How To Build Your Own Pedicab

by **liseman** on September 8, 2008

Table of Contents

Author:liseman author's website
bicycles, gardening, and other important stuff

Intro: How To Build Your Own Pedicab

This Instructable will explain how I've built my own pedicab, as well as provide guidance for others who want to build a better one. Total cost was ~$300 + my own labor, and this is close to the equivalent of a model commercially available for $1995.

I currently use my pedicab in Austin, Texas. As of 9/8/08, it's fully licensed by the city of Austin. Woohoo!

Before we get started, let's define pedicab:
-Check out the Wikipedia articlefor an overview
-Look at Pedaltek's tow-behindfor a good example of the trailer type I built
-Read the comments on my Make posts describing the experience so far (hereas well as here) to hear engineering concerns commenters more intelligent than I have raised

Step 1: Plan and Experience

I learned from experience that this project is a bit too large to tackle without planning. So, start by sorting out exactly what you want to build. Be sure and ask yourself these and other questions:
-What requirements (insurance, permit, etc.) does your local government impose for pedicab companies?
-What's the terrain like in the area you'd like to serve? If there's a mega-hill separating the only 2 popular bars in town, that could be a problem...
-What should you learn before undertaking a project of this size? How much easier would welding skills, etc. make your project?
-Do you have the time and energy to invest in building this?
-Are you confident enough in your abilities at making things to strap unsuspecting bystanders onto your creation before darting into traffic?

And, it's a *very* good idea to consider gaining some riding experience for another pedicab service before endeavoring to create your own. This isn't like normal biking, no matter how quick you might be on your chosen style of cycle...

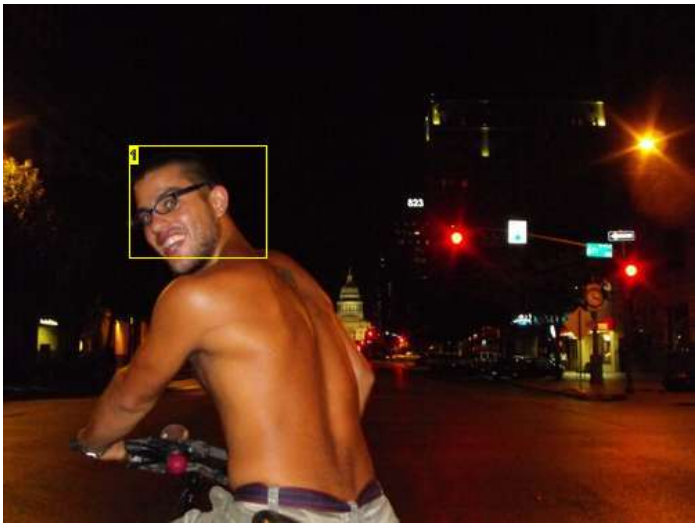
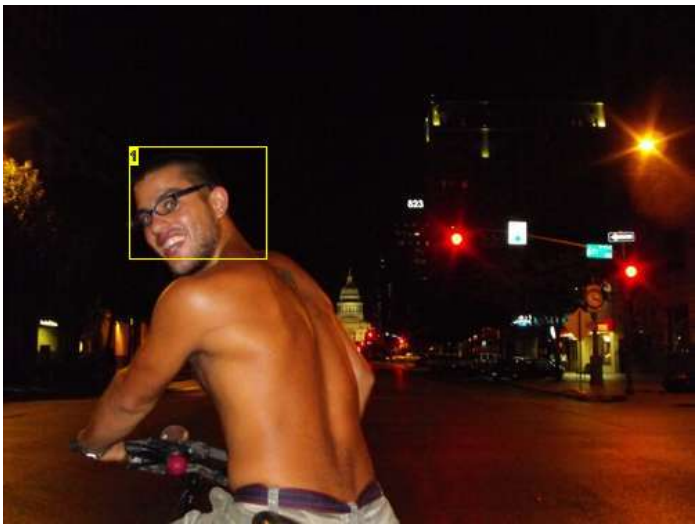


Image Notes
1. me happily riding for another pedicab service, on a manufactured pedicab



