Kinetic Toys

MANUAL

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N I NATIVE INSTRUMENTS

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1   Welcome to KINETIC TOYS

Thank you for purchasing KINETIC TOYS, a virtual instrument inspired by childhood discovery and wonder. Advancing the framework of KINETIC METAL, we hope KINETIC TOYS will be an inspiring new addition to your sonic toolkit.

1.1   About the Library

To adults, toys seem simple; to a child they are devices that transport them to another place. It's their gateway to understanding the world. So the details of a toy are exaggerated—sounds are amplified into a realm of fantasy and imagination that is beyond what adults eventually comprehend when we grow out of them. This was the underlying concept for the library.

KINETIC TOYS combines recordings of toys (both musical and non-musical) with advanced sound design to create the soundtrack to our childhood imagination.

Even the instrument design itself is playful, allowing you to explore sound in new ways. You won't know what you get until you start moving things around.

Each of the 35 included instruments contains four sounds, each built from a toy source and a complementary synthetic source (giving a total of eight sound sources in a single instrument). The sounds are mixed together and processed through four onboard effects.

Both the sound mix and the effect parameters can morph over time by using the built-in automation, as well as the freely assignable modulation.

> More information on each of the instruments can be found in chapter ↑3, Instrument Descriptions – The Sound Sources.

1.2   Document Conventions

This document uses particular formatting to point out special facts and to warn you of potential issues. The icons introducing the following notes let you see what kind of information can be expected:

The speech bubble icon indicates a useful tip that may often help you to solve a task more efficiently.

The exclamation mark icon highlights important information that is essential for the given context.

The red cross icon warns you of serious issues and potential risks that require your full attention.

Furthermore, the following formatting is used:

- Text appearing in (drop-down) menus (such as *Open…*, *Save as…* etc.) in the software and paths to locations on your hard disk or other storage devices is printed in *italics*.

- Text appearing elsewhere (labels of buttons, controls, text next to checkboxes etc.) in the software is printed in blue. Whenever you see this formatting applied, you will find the same text appearing somewhere on the screen.

- Important names and concepts are printed in **bold**.

- References to keys on your computer's keyboard you'll find put in square brackets (e.g., "Press [Shift] + [Enter]").

► Single instructions are introduced by this play button type arrow.

→ Results of actions are introduced by this smaller arrow.

2   Using KINETIC TOYS

While KINETIC TOYS is designed in a playful manner, inviting you to explore and discover the instrument for yourself, the following sections of the manual will describe how the instrument works and what the various objects represent.

2.1   The KINETIC TOYS User Interface
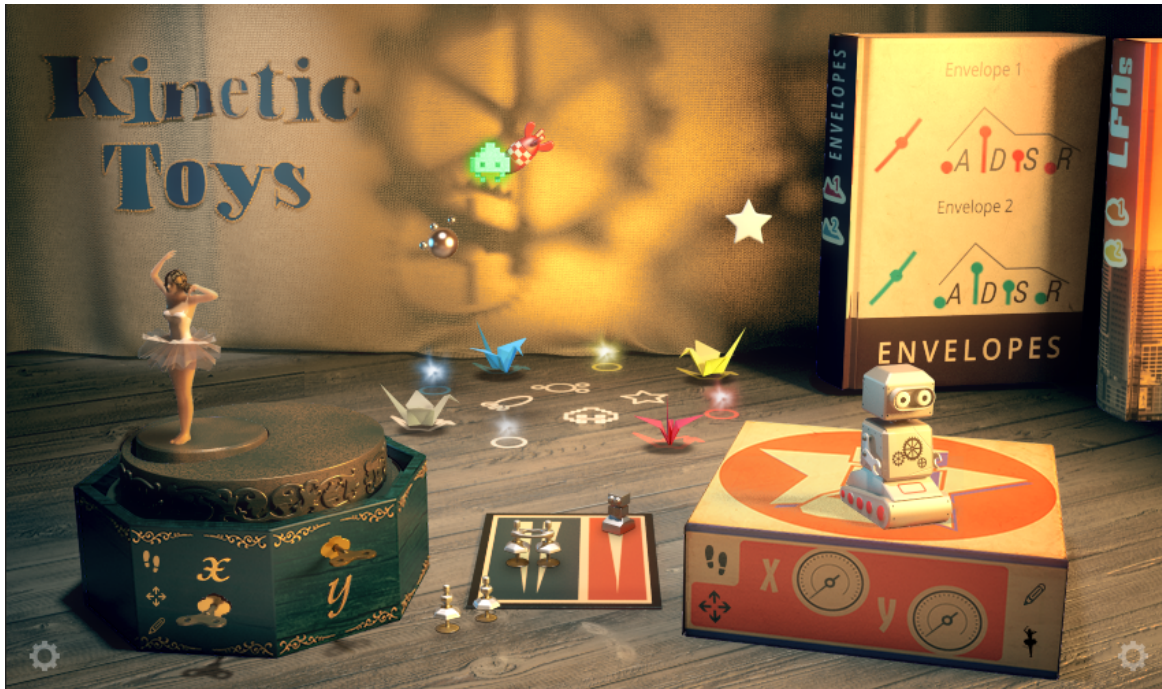
The KINETIC TOYS User Interface

The main user interface has six main control areas:

- The **Ballerina** on the music box is used to morph between mix settings for the source sounds.

- The **Robot** on the right is used to morph between FX settings.

- Between these two is a **global mixer** (modeled after a board game) for quickly tweaking overall levels of the source sounds and the FX.

- In the center of the interface is an **XY pad** populated with flying toys that you can use to adjust the sound mix, or the FX settings.

- Below the XY Pad are the landing areas for the toys, which you can use to enable or disable sound sources or effects.

- In the right corner are **two books** that contain modulation sources.

2.2   The Ballerina and the Sound Source Mix

The Ballerina can be controlled like an XY pad, by clicking and dragging with the mouse. This will morph between mix settings stored in four available slots.

Moving the Ballerina to Morph the Sound Source Mix

The movement of the Ballerina can also be automated (see ↑2.4, Automating the Robot and the Ballerina for more information.)

2.2.1　Editing a Sound Source Mix

You can edit the mix settings in the available slots.

► To view the mix slots, click on the cog icon in the lower left corner of the interface.

→ The slot buttons will be displayed over the Ballerina.

> ⚠ To avoid accidentally damaging your mix settings with automation, the cog icon is not visible when the host transport is running.

The mix slot selection view

The mix slots are represented by the letters a, b, c, and d that are positioned around the Ballerina.

► To edit a mix slot, click on the letter of the slot you wish to edit.

→ After clicking on the letter, the area in the center will update to show the mix settings as a collection of origami cranes and light flares (that will be referred to as wisps) positioned in a 2D space. This space acts as a mixer.

The 2D Mixer space

The 2D Mixer space may look strange at first, but editing a mix is simple.

The objects represent the main sound types:

- **Cranes** represent the toy sounds.

- **Wisps** represent the synthetic sounds.
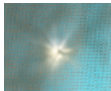
The two axes of the 2D Mixer space represent parameters for the sound sources:

- Moving the objects in the Y axis will change their volume, with higher objects having higher volume levels.

- Moving the objects in the X axis will morph between two complimentary sounds.

► To change its volume and morph settings, click and drag an object in the 2D Mixer space.

