

Now you've been introduced to some of the possibilities of these noisemakers, have a play and see what other kinds of sounds you can make. How would you **DESCRIBE** each **SOUND** and its **ACTION**?

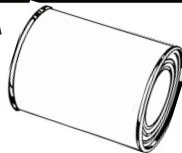


This zine was produced by Fiona Keenan in March 2017 for a workshop hosted by **CFUV WOMEN'S RADIO COLLECTIVE (WRC)** at the University of Victoria. This work would not have been possible without their generosity and also the support of the research team at **MLAB**, University of Victoria and the White Rose College of the Arts and Humanities [**WRoCAH** - who fund my PhD work and also this research trip]. **THANKS TO ALL!**

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AN INTRODUCTION TO NOISEMAKING

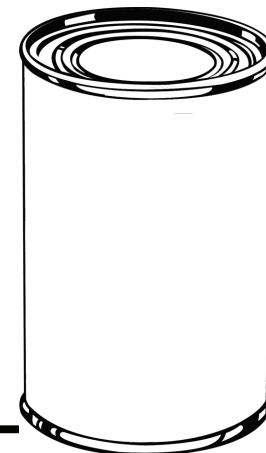
WITH
hand operated sounding objects

FEATURING
the physics of
SOUND DESIGN

AND
new uses for tin cans

astound
and
annoy

your friends
and
loved ones



A HIDDEN HISTORY OF **SOUND AND ACTION**



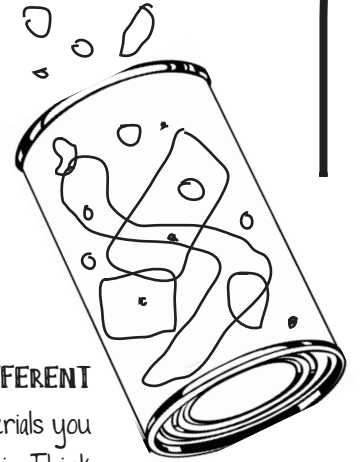
Sound was designed and performed even before the electronic age. **SOUND EFFECTS** were an important part of **THEATRE PERFORMANCES**, and everyday sounds like **WIND**, **RAIN** and **THUNDER** were made from simple mechanisms and materials like wood and metal. This craft has its origins in Ancient Greece, and evolved slowly until its golden age in the **LATE NINETEENTH AND EARLY TWENTIETH CENTURY**.

Recording technology made hand operated sound effects less and less popular in the twentieth century, but they found a new home in early **RADIO** and **CINEMA**, and still inspire sound design and Foley for many kinds of entertainment media today.

The practitioners of the craft built up a lot of knowledge about the **TECHNIQUE** of making sound with the right **MATERIALS** and **ACTIONS**, and some of this survives in their writings and diagrams. This zine will introduce you to a few of these principles through making some simple noisemakers.

3: RAIN TIN

1. Fill a tin can with your choice of materials, and some dried peas and beans to create the sound.
2. Seal the full can by taping on a cardboard lid.
3. Play it to make a rain sound!



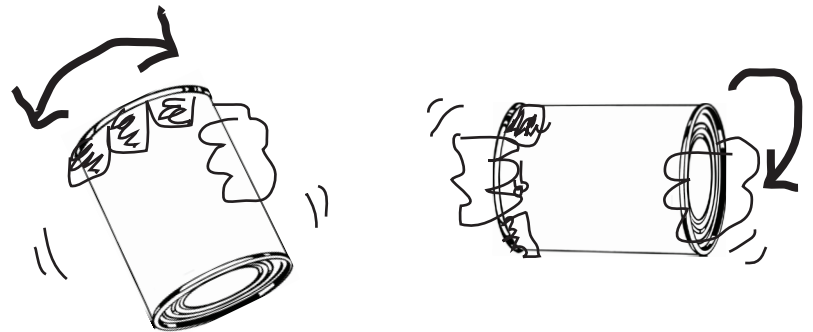
The raintin makes sound by setting up many **DIFFERENT IMPACT SOUNDS**, just like a rattle. The materials you choose to put inside will affect what that sound is. Think about:

SPACE: If there is not much material inside the tin, the peas/beans will move around and hit the metal much faster.