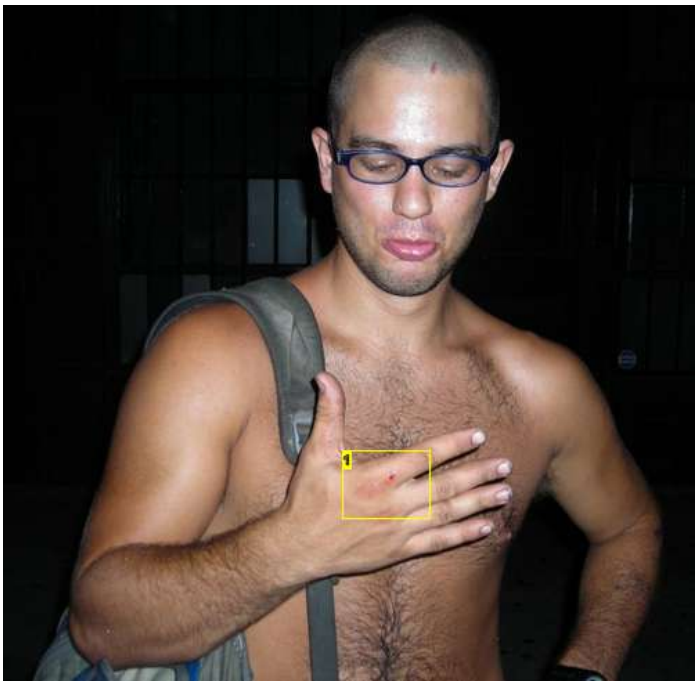


Image Notes
1. me exagerrating the damage done to me by punching a door as a drunk driver fled the scene of knocking over a scooter. reminder to self: don't jump in front of cars at stop signs if the driver might be drunk enough to not care about running you over...

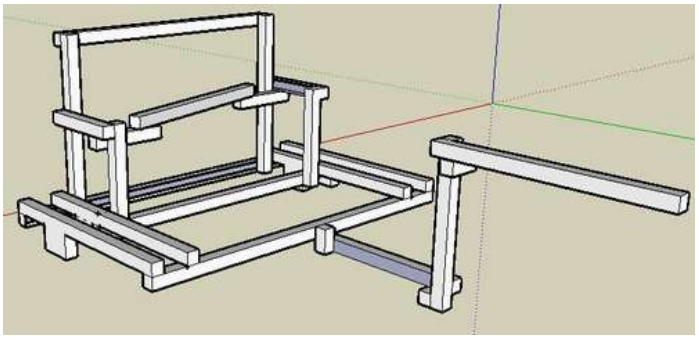
Step 2: Design, Plan, and Then Keep Designing and Planning

After you've decided on the style of pedicab you'd like and the general building style, get to work creating a model. Here's a fly-around of an earlier version of my pedicab, sans wheels:

You can download the SketchUp model here.

Key considerations to think about:
-Weight distribution, in front of and behind the wheels
-Strength of tongue (connection between pedicab and bike)
-Passenger comfort
-Aesthetics
-Most importantly: stopping ability!

Again, it really helps to ride for another service or otherwise establish an intimate familiarity with existing pedicab designs before jumping into this.



Step 3: Make Mistakes, and Learn From Them

Now, I didn't create the model in the last step right away. In fact, it was a matter of several drafts before I took modeling beyond pen and paper. I won't say this is the only way to do it, but really getting my hands on and making (low-cost, often reversible) mistakes was what worked for me.

Check out the pictures and comments to learn from my design flaws...

Image Notes
1. thin thin metal. didn't come perforated, so it took forever to drill all the holes
2. surplus army tent
3. used mountain bike tire

Image Notes
1. newsflash: metal can be sharp:-)

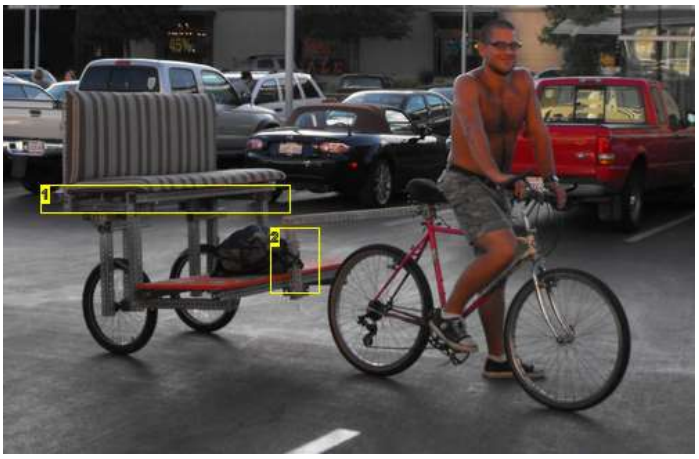


Image Notes
1. center of gravity much too high
2. blunt metal too close to passengers for city of austin's comfort...