Changes to the selected mix slot are stored automatically.

Linking Objects

Cranes and wisps of the same color were created as a matching pair. You can link them so that changes to one automatically happen to the other.

The link option is located in the Global Mixer, which is located on the floor between the Ballerina and the Robot.

The Global Mixer

There are two metal tokens that look like ballerinas, which represent the overall volume of the toy sounds and the synth sounds.

The Ballerina Tokens

The link state will be shown by the state of the tokens on the mixer card. If the tokens are shown to be holding hands, then the sounds are linked.

► To change the link state, click on the ballerina tokens that are not on the mixer card.
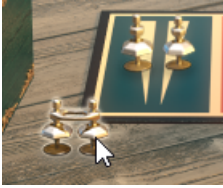
→ The tokens will exchange positions and the link state will update.

2.2.2   Activating and Deactivating Sound Sources

Activating and deactivating sound sources is only possible when the XY Pad is displaying the 2D Mixer.

► If the cranes and wisps are not already displayed, you can activate 2D Mixer mode by clicking on a crane or wisp in the area below the mixer, or by clicking on the Ballerina.

> (!) Note that when you have the sound mix displayed in the 2D mixer, all of the FX objects will be temporarily relocated to the floor. This does not change the mixer settings; the objects will return to their last position when you return to view the FX view.

You can turn each sound source on or off with a single click. Each object has an outlined space designated to it on the floor below the 2D mixer. For example, if a sound is represented by the red crane, then the red outline of a crane is its designated space on the floor.

A sound is inactive if it is on the floor and is active if it is floating in the 2D mixer.

► To toggle a sound source on or off, click on its designated space on the floor.

→ The object will change location, showing the status of the sound source.

You can turn each sound source on or off with a single click. Each object has an outlined space designated to it on the floor below the 2D mixer. For example, if a sound is represented by the red crane, then the red outline of a crane is its designated space on the floor.

A sound is inactive if it is on the floor and is active if it is floating in the 2D mixer.

► To toggle a sound source on or off, click on its designated space on the floor.

→ The object will change location, showing the status of the sound source.

> ⚠ Note that when you have the FX mix displayed in the 2D mixer, all of the sound source objects will be temporarily relocated to the floor. This does not change the mixer settings; the objects will return to their last position when you return to view the mixer view.

2.3   The Robot and the FX Mix

Like the Ballerina, the Robot can be controlled like an XY pad, by clicking and dragging with the mouse. Moving the Robot will morph between FX settings stored in the four available slots.
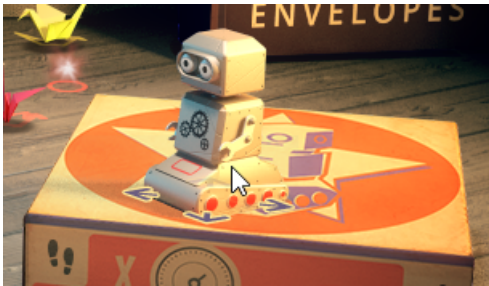
Moving the Robot to Morph between FX Settings

2.3.1   Changing FX Settings

You can control the FX via the 2D mixer in the center of the instrument interface.

To use the central area as the FX editor, you need to make sure it is in FX mode.

▶ To place the central area in FX mode, click on the Robot.

▶ Alternatively, if FX mode is not already active, click on one of the FX toys on the floor (see below for a list of the FX Toys).

→ Mixer mode is active when the central area is populated by small toy objects.
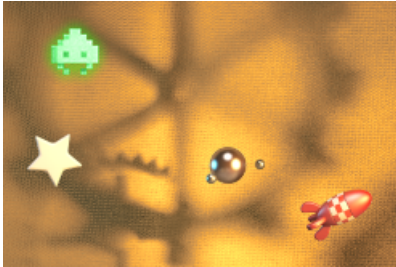
Several objects that represent individual effects in the 2D mixer

The objects represent the available effects. Although the specifics of the effects will change from instrument to instrument, the objects will always represent the same kind of effect:

- **Star**: Resonant effects, like EQs and Filters.

- **Rocket**: Spacial effects, like delays and reverbs.

- **8-bit UFO**: Bitcrusher/distortion combination.

- **Metal Planet**: Modulation.

The two axes of the 2D area represent parameters for the sound sources. These will be different for each effect, but generally the X axis will define the intensity of the effect, and the Y axis will define the character of the effect.

► To change an object's settings, click and drag the object in the 2D space.

2.3.2   Bypassing Effects

Activating and deactivating effects is only possible when the XY Pad is displaying the FX objects.

► If the FX objects are not already displayed, you can activate effect mode by clicking on an FX toy in the area below the mixer, or by clicking on the Robot.

> Note that when you have the sound source mix displayed in the 2D mixer, all of the FX objects will be temporarily relocated to the floor. This does not change the FX settings; the objects will return to their last position when you return to view the FX view.

Each effect can be turned on or off with a single click. Each object has an outlined space designated to it on the floor below the 2D mixer. For example, if an effect is represented by the star, then the outline of a star is its designated space on the floor.

An effect is bypassed if it is on the floor and is active if it is floating in the 2D mixer.

► To toggle an effect on or off, click on its designated space on the floor.

→ The object will change location, showing the status of the effect.

2.3.3   Editing an FX Mix

You can edit the mix settings in the available slots.

► To view the FX slots, click on the cog icon in the lower right corner of the interface.

→ The slot buttons will be displayed over the Robot.

> ⚠ To avoid accidentally damaging your mix settings with automation, the cog icon is not visible when the host transport is running.

The FX slot selection view

▶   To edit an FX slot, click on the letter of the slot you wish to edit.

→   After clicking on the letter, the area in the center will update to show the FX settings as a collection of four icons positioned in a 2D space.

The FX Settings Controls

Editing FX Parameters

The two axes of the 2D area represent parameters for the sound sources. These will be different for each effect, but generally the X axis will define the intensity of the effect, and the Y axis will define the character of the effect.

► Click and drag an object in the 2D space to change its parameter settings.

Changes to the selected mix slot are stored automatically.

2.4 Automating the Robot and the Ballerina

There are three built in modes for automating the positions of the Ballerina and the Robot:

- **Step Motion**: Plays back a tempo synced sequence.
- **2D Motion**: Morphs between settings by using independent X and Y speeds.
- **Record Motion**: Record and playback movement with control over playback speed.

In all cases, playback of the automation is linked to incoming MIDI:

- When you play a new note, it will start playback.
- When no notes are held, playback will stop.

2.4.1 Step Motion

► To select Step Motion mode, click on the footprint icon.

With Step Motion mode enabled, the Robot/Ballerina will move between four points at a steady rate.

Selecting a Playback Speed

► To select a playback speed, click and drag on the Sync control.

Defining the Path of the Robot and Ballerina

To define the path of the Robot/Ballerina, use the controls to the right of the Sync control.

► To define how close to the middle or edge the path should be, click and drag on the circle in the center.

► To define which corners of the XY space the path should move between, click and drag on the four letters.

▶ To define the rate of movement between the defined points, click and drag on the lines between the letters.

2.4.2   2D Motion

▶ To select 2D Motion mode, click on the arrow icon.

With 2D Motion mode enabled, the Robot/Ballerina will move as defined by independent X and Y speeds.

