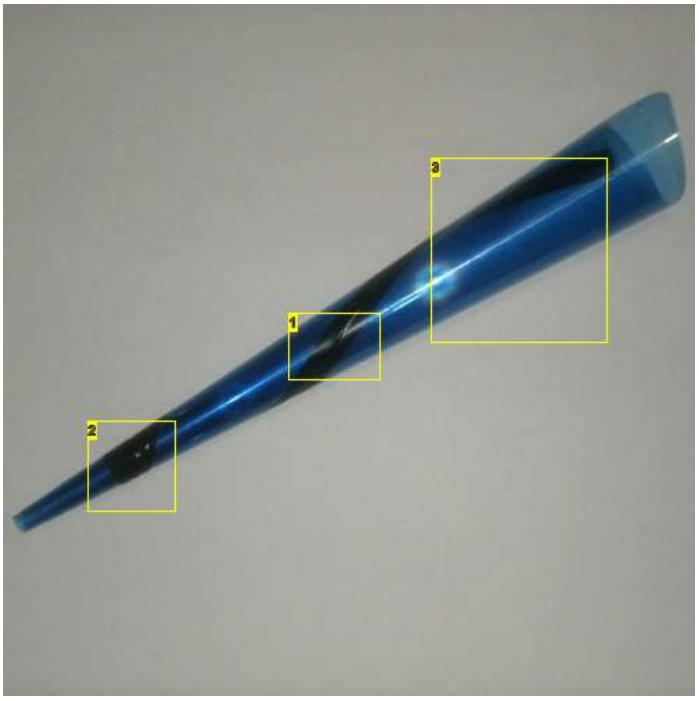


Image Notes
1. Tape along the free edge.

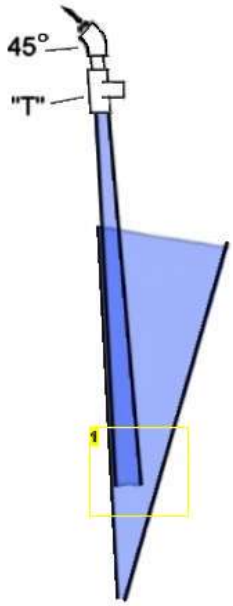


Image Notes
1. The air goes down the inside cone and then back up the outside cone. The

2. A ring of tape.
3. This cone is actually for a straight trumpet model. The inner cone of the sax model has a tighter conical angle and the outer cone has a wider conical angle than this one.

effect is like having a single cone the sum of the two lengths.

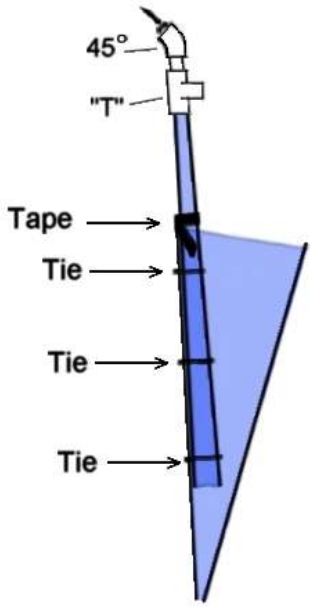
step 3: Joining the Two Cones

For the sax, the skinny cone goes inside the larger cone. Leave room for air to flow around the end of the skinny tube and back up the fat one.

Tape holds the two cones together at the top, and nylon string holds them together at three points further down. To tie them, you have to melt a couple small holes in the larger cone for the string to go through. I used a sharp soldering iron, but a heated nail held with pliers would work.

The bottom point is the most difficult to tie because of the tight quarters inside the larger cone. I ran one end of the string through one hole and a loop of string through the second hole. With a little maneuvering, the end of the string can be pushed through the string loop and then caught with the loop and pulled back out through the second hole for tying. After tying the points, I cover the exposed string and knots with a little tape.

Water condensation inside the cones can exit through the bottom. I tape the tiny hole at the end to close most of it. The mouthpiece can also be removed and blown through in reverse to remove condensation from it.



step 4: Adding the CPVC Fittings

The plumbing part of the sax uses 1/2 inch CPVC (for hot water) pipe. The trumpet model uses only a "T". The sax uses a "T", a 45 degree angle fitting, and a little section of pipe to join them.