Image Notes
1. not strong enough without reinforcement

Step 4: My Specifics: The Parts

Now, I'll dive into specifics of my design. Again, not the only way to build a pedicab and not the best. But, I am pretty happy with the results:)

Here's what I used to make this monstrosity:
-50-some feet Telespar (perforated galvanized steel tubing). You can read about its structural properties here.
-~12 feet 1.75" Telespar, to reinforce the Telespar between the pedicab and the bike
-60-odd bolts, mostly grade 5. ~45 of length 5", 5 @ 2.5", and ~10 at 7". Diameter 3/8", except for 2 9/16" grade 8 bolts used on connection to pedicab
-60-odd locknuts, same diameters as bolts
-~150 flat washers, 3/8"
-3/4" plywood
-bright orange paint
-bright green duct tape
-bright blue pool wacky foam float things
-zip ties, for securing pool things

-female rod end, for pivot point between bike and trailer. I used this one(if link doesn't work, type in 'tf7' to load the product info page)
-high-visibility red blink lights
-screws, staples (size unimportant; use washers with screws to prevent from screwing through hole)
-outdoor fabric, a couple yards
-mildew-resistant stuffing, 2" thickness, couple yards
-spray paint, old molding (kind you'd put along a floor), and stencil (to create dirtnail sign)
-overly-priced non-slip tape (city regulation, for the floor)
-slow-moving vehicle sign (ditto)

And, I suppose wheels are helpful:) If you don't have bureaucracy to navigate in your metropolis, scavenge some strong wheels from a BMX bike. After getting shot down trying to get Craigslist wheels to pass inspection, I found the bike shop at which another local pedicab company buys wheels and ordered the same ones. At ~$130, the wheels were the most expensive part of this project.

I sourced the Telespar from a local safety sign company for ~$1/foot, and everything else is available between hardware stores, megamarts, and fabric shops.

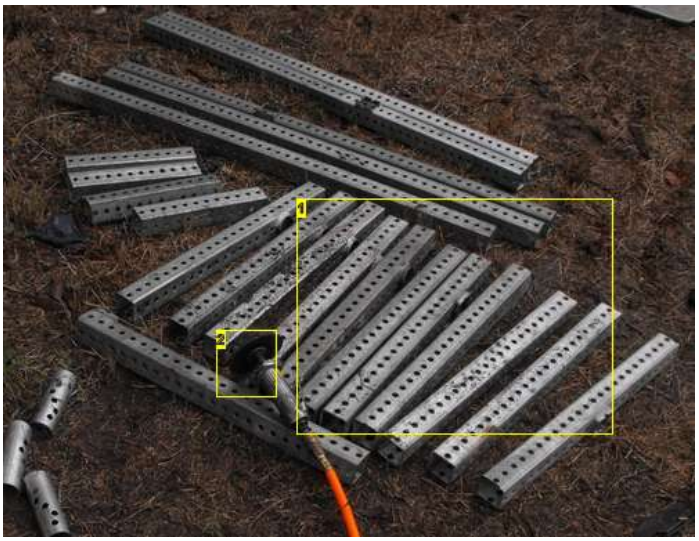


Image Notes
1. a beautiful pile of telespar
2. metal grinding wheel

Step 5: My Specifics: The Tools

The main tools I needed for this project were:
-Various metal grinding wheels. The most useful was the 10" one that worked with my cut-off saw. Careful with the sparks!
-A mask and an outdoor work environment. **Breathing vaporized zinc, a product of cutting or welding galvanized steel, is a really bad idea. After reading this account, I particularly realize I should have worn a real tiny-particulate-filtering mask.**
-Various vice grips and wrenches, mainly 3/8" and 9/16"
-drill with various bits, sized from below diameter of smallest screw to slightly larger than diameter of 3/8" bolt head

Image Notes
1. this isn't a fashion show, folks:)

Image Notes
1. saw with barely-visible blade. they're called abrasive blades and specifically marked for use with metal

Step 6: My Specifics: Making The Structure

This style of building is called grid beam; you can learn more about it here.