▪ The X control sets the X speed. At its lowest position, the Robot/Ballerina will not move along the X axis.

▪ The Y control sets the Y speed. At its lowest position, the Robot/Ballerina will not move along the Y axis.

2.4.3   Record Motion

► To select Record Motion mode, click on the pen/pencil icon.

With Record Motion mode enabled, you can record a sequence, and then play it back at a defined speed.

Recording a Sequence

To record a sequence:

1. To activate record mode, click on the Rec button.

2. To define the sequence, click on the Robot/Ballerina and move it around. The maximum recording time is roughly 10 seconds.

3. To deactivate record mode and save the sequence, click the Rec button again.

When the sequence is recorded it will play back when you play a note, and at a rate defined by the Speed control.

> ⚠ Note that when the Speed control is at its lowest value, the sequence will not play.

2.4.4   Linking the Robot and Ballerina

You can link the movement of the Robot to that of the Ballerina.

► Click on the Ballerina icon on the Robot's box to activate the link.

When the two are linked, the Robot will always follow the motion of the Ballerina, whether it is automated, or moved manually.

► To unlink the Robot and Ballerina, select one of the other automation modes for the Robot.

2.5   The Global Mixer

Between the Ballerina and the Robot is a card with small metal tokens on it. You can use this Global Mixer to quickly edit the sound of the instrument.
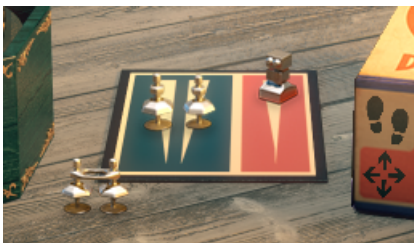
The Global Mixer

By moving the robot token you can control the intensity of all of the effects in the instrument at once:

- Move the robot token downwards to decrease the intensity of the effects.
- Move the robot token upwards to increase the intensity of the effects to the settings specified with the FX controls.
- When the robot token is at its lowest value, the effects will be at a neutral (i.e. clean) setting.

By moving the small ballerina tokens you can quickly balance the levels of the two main sound sources: the Toys and the Synths.

▪ The left ballerina token controls the level of the toy sounds.

▪ The right ballerina token controls the level of the synth sounds.

The ballerina tokens can be linked so that they control both the toys and the synths equally. The link state will be shown by the state of the tokens on the mixer card. If the tokens are shown to be holding hands, then the sounds are linked.

► To change the link state, click on the ballerina tokens that are not on the mixer card.

→ The tokens will exchange positions and the link state will update.

2.6 Modulation

KINETIC TOYS has four assignable modulation sources: two envelopes and two low frequency oscillators (LFOs). These can be freely assigned, but only to a handful of controls.

2.6.1 Displaying Modulation Controls

The modulation controls are found on the covers of the books to the right of the interface. Only one type of modulation will be displayed at a time.

► Click on the spine of the book of the modulation controls you wish to display.
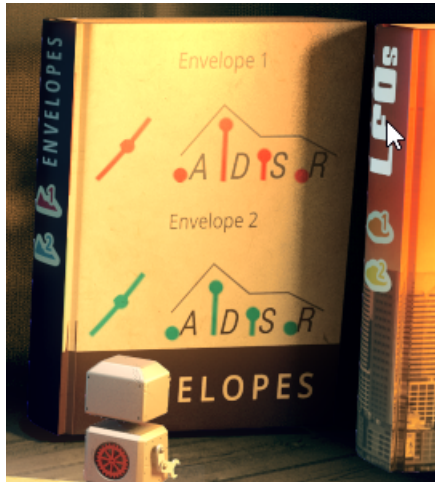
→ The books will move to display the controls of the selected modulation type.

2.6.2 The Envelopes
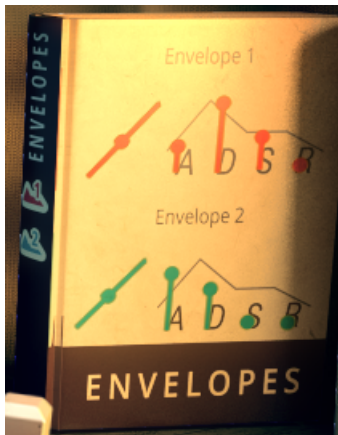
The Envelope Controls

There are two available envelopes, each with the same controls:

- A (attack): sets the fade-in time for the envelope.

- D (decay): sets the time it takes to decay to the sustain level, after the attack phase has finished.

- S (sustain): sets the level at which the envelope will sustain, after the decay phase, for as long as the key is held.

- R (release): sets the time it takes for the envelope to fade to zero when the key is released.

- The control to the left of the ADSR controls defines the curve of the envelope's attack.

2.6.3   The LFOs
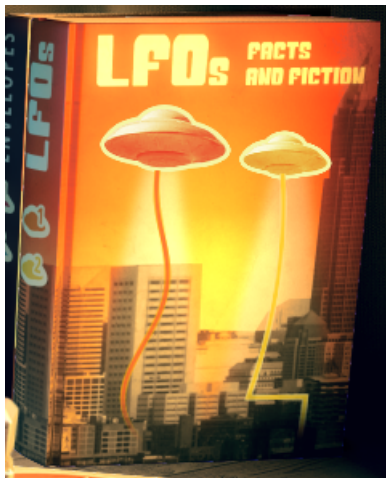
The LFO Controls

The controls for the two LFOs appear as two flying saucers.

▶   Click on the flying saucer to change the LFO waveform. There are three available waveforms: sine, saw, and square.

▶   Click and drag vertically on the flying saucer's energy beam to change the LFO rate.

▶   Click and drag horizontally on the flying saucer's energy beam to change the LFO intensity.

2.6.4   Assigning Modulation

The modulation sources can be freely assigned to the Global Mixer controls and the Ballerina/ Robot Automation controls.

To make a modulation assignment:

1. Click on the icon of the modulation source in the spine of the modulation books.

2. The available destinations will be highlighted with arrows below them.

3. Click on an arrow to apply modulation to the control.

→   The modulation source will be assigned to the control, with the modulation icon appearing below the control.
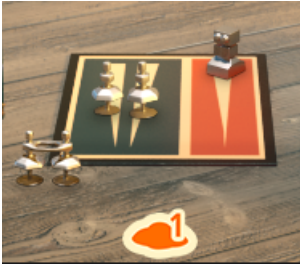
A control can only be linked to one modulation source, but the modulation sources can be assigned to more than one control.

Removing Modulation Assignments

To remove a modulation assignment:

1.   Hover over the assignment icon to display the X icon.

2.   Click on the X.

→   The modulation assignment will be removed.

3   Instrument Descriptions – The Sound Sources

3.1   Automaton

Old mechanical toys can be extremely detailed, complex, and even personal. There's no better example than the Automaton, particularly the ones that mimic living things like the ones Pierre Jaquet-Droz created in the 18th century - some comprising of up to 6000 parts, refined and miniaturized to fit inside the shape of a doll. Looking inside these machines after they are wound up and set in motion leaves you in awe of the time, attention to detail and imagination that went in to their creation.

The Automata sounds are a love letter to that art; they take this complex imaginative toy into the realm of sound. The hundreds of different sized gears, intricately shaped cans, chimes, tines, levers and cranks were individually recreated and microscopically recorded for flexible control, freeing timing and movement in order to allow you to create your own Automaton sequences and put them into musical form.