With the finger hole closed, there are sometimes one or more annoying steps in the sliding scale that you can make. To avoid having such steps and difficult note sectionss, I drill a small hole in the 45 degree fitting, or in the "T". In effect that prevents the closing of the finger hole from ever completely closing of the escape of air before the cone section.

The cap that covers the plunger end of the original syringe is used as a socket for the tootophone mouthpiece to fit into. Since the cap has no hole running through it, you have to drill out the end. I used a small drill and then finished reaming it out with an X-acto knife. To hold the cap in place inside the CPVC fitting, a rubber "O" ring is used.

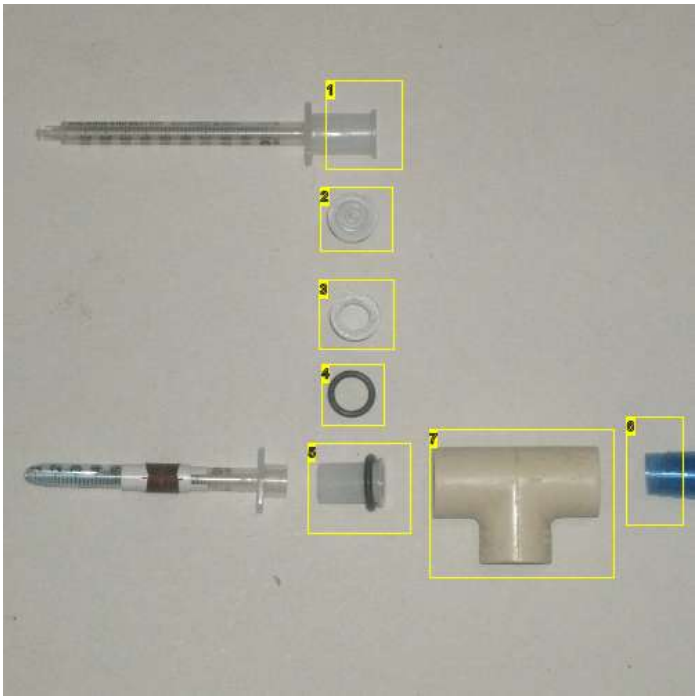


Image Notes

1. This cap holds the plunger inside and keeps the interior of the syringe clean.
2. This is how the end of the cap looks.
3. I drilled a hole and trimmed out the rest of the end with an X-acto knife.
4. Rubber "O" ring
5. Without the "O" ring, the cap fits loosely inside the end of the "T". The "O" ring holds the cap firmly in place, while the tootophone mouthpiece end fits snugly inside the cap.
6. The end of the cone fits inside the "T" with a little clear PVC cement and is then taped.
7. The trumpet model only uses a "T". The sax also uses a 45 degree angle fitting.

Image Notes
1. This is the tiny breather hole.

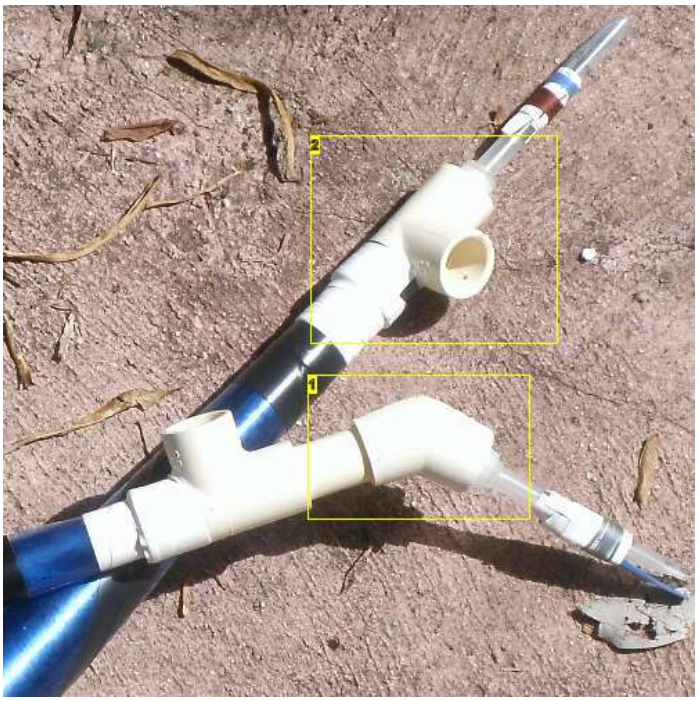


Image Notes
1. The sax model has a 45 degree angle fitting. Drill a small hole in the elbow (not seen in photo) to leak a little air when your finger completely closes the hole in the "T".
2. The trumpet model uses only a "T" fitting. Note the little breather hole in the side of the fitting.