Instead of welding, I basically just had to cut my Telespar to desired sizes and then use 2-3 bolts (with locknuts and washers) per intersection to create stable joints. To make this process doable, don't tighten any of the nuts until you've got all the bolts and nuts of an intersection inserted.

For sizes, open the Sketchup model from step 2. Note that this version allowed an unacceptable amount of bending between the cab and the bike, so I revised this tongue in the final version.

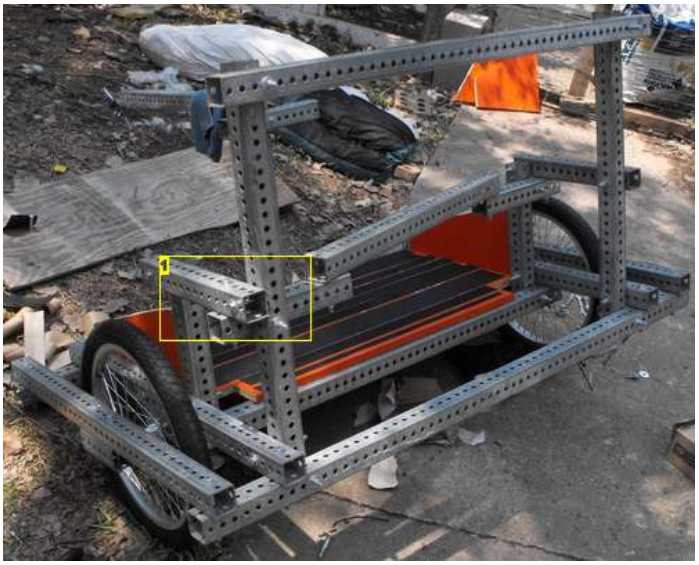
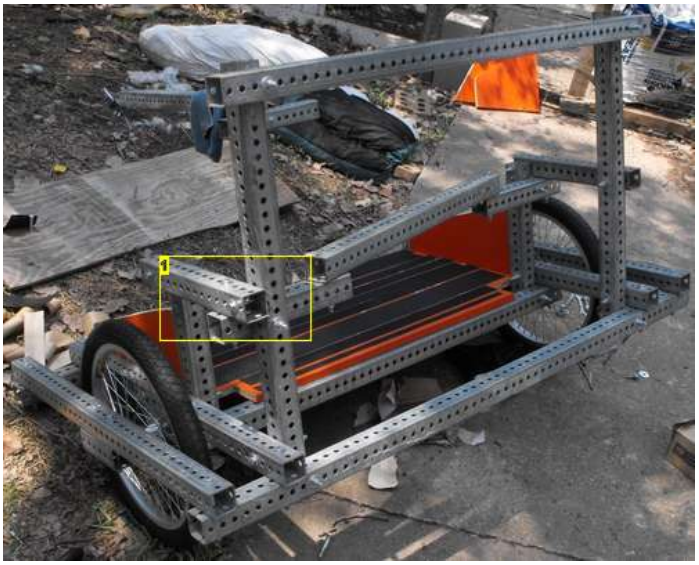


Image Notes
1. note the 3-way joint: provides 3-axis right angles, nice and strong



