

SPARE PARTS ARE ESSENTIAL

By Mark Frauenfelder

CLUTTER IS A DEMOTIVATING ENERGY sapper. Every couple of months, when my desk gets stacked high with papers, gadgets, and periodicals, and my office floor has accumulated piles of books and packages, I conduct an area sweep collecting the things I don't have an obvious need for. Mostly I throw them in the trash or donate them.

But I don't get rid of everything. Some of the things I come across seem to plead for a second chance at being useful: "Save me! One day you'll be glad you did." These go into a plastic bin I keep in my storage shed.

What kind of things do I put in my spare parts bin? Anything that seems like it might come in handy one day: toys with electric motors, little speakers, switches, Altoids tins, those plastic bubbles used in vending machines to hold little trinkets, broken flashlights, and extra parts from previous projects. The box is a cluttered mess, but it's a contained clutter, and it's actually inspirational. When I poke around in it I dream of possibilities.

These components have come in handy on several occasions. When I made the Vibrobot (see *MAKE, Volume 10, page 119*) I had all the materials I needed on hand. If the project had required a trip to the hardware or electronics store, I might have never completed it.

Same for the Boing Box (*this volume, page 116*), a sound effects prop from the 1951 book *Radio and Television Sound Effects* by Robert B. Turnbull. Because I already had everything I needed, from a wooden cigar box to a spool of galvanized wire, I was able to whip it together in under an hour, and was happily plucking boinging sounds for the remainder of the afternoon.

In both instances I had to modify the project because the stuff in the parts bin didn't quite match the idea I had in my mind, or the plans as printed, but I believe the things I made were better, not worse, because of it.

It's been only a matter of months since I started appreciating the benefits of keeping a bin of spare parts, but master makers have long known how essential it is to the creative process. When I visit their workshops, I've noticed their stockpiles of



stuff with no immediately apparent purpose: parts, scraps, and retired gadgets just waiting for the day when their owner comes up with the idea that calls them into service.

As you look through the projects in this issue of *MAKE*, think about how you might be able to build them using the stuff you already have lying around. After all, that's how *MAKE*'s authors create a lot of their projects. They use the materials they have at hand.

By improvising, you'll not only avoid a trip to the hardware store, you'll end up making something more personal and possibly better than if you had followed the instructions to the letter.

*Take a photo of your parts bin, and/or your final creation, and post a link to it on our comments board at makezine.com/12/welcome. And feel free to add your photos to the *MAKE* Flickr pool.*

Mark Frauenfelder is editor-in-chief of *MAKE*.



KNOEND DESIGN...

Hailing from the city by the bay, Knoend Design is a collective of uber-talented folks who create beautiful furniture that pleases both the modernists and Mother Nature. Take the Lite2Go, for example. A totally self-sufficient piece, it arrives in special packaging that converts into a lampshade in about 30 seconds. So which came first, the lamp or the shade?

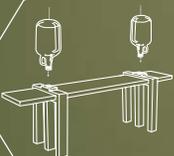
**Make
some
Thing**



SITS DOWN WITH CARLO ROSSI.

We gave Knoend a few empty wine jugs and they gave us the Solar Jug Bench. Not bad. Utilizing two empty 4L jugs, recycled truck bed liner and solar powered LED lighting, this bench is an eco-wonder. And it's a great place to kick back once the sun goes down and the jugs light up. But you don't have to be a master craftsman to make something from a jug. All that's required is a few empty bottles and a lot of imagination. For more jug creations and great wine info visit www.carlorossi.com. Now go Make Something!

*Carlo
Rossi*



MADEONEARTH

Report from the world of backyard technology





The Instruments of Invention

Bob Dylan was born in his hometown, but Duluth performance artist **Tim Kaiser** has a different musical hero: Harry Partch (1901–1974), an underappreciated composer who invented new microtonal scales for instruments he built himself.

“He was a curmudgeon and a brilliant musician who couldn’t stand convention and created his own,” says Kaiser, who also coaxes foreign sounds from far-fetched equipment made by hand.

As a teenage musician, Kaiser discovered a new auditory universe at the University of Minnesota and began assembling avant-garde noisemakers to suit his sonic tastes. His technique? Scrap parts and a junior high school electronics class.

Some 20 years later, Kaiser has made more than 150 instruments, including a stenography keyboard wired with the guts of a mini teaching piano, a green effect box with beehive lenses that loops a 2-second delay, and an old espresso bin called *TankPodDrum*, fitted with all things pluckable and tappable. Kaiser takes commissions, but saves his favorites for his own live shows.

TankPodDrum’s shell is a hollow, 6"-diameter, 14"-tall stainless steel vessel that Kaiser scored for 70 cents at a salvage yard. In his home studio, he used stove bolts to add a right angle fitting from a hot water heater, brass bells from a rotary phone, a comb of rods from a toy piano, music box tines, bits of chrome, and rack handles. When Kaiser bangs on the attachments with a mallet, the drum acts as a resonator. A pickup epoxied to the barrel’s interior connects to an amp or, if Kaiser is playing, a modulation delay that echoes and fades not only the pitch but also the frequency.

After Partch died, the American Composers Forum inherited the rights to his work and released more than 100 of his recordings on the Innova record label. “I’ve always dreamed of being on Innova,” Kaiser says.

Dreams apparently come true. In June 2007, Kaiser’s latest solo album, *Analog*, was released on — you guessed it — Innova.

—Megan Mansell Williams