

# Atomic Zombie™ Extreme Machines

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AZ newsletters

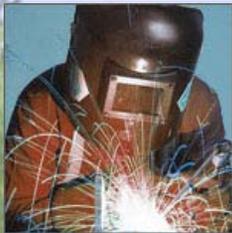
August 8, 2011

## AZTV

### A new Atomic Zombie adventure



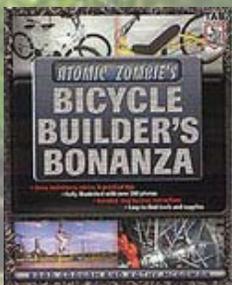
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WELDING BASICS



FRAME CHOPPING



We have recently launched a new AZ initiative - Atomic Zombie TV or "AZTV".

We have been talking about putting DIY bike building vids online for several years, and decided it's now or never.

Still without a house, we are still working in our camper tents and aging buildings, but thought working on some videos would help lighten the atmosphere as the temperatures soar so high some days that our keyboards begin to melt. Plus, add intense lightning, tornado and hail warnings and storms that surround us without warning to the scorching temperatures. It has been an interesting and challenging summer so far.

But, we are determined more than ever to forge ahead with more projects following the recently released [TimberWolf Recumbent Delta Trike](#).

AZTV will include bike building tips, tutorials, mini documentaries and fun stuff. We're new to this type of video producing so bear with us. We have a lot to learn!

As always, we welcome [your suggestions for webisodes](#).

Stay tuned to the Atomic Zombie builders forum and [Atomic Zombie TV YouTube channel](#). We hope you enjoy watching our adventures and learn more about the wonderful world of building your own bikes.

Cheers, friends.

#### Atomic-Zombie Extreme-Machines

High Definition version online now. Enjoy!



#### Working In The Field HD

[www.youtube.com](http://www.youtube.com)

Atomic Zombie TV - High Definition We have recently launched a new AZ initiative - Atomic Zombie TV or AZ TV. We have been talking about putting DIY bike bui...

Our first webisode!

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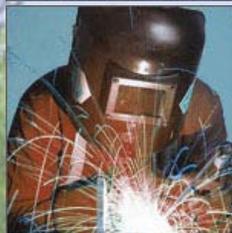
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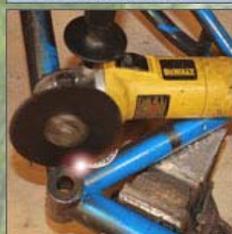
## New DIY project — TimberWolf Recumbent Delta Trike



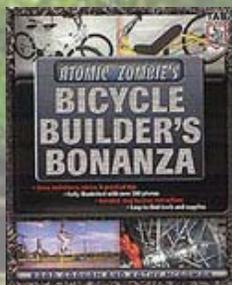
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The TimberWolf combines the agile and speedy characteristics of a racing trike along with the comfort and practicality of a shopping trike to bring you the best of both worlds. Having a seat height of 16 inches gives the TimberWolf a good stance for city traffic yet allows for some

very agile handling characteristics with the ability to take corners at a much higher speed than what would be possible on an upright delta trike. The TimberWolf also includes rear suspension with a cargo area behind the pilot's seat, allowing fragile objects to be carried without risk of damage.

The TimberWolf is also easy and inexpensive to make, since it requires only a few small machined parts along with common bicycle components. You will require only a basic welder, an angle grinder, hand drill, and the usual hand tools in order to create your own TimberWolf trike. Thanks to the simple single boom flat frame, you can easily modify the width or length of the TimberWolf to modify it to your own needs. The TimberWolf could easily become a fully faired velocar or a pedicab, or a multi-rider vehicle, or just about any other human or electric assisted vehicle you can imagine

The TimberWolf frame is extremely durable, yet light due to the thin walled square tubing design. There is only a single machined part on the entire vehicle - a small freehub axle adapter. Even the wheels and hubs are off-the-shelf parts, so you will not need to scrounge for any exotic or expensive components to build your own delta trike. [More information on this and other AZ plans.](#)



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## AZTV feedback from our viewers

We just launched our first video. Viewers and AZ Krew are already sending in their comments and suggestions. Let us know what webisodes you'd like to see in the future.