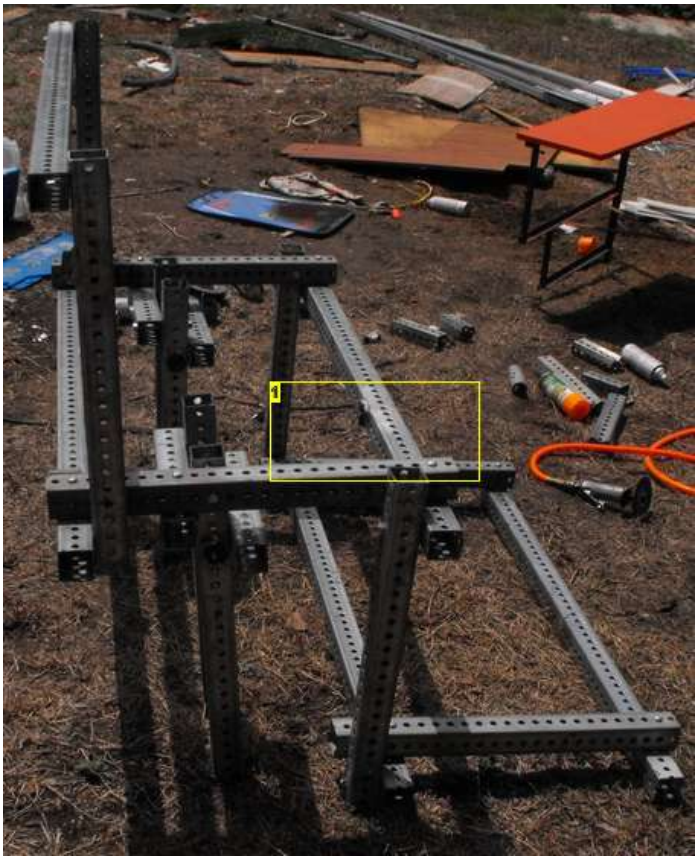


Image Notes
1. not final design, but this does who the joints well

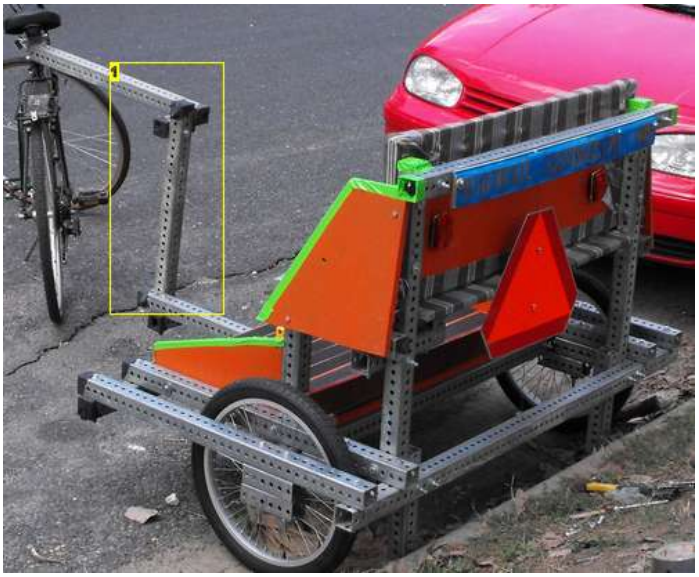


Image Notes
1. this was replaced with a more-stable variation on the final version

Step 7: My Specifics: Notes On Tongue Design

The area of the pedicab in front of the footrest gets a LOT of force applied to it: it's the end of a lever with your passengers at the other end.

My first designs bent so much that one actually bottomed out when I tried to brake, which would not have made for a very customer-friendly experience or me-friendly tip.

So, to arrive at the final product pictured, I found a couple of books on car trailer design (specifically, volumes 1 & 2 of M. M. Smith's "Trailers: How To Design & Build"). You can also check out what trailer hitches look like or just reason through some of the key points:
-load is spread between multiple attachment points to trailer
-tubing that bears the full weight of the pedicab is reinforced
-multiple grade 5 bolts secure each part of the tongue

Experiment with design on this part, and let me know what you come up with!

Image Notes
1. ~6" pieces, front to rear, reinforcing and attached to vertical
2. under the beautiful foam, also reinforced top and bottom
3. tube doubled (1.75" inside 2") to increase strength. bolted together with 2.5" bolts.
4. tube doubled, as with piece running to bike

Image Notes
1. these pieces curve to attach to the pedicab 31" apart.

Step 8: My Specifics: Attachment To Bike

My system of attaching the trailer to the bike basically relies on the female rod end to pull the full trailer's load via its attachment to my bike. There are definitely many other ways to do this; I want to adapt this to include redundant attachment between bike and trailer for a future version (ie 2 bolts instead of 1)...