In order to achieve this, tonal elements were extracted to exaggerate the playability from several recorded, processed and layered sound sources, including old creepy wind-up dolls, antique time pieces, and many other creaky automata machines with their unique sounding components that, together, form the complexity of this Automaton Toy instrument.

Included Sounds:

- Animatronics
- Automata Clockwork Anatomy
- Creepy Doll
- Automation Key
- Magic Music Box
- Mechanical Tinkering
- Robot Locomotion

▪ Wind-Up Rocking Horse

3.2   Basement Cowboys

In coming up with ideas for toys to record for this instrument I couldn't help but feel somewhat nostalgic when thinking back to my own childhood days playing as a cowboy with cap guns.

Luckily my Mom had an old box of toys of mine she kept from when I was younger and in it a glorious vintage cap gun whose trigger still clicks, hammer still pops and bangs with fresh caps, and the cylinder still spins in all its creaky and rusty glory.

But of course no cowboy is complete without the sound of the twirling lasso, the stomping of the boot and the spinning spurs which I include in this instrument at no extra cost.

Included Sounds:

▪ Cap Guns

▪ Cowboy Boots

▪ Cowboy Spurs

▪ Ghost Town

▪ Lasso Trick Rope

▪ Pew Pew Space Cowboy

3.3   Bells

Nothing captures the attention of a child like the percussive and (usually) tonally pleasing sound of bells with their bright metallic inharmonic complexity played with a simple strike. In sampling these toy bells I found one of my favorite aspects is the unique subtle dynamics of each bell - the imperfect rattling or squeakiness of the swinging yoke.

Another great aspect is the range of each bell. A large part of designing these instruments is carefully extracting the harmonic imprint of each individual bell to keep its tonal distinction across a wide range of notes while also having the capability to morph into other tones and characteristics to easily achieve completely new bell kinetics limited only by your imagination. The kind of feature every toy should have.

Included Sounds:

- Bellhop
- Brass Ship Bell
- Carillon Bells
- Crib Chimes
- Jingle Bells
- Railroad Bell
- Tricycle Bell

3.4   Bouncing Balls

Sometimes the simplest of toys are the most versatile and enjoyable because you can so easily wrap your imagination around them and create endless entertainment. The ball is the quintessential archetype of this truism.

I would argue that an often overlooked aspect of the ball that is just as satisfying as its play value is the sound it makes: A simple yet satisfying kick or a complex bounce echoed off the walls. It is a good starting point but doesn't have to end there, and with these sounds it certainly does not. There are the satisfying characteristics I just mentioned but with manipulations of pitch and stretched tones rubber balls are suddenly from Pluto, ping pong balls have their plastic replaced with a wooden material, plastic balls reach escape velocity speeds and bounce out of the stratosphere, etc. All while maintaining and inventing a musicality of tonalities that are alien yet familiar and, like the nature of a ball, simple and fun.

Included Sounds:

- Beach Ball
- Bouncing Marbles

- Flying Rubber

- Gravity Morphing Balls

- Ping Pong Balls

- Racket Ball

- Rubber Bouncy Ball

3.5   Bugs

I remember so many times in my childhood camping out in the backyard and the sound of all the insects; the ambience of the quiet night is definitely a sound that brings back good memories. I wanted to reproduce that memory sonically.

Of course some insects are very difficult to record, because getting up close is virtually impossible unless you wait for them to land on your microphone, which requires an exercise of incredible patience, and even then recordings are limited. So while I spent the time trying to get good recordings of cicadas, crickets, moths, flies, etc. I embellished with some good sound design and extensive research into the sound of these bugs to make their sounds better. Adding tonal elements that respect the actual tonal elements of the insects and using various methods to get the desired results to make them playable.

There is also a sound of the ambience of bugs in a forest from when I took a road trip on the coast of Oregon and spent the night in a tent in some forest with lovely sounds. Crickets are so musical. One night I heard a really loud one outside my window that I was able to record very close up along with the chorus of the others around. The cricket sound I made is a nice choir of crickets that plays very well.

Included Sounds:

- Acherontia A Moth

- Ant Farm

- Backyard Camping

- Cicada

- Cricket Chorus

- Dragon Fly

- Grasshopper

- Housefly

3.6 Candy

It's no secret that sound is an important element for the young when it comes to toys, and Candy is no exception. One may not typically associate candy with toys but I would consider them toys for taste buds and they go hand in hand with toys.

Part of the fun in designing instruments like toys is the challenge of making something you would not associate with having any kind of musicality into something you can use in that way. Candy does indeed make unique sounds and the sounds they make are a subliminal aspect that makes them enticing and fun. Bubble Gum, Lollipops, Fizzy Drinks, Rock Pops, even the bright sound of the candy wrapper all contribute to the enjoyment of a kid gorging themselves on sweets. And for me it lends itself to a world of sound that is little explored yet fits nicely into this musical toy land.

Included Sounds:

- Bubble Gum

- Candy Wrapper

- Fizzy Drink

- Gum Balls

- Lollipop

- Rock Pops

- Popcorn Popping

3.7   Carnival

I think it's safe to say that while this project is primarily about toys, pushing the boundaries of childhood nostalgia can go in so many different directions. To really make it interesting and immersive as an instrument of childhood surprise and imagination, I tried to occasionally step into those places that brought that sense of youthful wonder and curiosity in the endless possibilities of this strange universe.

With this instrument I wanted to mix in a little of the ecstatic fun yet the occasional terror that a carnival brings. Some inspiration came from Ray Bradbury's "Something Wicked This Way Comes" as that is how I see the best kinds of carnivals and closer to how I experienced them as a child. Faithful designs of Calliopes and Carousels, recordings of Clown Bulb Horns, Balloon's, evil laugh's from old creepy pull cord clown dolls, and more offer a unique pallet of the strange and colorful.

Included Sounds:

- Bulb Horn
- Bursting Balloons
- Carousel
- Circus Calliope
- Deflating Balloon
- Elephant Trumpet
- Pull Cord Bozo Clown Doll

3.8   Chemistry Set

For me there was always something intriguing about the chemistry sets of my youth, but the ones that came out decades earlier from the 1920's to the 1970's were even more so as there were not so many restrictions on the included chemicals.

For me a chemistry set represented an entry way into something akin to magic: experimentation and discovering how things interact and what new things can be created. The best was pretending to be the mad scientist in the lab developing some way to cheat death. Not to mention creating chemical reactions and, frankly, blowing stuff up.

As a sound designer I see relationships in the two fields which is why I wanted to include this childhood toy in my project and pursue what intrigued me as a child. I recorded sounds of dry ice bubbling in different liquids of varying consistencies; mixing chemicals and the resulting chemical reactions; Beakers; Flints; Bunsen Burners; Gasses...

Beyond that I wanted to include something special. After some research I found that a chemical molecules FTIR (Fourier Transform Infrared Spectroscopy) spectrum can be converted into time/amplitude and the vibrations of the molecules can be heard. I found some of this data online and converted them into wave forms. One was Sulfur Dioxide and the other Ethyl Ether. They have very distinct and sometimes eerie harmonics.

I have always loved the prospect of getting more sounds from science applications. Sound is another way to observe something and much information can be derived from it. I feel since we are visual creatures, sound has not played such a prominent role in science but thankfully, I do see that changing.