### From Facebook:

**Pete Jr Leather:** "And I whine about not having a working furnace! Your "warehouse" resembles my house - I'm not living in it either, just using it for storage of building materials, occasional 're-construction projects', and over 30 bikes and assorted parts in the house and shed, plus another 20 bikes in my parents' garage (they were not using it) and some 10 or so, frames/bikes at work. It is inspiring seeing you actually being able to really work in that 'commuting' method."

**Larry Brockman:** "Wow Brad that IS roughing it. Still - There is nothing like your own 120 acres. It's good to see you still putting out bikes even in those conditions - trikeman."

**Oscar Medina:** "Who doesn't love DIY videos?"

**Enzo Benvenuto:** "Now that is one hell of an idea. Everyone loves DIY. I do. Great work guys."

**Peter:** "RadBrad, during layup months you could show how to spoke wheels repair derailleurs, etc."

### From the AZ Builders Forum:

**Ibedayank:** "Brad, you just prove that you don't need a million dollar shop with one wall covered in snap-on, mac, and matco tools to get the job done."

**graucho:** "Ok, dang I love it there. You talked me into it. I'm putting in my AZ work application/resume then moving and joining your new Reality TV program. I've got 35 years in marketing and graphic media experience. 25 years of mechanical engineering experience, 20 years of welding and painting experience. Also the most important part of my resume - 53 years of swinging at flies, swatting mosquitoes, picking off wood ticks and



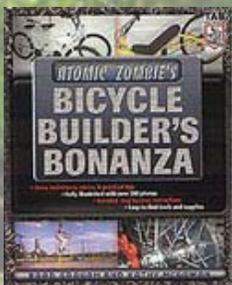
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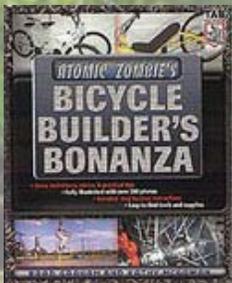
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from living in Minnesota, taking my body from 35 degrees below zero to 105 deg above with 90% humidity. OH, did I forget to mention an expert beer and wine brewer. HaHaHa gotta get through the cold winters. A guy's gotta do what he has to do to be a Reality TV star. Seriously, though, you two are very lucky to be there. Thanks for the tour!"

**Laus Deo:** "Brad, Kat: Vid was excellent. As a faithful Zombie I felt totally nourished. Look forward to many more in the future. Your new place is wonderful. Sooo many new adventures to stumble upon in the coming years for you both. Good on ya! I wish you both all the best always. Hey! At 3:40 in the vid you mention working on "Spirit short wheel base". OKAY, SO GIVE UP SOME INFO ALREADY!"

**calcustom:** "Thanks for the tour. When you get your buildings in and shop done you're going to look back and shake your head. Thanks again for your excellent plans and support. You, Kat, and all the Zombies rule!"

**Trike Lover:** "Really Enjoyed this video look into the heart of Atomic Zombie Central Command! Your patience and passion are commendable, to say the least. Hope you will make more videos, esp. during construction of projects, in the future.

"Two things, one a question and one a suggestion:

1) If you put a pony panel up where your 230 volt incoming line is, you could split off 120 VAC and run a grinder up there as well. Wouldn't cost very much, and might save some hiking back and forth. Just a thought.

2) Where on EARTH did you manage to find all of those five gallon buckets? (I'm assuming that in true Zombie tradition, you did not buy them, LOL).

Looks like you and Kat are making a great start on your Dream Ranch. Best of luck to you both."

**maddox:** "I wanna come over and live over there."

**DaveX10:** "Thanks for the tour! Was that bees I saw there too? Sure beats the city life."



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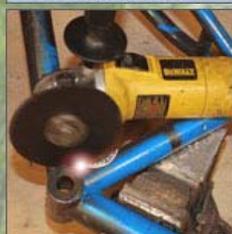
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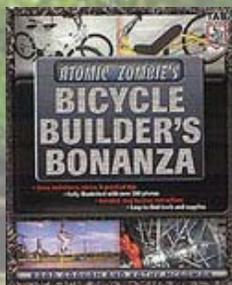
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Originally dubbed "The Tandpole", this eventually became a delta tandem

## The Lost Files

By Radical Brad

Not everything that comes rolling out of the AtomicZombie garage becomes a working project. Heck, sometimes prototypes don't even make it to the end of the

driveway! This week I found an interesting prototype in my lost files that eventually became the KyotoCruiser Sociable Tandem Delta Trike. Oddly enough, the KyotoCruiser started life in reverse - as a sociable tadpole trike.