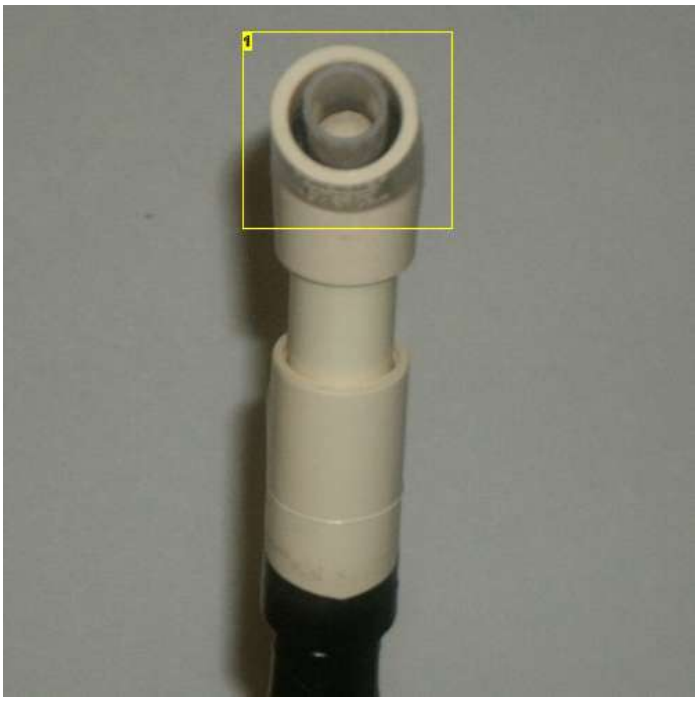


Image Notes
1. The black area in the photo is the rubber "O" ring.

step 5: Hear the Tootophone Sax

The tootophone sax uses a rubber reed.

Click on the icons below, that look like pieces of paper with the corner folded over, to open the audio files and hear the tootophone sax.

They are all improvisations.

File Downloads


SAX TOOTER 1.mp3 (792 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'SAX TOOTER 1.mp3']


SAX TOOTER 2.mp3 (844 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'SAX TOOTER 2.mp3']


SAX TOOTER 3.mp3 (1 MB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'SAX TOOTER 3.mp3']

step 6: Hear the Tootophone Trumpet

The tootophone trumpet uses a plastic reed.

To hear how it sounds, click on the icon below (looks like a piece of paper with corner bent over). That will open an mp3 audio file.

One is David Rose's "Stripper", I believe. The other two are original improvisations. This tooter sure can find the high notes!

File Downloads


TRUMPET TOOTER -- David Rose Stripper.mp3 (644 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'TRUMPET TOOTER -- David Rose Stripper.mp3']


TRUMPET TOOTER IMPROV 1.mp3 (734 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'TRUMPET TOOTER IMPROV 1.mp3']


TRUMPET TOOTER IMPROV 2.mp3 (1 MB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'TRUMPET TOOTER IMPROV 2.mp3']

step 7: On a Personal Note...

I live alone in the mountains of Puerto Rico and have a guest house. I would love to have musicians pass through to play and record with. A few models and massage partners would also be welcome.

Private message me if you are interested and would like a free place to stay while visiting beautiful (and warm in winter) Puerto Rico.

Related Instructables

Tiny Tootophone by Thinkenstein

Hypotooter -- a mini-musical instrument by Thinkenstein

Baby Bass Tootophone -- a reed instrument by Thinkenstein

pvc "TOOTOPHONE" -- a musical reed instrument by Thinkenstein

saxophone tips by BADGER MAN

Basic Alto Saxophone (could be applied to tenner, barritone, ect.) Guide by waverider894