Included Sounds:

- Bunsen Burner
- Chemical Dropper
- Chemical Reactions
- Diethyl Ether
- Electrolysis
- Flint
- Osmosis
- Sublimating CO2
- Sulfur Dioxide

3.9   Constructor Set

Having frequented antique toy shops during the making of this instrument, in search of interesting vintage toys, one day I stumbled upon a vintage "Constructor" set from 1937, amazingly complete and in excellent condition.

I immediately snatched it up and brought it home not really knowing how I would make a sound instrument out of these pieces. I went to work building one of the projects in the frail and crumbling manual only to realize the building of it was part of the sound.

The project was a Ferris wheel. When it was finally completed (after some hours) I hooked up the ancient motor and started hearing squeaks and vibrations that, in my romantic brain, probably hadn't been heard in decades. It made me wonder how this constructor set influenced a kid from the 30's. These old toys are a real treasure for that very reason to me. Like everything else, toys, and therefore sounds, change in the world over time. Things that our grandparents heard are not what we hear today.

In a sense I feel like these old toys are coming back to life and offering something completely unique. Preserving these old sounds and bringing them to life through this process of instrument creation is very satisfying.

Included Sounds:

- Elevator Motor
- Constructor Crane Magnet
- Constructor Elevator Pulley
- Constructor Ferris Wheel
- Constructor Project Assembly
- Hammer
- Old Constructor Motor
- Tin Tool Box
- Vintage Roller Skates

3.10   Cuckoo Clock

The cuckoo clock was one of those toy-like objects in the house that you were not supposed to touch, but with all the intriguing features like long chains, pulleys, gears, chimes, pendulum, bellows, animated characters and colorful designs, it is a wonder how kids could refrain.

Then as you get a little older, you want to know how they work. And so you take them apart and attempt the impossible: putting them back together. I may have ruined many a clock in my time but it only prepared me for my current career of ruining more clocks. But this time I do not let those interesting sounds go to waste. Clockwork is so fascinating and irresistible to a child and hopefully these sounds can satisfy the inner child in some of us who never got the chance to tinker.

In this instrument I have recorded cuckoo bellows, gears, ticks and tocks, bell chimes, wind-up chains, music box movements and dynamics from several vintage cuckoo clocks. As always I have extracted the intricate tones from these things and exaggerated them for playability in their natural harmonics. Like all my toy instruments this playability really makes these toys come to life.

Included Sounds:

- Gedackt Bellow
- Gong and Hammer
- Mechanical Cuckoo Bird
- O'clock Music Box
- Winding Chains
- Clockwork Mechanics

3.11   Dragon Fairytales

As a kid I was told to "not play with fire" quite a lot, but as with anything kids are told to stay away from you can't help but being curious.

I took it a little further with this instrument building fire torches from sticks wrapped in cloth doused in Kerosene, recording furnaces, matchsticks, propane tanks, etc. In the middle of recording it occurred to me that my job can be a little dangerous at times even though the danger is a bit self-imposed. Luckily there were no serious issues other than melting the windscreen on one of my mics.

With this instrument I explored the possibilities of using those recordings for the creation of dragons and a fiery atmosphere that complements them. Sometimes with these instruments I try to create scenes purely with sounds, because in life music is everywhere, not just in the safe places.

Included Sounds:

- Makeshift Torch

- Matchsticks

- Furnaces

- Propane Tanks

3.12   Elastic Band

The versatile rubber band: It is cheap, you always seem to be able to find one lying around, and it can be used to create all kinds of interesting toys, musical and otherwise. When you are a kid and cannot afford a guitar, you make one out of a shoe box and elastic bands; or just anchor it in your teeth and stretch it from your mouth and use your skull as a resonator and mouth as a filter.

Musically it's best used like strings: plucking and bowing. I recorded some of those types of dynamics with different resonators - old cigar and wood boxes - using all different sizes of elastic bands and layering them.

I also found some toys that are powered by rubber bands and recorded those as well - rubber band airplanes and helicopters.

I combined all these elements into something like an elastic orchestra, or as the instrument is called, "Elastic Band".

Included Sounds:

- Cardboard Box Guitar

- Cigar Box Guitar

- Double Rubber Band Bass

- Elastic Jaw Harp

- Rubber Bow

- Rubber Band Airplane

- Slingshot

- Wright Bat Helicopter

3.13   Electric Train Set

My electric train sets were definitely my favorite things as a kid. To me they were more than just vehicles of transportation, they helped spark my imagination and I remember building worlds around them. There was this sort of romantic idea of how trains traveled around the world, through tunnels in mountains and over bridges of lakes, etc. I wanted to be a part of that and toy trains let it happen.

As a sound designer trains still fascinate me. So many interesting sounds come out of them. Toy trains have all those sounds, but miniaturized, and I wanted to re-create that imaginative world from them. These recordings include the miniature crossing bells and gates, drive wheels and chuffing steam of a locomotive engine, the sound and movement of the trains speeding around the tracks, etc. Alongside my old electric train set, I inherited an old 1950's vintage trolley toy, which made excellent sounds that I included in this instrument.

Included Sounds:

- Crossing Gate

- Drive Wheel

- Electric Train Transformer

- Locomotion

- Railroad Crossing Bell

- Railroad Tracks

- Tinkling Trolley Toy

- Trolley Air Horn

3.14 Fireworks

With this instrument I wanted to try to capture the bright, loud, complex and colorful excitement of what it was like lighting up fireworks as a kid.

With these sounds you can send fireworks to the sky with a press of one key on the keyboard and then create an orchestra of harmony and color with more notes while morphing in and out other fireworks. It is a richly vibrant musical light/sound show.

As with all of my instruments I try to give the best of both worlds: sample material that creates a high quality texture and gives the object its intrinsic sound characteristics, while also carefully finding lost harmonics that can be exaggerated to bring tonality to these toys so that they can be used in a broad range of music and sound applications. The end result is something extremely unique, intriguing, and interactive (just like toys).

Included Sounds:

- Ariel Fireworks

- Firecrackers

- Bottle Rockets

- Chinese New Year

- Ground Bloom Flowerworks

- M80 Firecracker

- Whistling Fire Fountain

3.15   Glow Brite

I got hold of a real vintage "Glow Brite" made in the early 70's. It definitely has its own personality of sounds. It has awkward features like dials, buttons, humming back light bulbs, vue pegs, etc. I've been drawn to these toys that have their own unique characteristics of sound.

To get the sounds from this device I had to get in close with the microphones, recording the light pegs, the sliders, buttons and knobs and even the buzzing hum of the light bulb. The tones that I used for these samples give this a somewhat retro analog feel that I think compliments this toy well.

Included Sounds:

- 25 Watt Lite Bulb Switch
- Building Glow Picture
- Falling Vue Pegs
- Glow Brite Console Buzz
- Glow Brite Screen
- Glow Brite Template Slider
- Vue Pegs Insert

3.16   Jack in the Box

When I started thinking about this toy project and the type of sounds I wanted to create, I came across a very old Jack-In-The-Box from the 1940's and I immediately had my direction.

The Jack inside was more of a creepy looking clown and it reminded me of being a kid immediately: I remember actually being afraid of Jack, and I think that was the entire point of the toy. They probably had this in mind in the 40's when they mass produced creepy clowns that came out of innocent and fun looking boxes.