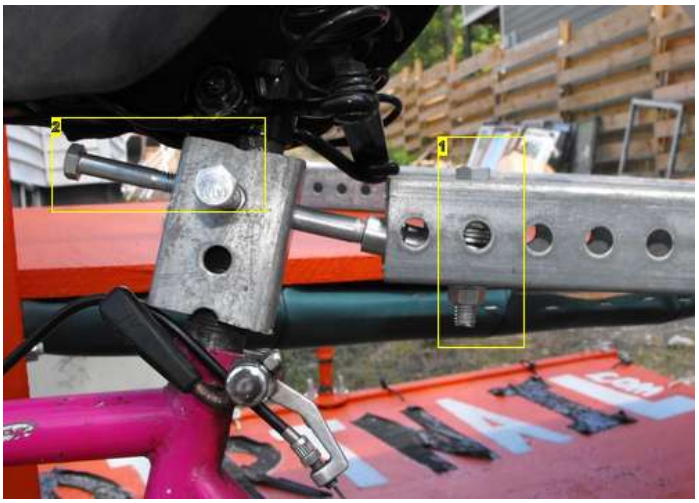


Image Notes
1. bolt through middle of rod end
2. use shorter bolts to avoid uncomfortable chafing

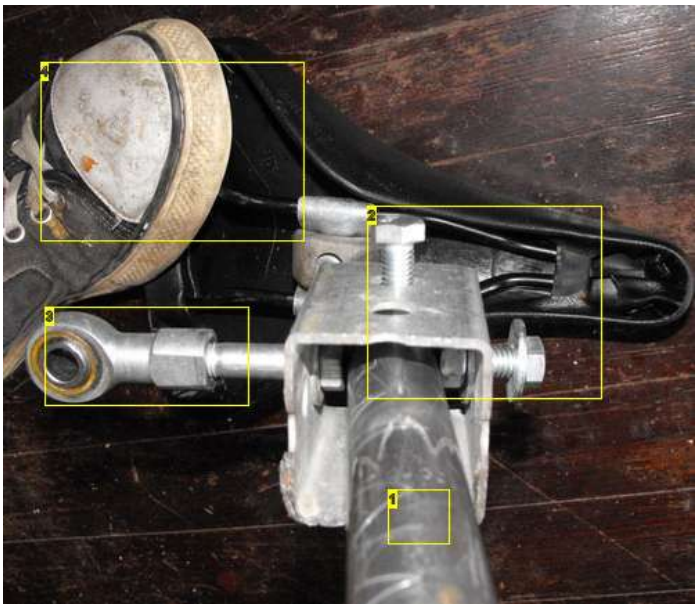


Image Notes
1. seat post
2. bolts through a piece of telespar, with a washer inside. tightening the bolt while

holding the nut squeezes the bolt against the seatpost. locknuts and double-walled telespar used on final version
3. female rod end
4. well-used pedicab shoes

Step 9: My Specifics: Aesthetics

Love or hate the look I've arrived at, here are the basics of how I achieved it:
-3/4" plywood painted with exterior latex paint is more than strong enough for the floor, seat, and back surfaces
-outdoor fabric is stapled to the board on one side, stuffed with 2" thick mildew-resistant foam, and then stapled to the other 3 sides. pull the fabric taut around the foam to give this a nice overstuffed look
-zip ties with bits of pool foam covered the ends of the metal well enough for the city of austin's standards
-green neon duct tape makes the design louder and covers the edges of the plywood

Image Notes
1. a previous design utilized bolts captive under the cushioning. i scrapped this for normal screws in the final version

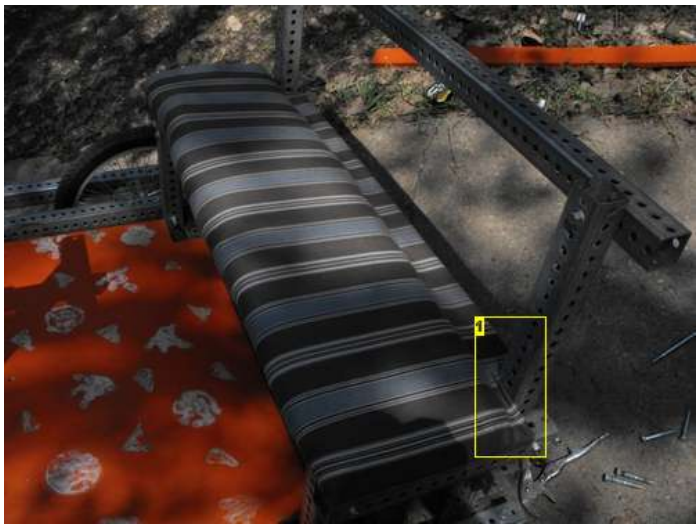


Image Notes
1. back ~3" isn't stuffed, because the seat back overlaps this area

Step 10: Next Steps

Thematically, my next pedicabs will get safer, lighter, and faster.