DRIED PEAS/BEANS: Different sizes will make each impact different to the last, making the overall rain sound more complex and natural.

MATERIALS: Putting cardboard or aluminium foil into the tin will give the dried peas/beans something else to hit besides the tin. This will also slow them down.

Take the time to **TRY OUT** some different options and see what you like best.



When you **PRACTICE** with the raintin, take note of the **ACTIONS** you use to make the sound.

2: CREAKER (OR CUICA*)

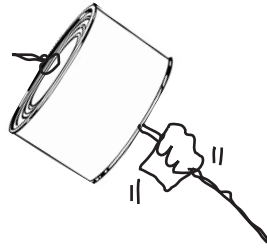


1. Pierce a hole in the base of a tin can large enough for the bamboo stick or chopstick.

2. Poke the stick through from the open end of the tin, leaving just a small part of it sticking out from the base.

3. Now apply some hot glue to the base where the tin and stick join, and leave it to dry.

To play the creaker, wet a piece of cloth and rub it up and down the stick. You will be able to make a loud creaking sound, and with a bit of **PRACTICE** you will be able to make different kinds of creaks and squeaks. The practice will help you build up some **PLAYING TECHNIQUE**.



The action you are performing is simple, but you can make **MANY DIFFERENT SOUNDS** from it. This design was used in early cinema to make creaking, croaking and squeaking noises, including the sounds of animals (frogs, birds etc).

This raises some interesting questions then about how we **DESCRIBE**:

THE ACTION

"hold"
"rub"
"squeeze"
"hit"

THE SOUND

"creak"
"squeak"
"errk"
"frog croak"

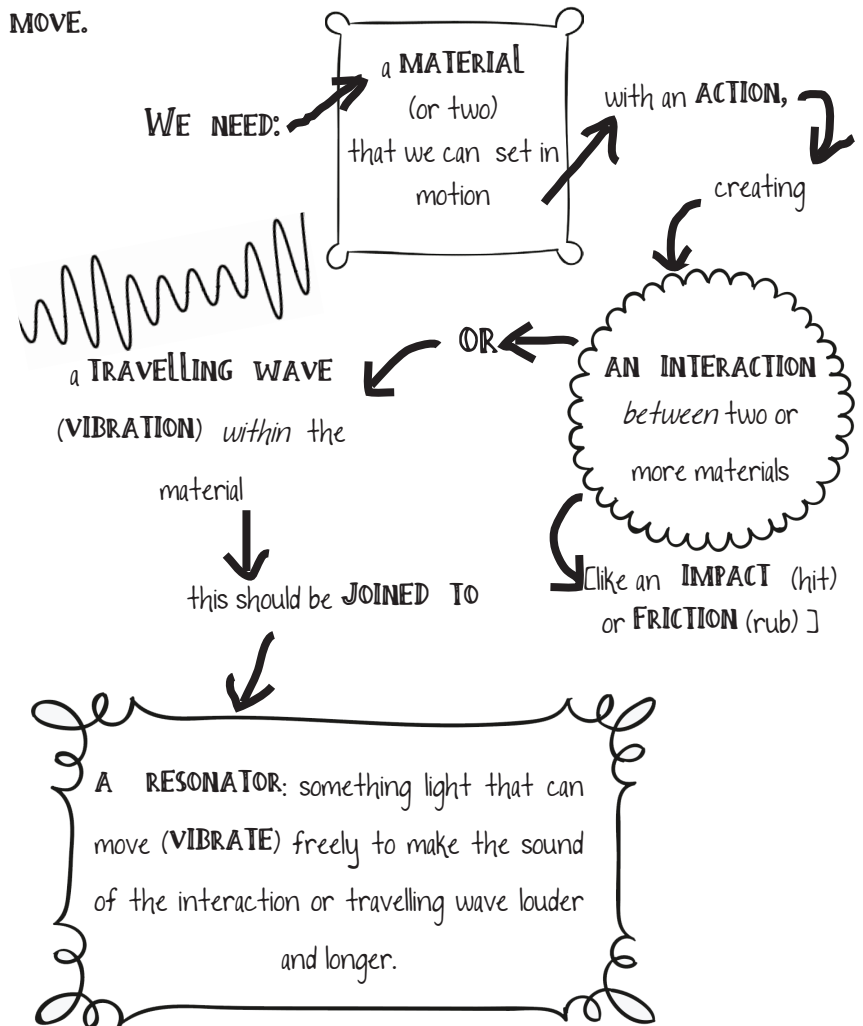
... so that we can **REMEMBER** what we did and **REPEAT** it if needed.