The Jack-In-The-Box intrigued me because its origins go back quite far and some of the stories you hear about how it originated are indeed quite creepy. These toys sometimes represent a period in history when things were very different and it is interesting to go back there and discover that world through sound.

The materials of a 1940's toy, like the one I acquired for this Jack-In-The-Box, are obviously different than what is used today. A lot of old toys actually make it through decades and still work beautifully. This Jack-In-The-Box was well preserved but you could also tell it had been played with extensively through the years. And the beauty of recording these old instruments is getting those old details and dynamics that only time and years of wear and tear can create.

With this sound I separate each aspect of the toy and record them: rubber tines, worm gear, crank, spring, lid and latch, so you can have the flexibility of performing the toy in creative ways. And of course all the synthetic waves are derived from the actual harmonic content so the tones and character go together in harmony.

Included Sounds:

▪ Boxed Devil's Melody

▪ Clown Spring Surprise

▪ Jester Box Crank

▪ Pop Goes the Weasel

▪ Worm Gear

3.17   Laser Weapons

What toy box is complete without a "laser sword"! But if you've ever tried out any of the laser sword toys you find out pretty quickly that although they are fun to play with, they are often lacking in the sound department.

I felt the best way to approach this sound was to start from scratch. I researched and listened very closely to the original sounds from the iconic science fiction franchise. I found that there are a few distinct sound features of the laser sword such as the ignition and retraction, the hum and buzz and the clash and lock up. I experimented with different methods of achieving those sounds, and believe me I got creative.

I recorded one of those electric fly zappers with high voltage. I recorded TV cathodes and extracted the electric hums and pitched them similar to the original laser sword hums. Many electric devices were recorded and layered.

The amazing thing is that these sounds are not static recordings: you can perform your own laser sword fights. You can have an entire scene of these weapons with complete control. They can be used in music easily for interesting tonalities and played across the entire range of the keyboard. I love the flexibility of these sounds in that respect. Laser swords not only clash and buzz; now they sing.

Included Sounds:

- Ray Gun
- Stun Blast
- Electrostaff Malfunction
- Electrostaff Combat
- Photon Saber Clash
- Energy sword Duel
- Photon Sabre Ignition
- Energy Sword Lockup

3.18   Magnets

Sometimes I like to take liberties and use my imagination like a child with the sound that comes from these toys.

Magnets are not typically associated with sound, although there are some that make interesting sounds, no doubt, and I included them in this instrument as well. For the most part the magnetic force has no sound (at least not within the human range of hearing), but sometimes I like to imagine that I have bionic ears and can hear these forces of nature and translate them into the hearable range.

Magnets are another one of those toys that have a lot of play value and are really interesting to install sounds into. Some of the sounds I recorded and created are Snake Egg and other Rock Magnets, Attracting Coils, Electro Magnets, the sound of different metals (such as nails) being

attracted to magnets. I even wanted to throw in the sound of Earth's Magnetic Field which I reproduced as faithfully as possible using shortwave radio and other data I mined from the internet.

Included Sounds:

- Earth's Magnetic Field
- Electro Magnetic Current
- Ferromagnetic Materials
- Horseshoe Magnet
- Lodestones
- Magnetic Poles
- Rattle Snake Egg Magnets

3.19   Marble Maze

The marble maze always fascinated me as a kid – getting a marble from A to B using gravity – so naturally I bought and built one for my son and it quickly became his favorite toy…and inspiration for my next instrument.

Inspiration has come many times watching my son play with these toys. It reminds me of what it was like to be a child growing up in this strange world where everything is new. The sound of a marble rolling on wood has quite a pleasing sound. Even the intriguing vibrations on our long plastic marble maze gave very nice recordings for this instrument. There is a sort of motion you can hear in the sound, something like a Doppler effect as the marble goes back and forth, curves around bends, speeds up and slows down based on the design of the tracks. Clicking down wooden block stairs or spiraling down and dropping out of a funnel.

I experimented with a lot of different materials, recording methods and maze setups for this sound and I think the results turned out amazingly.

Included Sounds:

- Labyrinth Box Maze
- Marble Drop

- Maze Switch Track

- Pound and Roll Maze

- Spiral Maze

- Toy Roller Coaster

- Wooden Marble Run

3.20   Melodica

There are a lot of firsts as a child, and to spark an appreciation in music for developing minds the first musical instruments are simplified from complex pieces into accessible toys. Of course this simplicity, accessibility, and therefore cheapness of some toy musical instruments mean that they were hastily built with imperfections. The pitches of a musical toy instrument tend to not be quite exact and the parts very often vibrate, squeak or rattle. To me that is exactly what is interesting about them.

For this instrument I acquired many melodicas and similar instruments such as harmonicas, accordions, harmoniums, etc. and meticulously recorded their characteristics down to the sound of a keyboard thump or the breath of the bellows. Then I preserved, by extraction and simulation, their quirky imperfect and pitchy harmonics.

Like a toy these sounds give you easy access to many different characteristics all in one piece of software. It is a way to simplify an orchestra of melodicas, where you have added flexibility to manipulate and morph those characteristics together and extend the range and tonalities while bringing in other similar instruments to complement them, creating something completely new and powerful, yet familiar and charming.

Included Sounds:

- Bow Organ

- Concertina

- Harmonica 10 Hole

- Harmonica 16 Hole

- Harmonium

- Pump-Organ

- Toy Accordion

- Vintage Melodica

3.21   Pin Ball Machine

With so many parts, with such bright colors and interesting sounds, with such diversity within each individual Pin Ball Machine, the fact that they have their own soundtracks of music and sound designed elements; the idea to re-create a Pin Ball Machine for this project came very early on.

I guess it is true that I see in everything the potential to turn it into a musical instrument and the Pin Ball Machine is like the Cadillac of toy instruments that has a lot of potential for sound.

With this instrument I tried to separate the most distinguishing elements so that when I put it all together in one package it is not just a recording of all the sounds happening at once. This way you can perform individual elements and bring them in and out as desired.

I recorded the Bumpers, Tally mechanisms, Bells, Flippers, Steely Ball Rolling on the board, the Plunger, various Targets, various Solenoids, etc. and I re-created some sound effects that go along with actions like hitting a target or a bumper in the Pin Ball play field. This gives a real sense of playing a Pin Ball Machine but also feels very analog like a retro-style synth as well.

Included Sounds:

- Bullseye Target

- Pinball Bumpers

- Pinball Flippers

- Pinball Plunger

- Point Tally Machine

- Solenoid Startup Sequence

- Spinner Gravity Wheel

▪ Steel Ball in Playfield

3.22   Record Player Music Box

The record player designed specifically for kids by a famous toy manufacturer, I think, was one of those iconic toys of childhood: A complex device that played soothing music in rich tones to fall asleep and dream to.

In designing these sounds it is interesting to take the established tones and add a bit of fantasy to them like a memory or dream that changes the tone somewhat. Sometimes the way you remember things is not exactly the way it was but it is interesting to note that the brain of a child associates so many things, making so many connections, and therefore the sound of something just might be more fantastic than what you hear as an adult. It just might have more color, more imaginative tones, a bigger sound and more emotions that are mysterious and steeped in fantasy. This is the direction I take a lot of times and certainly with this instrument.