As you can see, I managed to almost complete this sociable tandem tadpole trike, and even had a fully working transmission, which sadly I failed to document. Each set of cranks had a fully independent drive system, letting either rider choose his or her own 21 speeds or simply sit back and let the other rider do all of the work. The front cranks each ran to a freehub cluster on a mid mounted axle, which then ran as a single chain back to the rear wheel. The mid-drive axle was a 5/8 steel rod sitting on a pair of end bearings and one in the center to eliminate flex of the axle. The transmission system really worked well, and kept all of the derailleurs under the center of the frame out of view.

So then, what went wrong with the design? It was too narrow!

Yes, indeed, you can take all the measurements you like and then not realize until the end that theory is not always fact. My goal was a sociable (side by side) tandem trike that had a width of no more than 4 feet and on paper, it seemed possible, especially considering that Kat and I are not giants by any means. But sadly, there just wasn't enough room between the front wheels and each seat for two adults to sit comfortably. Being crammed shoulder to shoulder would mean under seat steering would not be possible, and even our knees might brush when pedaling. See, the front

*(Continued on page 6)*

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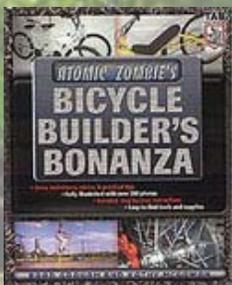
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The steering components were made from hollow machined tubes

wheels need a large amount of clearance in order to turn, a lot more than what would be needed on a single rider tadpole trike. Being so wide, the inside turning wheel would need to hit at least 60 degrees to allow for a decent turning circle. Dang!

The steering system was quite impressive for “the

day”

Most interesting was the use of hollow tubing in the front steering system to affix a set of 20mm hollow axle disc brake wheels to a steering knuckle made using brass bushings. Today, these parts are common, but almost 7 years ago, these hubs were almost unheard of, and would have never been available laced to a 20 inch rim. I ordered the hubs and made my own wheels using the disc brake 20mm axle hubs and a set of decent double walled rims. If you have seen our Warrior Trike, then you will recognize these wheels - they finally found a home more than 5 years later!



The 20mm axle hubs sat on a pair of custom machined hollow tubes that were welded at an angle to another tube that carried a pair of brass bushings.

The angle represents center point steering, and the system actually worked extremely well. Although I never finished the trike, the disc brakes would have been mounted on side arms and the end of the axles would have had a thread to affix a cap bolt to secure the wheel hubs onto the tubes. I still have these parts, and maybe one day I will revisit this tandem tadpole trike idea.

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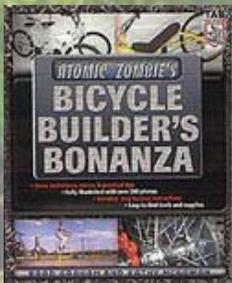
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The modified frame was just too wide to be "road friendly"

Realizing that the riders would not have enough shoulder room, I hacked the frame to make it wider and planned to move the front booms away from each other. Unfortunately, at almost 5 feet wide, the Tandpole just seemed unfeasible for road or path riding, so I stopped work on it. I cut up the entire frame and then went on to create the KyotoCruiser, a sociable delta trike with independent transmissions and a width of no more than 48 inches. There was something cool about the tandem tadpole, and at the time there were no other working examples of such a trike to be found on the net. I really wanted to build the first one ever, but I have seen a few of them in the wild now, and the glory of invention is now lost!

I might just revisit this idea again someday though, and have a newer sketch that places the seats over the front wheels so they can turn sharply under the seats, keeping the overall width to less than 4 feet. If I do this project again, it will also receive a small rear cargo space and independent front suspension so that it can become a motor assisted velomobile, possible carrying a full fairing. Time will tell. Well, that's it for this week - I will keep digging around in that dark corner of my hard drive labeled "The JunkYard" and see what I can dredge up for The Lost Files. ~ Brad

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