[By the way, does the creaker give you a new idea of how to approach making sound with the thunder tube?]

* this design is also called a 'cuica' in Brazil and is used to play music.

THE SCIENCE(PHYSICS) OF **SOUND DESIGN** WITH MATERIALS

Sound is **VIBRATION**, so when we hear a sound it means that something is **MOVING**.* To create sound then, all we really have to do is **MAKE SOMETHING MOVE**.



* this includes headphones and loudspeakers - when we listen to recorded sound, they move to send the audio through the air to our ears as vibration.

FOR THESE PROJECTS, YOU WILL NEED...

MATERIALS

- at least two empty tin cans
- a Pringles crisps cardboard tube (replace this with a tin can if you don't have one)

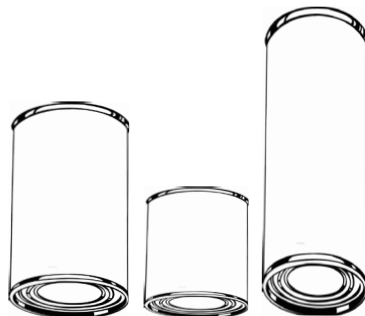
The tin cans and cardboard tube will be resonators. Generally when it comes to sound, the larger your resonator is the better, but you can get some surprisingly loud results with small cans so do experiment with different sizes and shapes.

also:

- a long, flexible spring
- a bamboo stick or chopstick
- some dried peas and beans, enough to make a rattle
- some cardboard
- some aluminium foil

Tools

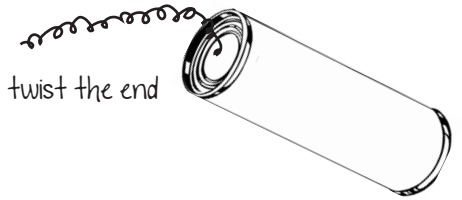
- a hot glue gun
- some duct tape
- something sharp to make a hole through the base of the tins (a small scissors will do, and be careful!)



1: THUNDER TUBE

1. Take the cardboard tube (or tin can) and make a small hole in the centre of the base.

2. Stretch the spring out a little and twist the end of it into the hole to connect it to the tube.



3. Now, hold the tube at the top and shake it. It will produce a quiet rattle. Not very impressive!

3. Now apply some hot glue to the join and leave it to dry.

4. When the glue is dry, try shaking the tube again. This time, you will hear a thunder-like rumble.



What has changed? The glue has **CONNECTED** the spring to the tube so well that the vibrations of the **MOVING SPRING** (the source of the sound) can easily travel up through the cardboard tube (the **RESONATOR**).

this is known as **COUPLING**

this is known as **DAMPING**

Although the **COUPLING** between the spring and tube is tight enough to make the right thunder sound, this can be disrupted in a different way. Try playing the thunder tube with your hand closer to the spring end. It will sound quieter because your hand is **ABSORBING** some of the vibrations before they can move through the resonator.