I intricately recorded the Arm Cartridge Tines, Turntable, Wind-Up knob, Switches, etc. then extracted the harmonics and took some liberties to try to bring some special qualities out of this toy.

Included Sounds:

▪ 80's Tine Arm Cartridge

▪ Fisher Price Turntable

▪ Record Player Wind-Up

▪ Record Player Yellow Switch

▪ Toy Turntable Resonance

▪ Turntable Brake Release

▪ Vintage 70's Tine Cartridge

▪ Whistling

3.23   Retro Bot

There is no device that sparks the imagination more than a robot. It seems since the invention of the computer, robots who obey and do things at your command were the dreams of many people young and old. For a kid they are companions and tools for imagination. These days robots are pretty common in our lives. Maybe not exactly with arms and legs like the retro robot toys and movie figures of the 50's and 60's but possibly just as, if not more, powerful.

Those retro futuristic bots of last century are intriguing for me in many ways because they do represent humanity's imagination into technology and the future and now in 2015 we can see the direction and result of those kids' imagination.

And, of course, some of them had some interesting sounds. The goal of this instrument was to recreate some of those iconic sounds from Robots like the static robotic voices of Cybernetic Soldiers, the gear driven wind-up sounds of retro robot wind-up toys, and more modern motorized movements of some robots inspired by science fiction films.

Included Sounds:

- Cybernetic Soldier
- Does Not Compute
- Assassin Droid
- Iron Giant
- Decepticon
- Retrobot
- Retro Robot Wind-Up
- Robotics Malfunction
- Trash Compactor Bot

3.24   Ribbed Drumbone

Getting a band together when you are 6 or 7 years old means you first need to go find some musical instruments. But you do not need expensive tools that are specifically designed for the purpose of creating music, because the world is a playground for kids and any object can be a useful toy for the endeavors of the young.

Lacking money kids do seem to have more fun creating things that give just as much if not more pleasure. What better object for percussion than a bunch of tubes of varying sizes and lengths.

For this instrument I recorded many tubes – even those that whistle when blowing into them or spinning them around. I recorded other dynamics of some ribbed tubes like scrunching them and pulling them apart, Sliding, hitting, popping them together, etc. There is definitely a bit of a tribute to that great percussive musical tube the Blue Man Group uses in their shows too, but this toy instrument goes much, much further.

Included Sounds:

▪ Boomwhack Tube

▪ Flexi-Ribbed Tube

▪ PVC Pipes

▪ Ribbed Sound Hose

▪ Slide Tube Pop

▪ Whirly Whistle Tube

3.25   Shortwave Synth Toys

There's no shortage of toy synths made for children/adults, and today it seems with the comeback of hardware synths they are getting more creative than ever.

I always find those homemade devices fascinating. Many are inventive, but with pretty simple controls. The only problem is having enough cash for all of them or even finding interesting ones for sale.

A benefit of a toy like this one is that I have recorded several different toy synths and devices and there is a lot of flexibility in one instrument to satisfy some of those desires for novel synth toys. I implemented some new ideas such as recording an old shortwave radio that can be played like a synth with all the buttons, dials, bleeps and radio noises. It goes without saying that dialing in to frequencies using a radio kit was an extremely enjoyable activity as a child and I definitely consider them a toy of endless enjoyment. Beyond that, I also wanted to combine some retro synth toys of the 80's with the shortwave radio to get a unique vibe out of this toy instrument.

The antique toy shop I frequented during the making of KINETIC TOYS had some really interesting old analog sound equipment and toys with really interesting knobs and dials and of course sounds that lent itself to this toy instrument well. I got some interesting sounds from a really old vintage hearing tester as well.

Included Sounds:

- Amoco Analog Audiometer
- Calcu-toy
- Electro Mini Piano
- Creative Music Machine
- Shortwave Geiger Noise
- Shortwave Power Switch
- Shortwave Radio Frequencies
- Shortwave Synth Toys
- Snap Circuit Synth

3.26   Steam Engine Wagon

I inherited one of the coolest toys I have ever seen from my father-in-law a few years ago. It is a steam engine toy made from Mamod. A Steam Wagon to be precise. It is sometimes funny to me how these old toys were considered safe for children back in the 50's.

Watching how these engines work is incredible. It definitely transports you to another time in history and is yet another toy that gives you that sense of the past. The way you get these things going is the same as any steam engine they made back in the 19th and early 20th centuries. It's fascinating and fun and so intriguing but pretty dangerous for young kids to do on their own. The steam gets super-hot and you better not have any leaks!

He had a few different steam engines besides and I got them all running, pouring some water into their boilers and heating them up. All they needed was a little oil and eventually I got the pistons to start moving up to full speed. On the wagon the pistons power the belt drive that turns the wheels and you can also steer using a tool. You can pull the lever on the miniature steam whistle and the entire vehicle is complete with lots of squeaking metal parts, the "put put" of the engine, the boiler bubbling, etc. I extracted all these wonderful sounds with extreme close up recordings to create this instrument. This is definitely one of my personal favorites.

Included Sounds:

- 3-Bell Steam Whistle
- Belt Drive
- Boiler
- Helmholtz Steam Whistle
- Oscillating Cylinder
- Steam Engine Piston
- Steering Wheel

3.27   Toy Percussion

To a child, basically anything and everything is meant to be banged on, slapped, and struck. Kids love percussion. I think it speaks to something primal within us and kids definitely pick up on it early on.

As a sound designer one is always looking for those interesting and quirky sounds of percussion to extend the pallet of sounds available in the world.

Rattles were the obvious first step in choosing ideas for this concept. Other ideas included small floor toms, a thunder drum that makes the sound of thunder when you hit a long spring attached to the drum skin. I recorded a mechanical monkey playing cymbals, a wobble board, a wooden frog, a plunger and more.

Many other elements were added in to create familiar yet unique aspects that improve upon each idea. This is a versatile percussive instrument that can be played tonally or not, and like all other instruments it is extremely fun to morph into and out of various other toy characteristics to achieve completely new percussive sounding toys.

Included Sounds:

- Baby Rattle

- Pots and Pans

- Cymbal Monkey

- Kaleidoscope Floor Tom

- Plunger

- Thunder Drum

- Wobble Board

- Wood Frog Percussion

3.28   Toy Piano

My son showed strong interest in music and sound early on, so when he turned three I had to get him a baby-sized grand piano (not to be confused with the classical baby grand piano). Somewhat selfishly, I knew this would also be a good instrument to record for my project.

It has all the quirks and imperfections of most miniature toy music devices. I opened this one up to record more than just playing the keys. I wanted to get interesting subtle aspects of the inside by recording and manipulating separate parts like the tines, the resonant body, the hammers, etc. Like a prepared acoustic piano but applied to a toy piano.

I also found some other toy pianos and uprights and various similar instruments to extend the pallet of piano characters and tones.

Like all my instruments the tonal ranges go much further than you'd find in any typical toy musical instrument. This is done with careful extraction methods and processing inside and out of KONTAKT.

Included Sounds:

- Antique Toy Celesta
- Baby Grand
- Child's Prepared Piano
- Miniature Piano Acoustics
- Kinderklavier
- Tiny Piano
- Toy Harpsichord
- Wood Piano Hammer

3.29   Train Whistles

Train whistles are diverse, interesting and have a lot of different personalities. Originally I was going to just include a train whistle in the Whistles toy instrument but realized quickly that there are many different kinds of train whistles each with distinct character and harmonics. Some people even have collections of them they have taken from old steam locomotives and some of those inspired this instrument.

I had a few train whistles as a kid and some of them sounded very good, like the wooden four-tone whistles which I also included in this instrument. I found a few other antique metal ones and decided to even create some more realistic ones from scratch as well as designing subtle aspects that are heard in some of these whistles like the chuff of the steam and the sound of the boiler.

There is a world of sound effects of train whistles that you can buy for electric toy train sets, but this instrument is like the ultimate sound library of train whistles for multiple applications. Of course whistles in general are pretty limited musically because they only offer one note. So this instrument, allowing you to play across the keyboard range, offers a plethora of tones while maintaining the interesting characteristics of each whistle.

Included Sounds:

- Boiler Blow Off
- Ahooga
- Locomotive Steam Whistle
- Multi-Chime Railroad Whistle
- Steam Locomotive Chuff
- Train Horn
- Wood Train Whistle

3.30   Ukulele

I got a rather nice wood ukulele on a trip to Hawaii. Toy-like but with a good build quality and intricately carved wood body. Like the ↑3.28, Toy Piano instrument, I wanted to extract many different kinds of sounds from it.

A toy is to be manipulated, experimented with, discovered and used in creative ways. In that sense anything could be considered a toy. A ukulele crosses that threshold, which was my goal for all of these instruments, to bring toys into the pallet of sound and music professionals.

A ukulele definitely has its own unique sound character with its nylon strings and miniaturized guitar-like body. The build quality also affects the tuning and tones as well, with the cheaper plastic ones giving steady pitches a run for their money. But all of them have a twangy plucky sound.

With this sound I experimented recording different dynamics in close mic positions such as plucking, picking, string buzz and vibrations, strumming, thumping the body, trying to get a complete picture of the ukulele so that when you use this instrument you have many options at your disposal that can be morphed and layered together for completely new sounds, or separated into their individual elements for clearer more familiar tones and objectives.

Included Sounds:

- Baritone Ukulele
- Hawaiian Picking

- Nickel Resonator Ukulele

- Pineapple Ukulele

- Plastic Toy Ukulele

- Strummed Uke

- Ukulele Body Percussion

3.31   Video Arcade

Video games in the 70's and 80's were pretty intriguing. Playing them with all those lo-fi pro-grammed sound effects along with the buttons, levers, springs, joysticks, even the satisfying coin mechanism of arcade games, meant that their sounds, although electronic, are tied to the hardware device giving those devices their own unique sound character. With this sound I wanted to get some of those quirky hardware and lo-fi sounds from video games I remember playing growing up in the 80's.

After gathering many iconic video games from that period I extracted the harmonic content of the synthetic wave forms beyond all the recordings of the hardware devices so you can really play these video games like an instrument.

Included Sounds:

- Blip Digital Game

- Blip Game Serve

- Someone Says

- Match 'Em Memory Game

- Yellow "Dot Eater"

- "Dot Eater" Joystick

- "Space Assailer" Fire Button

- "Space Assailer" Game

3.32   Whistles

There is a world of unique whistles out there; it is amazing how diverse they can be. Many of these whistles emulate birds or other animals and do a pretty amazing job at it. I was inspired to record and recreate some of them. And beyond just recreating them, make sure they have a complete musical playable range unlike whistles in general. It is a challenge to keep the character over the keyboard range but I think I succeeded with these sounds.

Some of the whistles I acquired and recorded for this instrument were the Acme Siren Whistle, a wooden slide whistle, a thunder and police Whistle, an owl and a warbling bird whistle, a kazoo, and one of my favorites that I got from Mexico: an Aztec jaguar whistle that was home-made and produces a very eerie growl/scream sound. There are a lot of interesting whistles like this that were discovered in ancient Mayan ruins - this one sounds a lot like one called the Death Whistle - one can only imagine what they were used for. Kind of crosses the line of what is a toy and something that is probably a little creepier, but I had to include it in this Whistles instrument.

Included Sounds:

- ▪ Siren Whistle
- ▪ Thunder Whistle
- ▪ Aztec Jaguar Whistle
- ▪ Kazoo
- ▪ Owl Whistle
- ▪ Police Whistle
- ▪ Warbling Bird Whistle
- ▪ Wooden Slide Whistle

3.33   Whizzers

It's probably safe to say that the spinning top has solidified its place in a child's imagination considering this is one of the oldest recognizable toys found in archeological sites dating back to at least antiquity. The fact that it still holds fascination in children as well as adults, and even into the world of science, means that it has been, and continues to be, important to the imagination.

I collected a few unique tops: an old string-pull wooden one that my step-father played with as a child in the 1950's; a louder retro tin and pump-styled one that hums as it spins from the 80's; a top that I made from small magnetic balls; an old metal gyro-top; a Rolling Friction Disk, and more.

It was a challenge getting these sounds as once spun a Top can be very unpredictable and quiet unless you can get close enough with the mic to record some of those hidden magical vibrations and tones. Spun on different materials I was able to get some great sound character from all these different tops.

Included Sounds:

- Antique Wooden Top
- Rolling Friction Disk
- Flying Saucer
- Magnetic Spinner
- Rusty Humming Tin Top
- Squeaky Gyro
- Vintage Gyro Toy
- Wobbling Metal Top

3.34   Wood Blocks

Part of what makes a toy good is its play value. Take a simpler toy like Wood Blocks: with a little imagination, a child has a toy that can be used for many different adventures in play. More importantly for me, they also have some nice tones, and with many of them you can create unlimited sound through collisions in movement and geometry.

Some of my favorite sounds were just from building different structures and knocking them down. I also set up long lines of Dominoes and followed the falling paths with my microphone. I acquired and recorded buckets of blocks of different shapes and sizes. The result is a familiar simplicity of wooden tones from the endeavors of building, destroying and rebuilding again.

Included Sounds:

- ABC Blocks
- Bamboo Chimes
- Bucket of Blocks
- Clip Clop
- Dominoes
- Falling Block Structure
- Hammer Block Shapes
- Rolling Cylinder Shapes

3.35   Xylo Polyphones

The Xylophone's simplicity means it is accessible to kids, yet has some of the most satisfyingly rich tones that anyone from any age can appreciate. What I have always found interesting about this instrument are the many different materials that they can be made from, giving each a different character while maintaining its simple build structure.

For this toy instrument I wanted to include some different materials to give a broader range of tones to play with. I actually spent the time making a homemade xylophone from some nicely cut pieces of wood I found. Many of the sounds were homemade: the crystallophone was made from wine glasses and the lithopone from large flat rocks I acquired. For each sound I added a dynamic like the wooden wobbling of the bars, the scraping of rock and for the crystallophone the counter dynamic being a Glass Harmonica which I created by rubbing the lip of the wine glass with wet fingers. The metallophone instrument was created from an old xylophone toy I used to have as a child. It was a 1970's "Rainbow" Xylophone that played a song as you pulled it around.

Included Sounds:

- Crystallophone
- Glass Harmonica
- Glockenspiel
- Musical Stones
- Phonolite Lithophone
- Rainbow Metallophone
- Homemade Xylophone

4   Credits

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