Here's what I'd call the current 'gold standard, the Velotaxi:

Sure would be nice to have an open-sourced version of that, huh?

Good luck; let me know if you build your own pedicab!

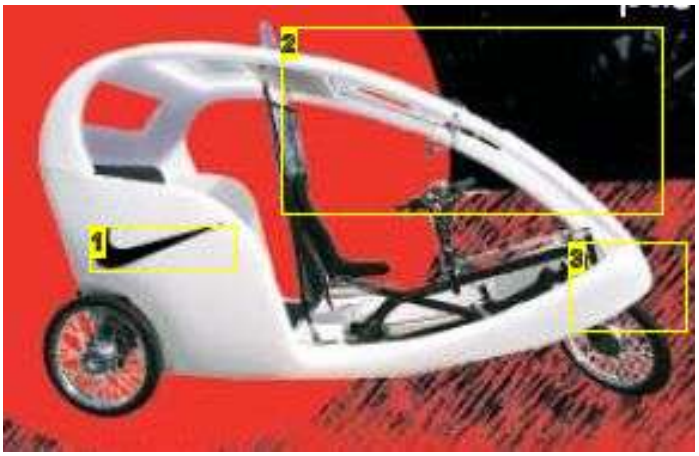


Image Notes
1. stupid corporate logo
2. recycled plastic body
3. sexy aerodynamic design

Related Instructables

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Comments

50 comments **Add Comment** **view all 57 comments**

dulciquilt says: Feb 28, 2010. 10:32 AM **REPLY**

To those saying remove this ible, I just want to say we have a quadribent from blackbirdbikes.com with one hub motor added. So far we've only been able to get it up to about 13mph, but have never had a bolt come loose on the converter and there are several bolts. We have had them loosen on the EZ bikes, but any biker knows to check all your bolts before riding and carry wrenches so you can check them periodically.
I believe most cars are also held together with nuts and bolts.
We checked into building a micro car and you can not get a license if it is deemed unstable. I would think same rule applies to pedicabs.

irwoman says: Sep 15, 2008. 7:27 AM **REPLY**

The leaders of the industry must all agree that this is so unsafe! Just check them out. All schematics state structured framing is TIG weld. Placement of seat a difinite danger. Author even admits bottoming out on first try. Nuts & Bolts??? A bolt will snap in a high force collision. This is an accident waiting to happen. Cannot believe it was licensed in Austin. Competion is welcomed in the field of building pedicabs but anyone doing so really needs to do their homework and check out industry standards.

digitalmouse says: Nov 23, 2009. 2:13 AM **REPLY**

"...leaders of the industry must all agree..." erm hello? What leaders of industry are there in pedicab construction? I bet you can't name three. I'm *in* the industry and I can't name three 'leaders'. We all do the best we can with what we have to provide a safe and comfortable journey. One of the best pedicabs out there is a model of an Indian pedicab, which is a cycle bolted or welded to a cab frame. I've ridden many of these, and they don't conform to any 'standard' I know. They are just built strong.

Of course a bolt may snap in a high force collision. Since a pedicab does not go very fast to begin with, it won't be because the cab is unsafe, but because the car/truck crashing into them is at fault. People have the mistaken impression that pedicabs are meant to be as safe as cars. Bzzt! Wrong answer! But thanks for playing.

Pedicabs are meant to be light, enviromentally friendly, comfy alternatives to motorized taxis or walking. Nothing more, nothing less, aside from making sure the cab can withstand the day-to-day usage of it's driver and riders. *NO* pedicab can withstand a 'high force' collision.

That's like saying bicycle helmets are designed to protect you from death. Below 20kph you'll likely fall on your hands and knees. Above 20 kph (like being hit by a car), no cycle helmet in the world is designed to save you. It comes down to skill of the rider or sheer luck of survivability.

"...this is an accident waiting to happen..." if so, then keep the cars off the streets in town! :-)

Lokisgodhi says: Oct 22, 2009. 10:43 PM **REPLY**

"A bolt will snap in a high force collision "

That's garbage. It's all the matter of choosing the proper grade hardware. Obviously you've never heard of the SAE J429 standard, grade 0 to 8, for bolts.

Bolts hold wheels on to automotive axles for thousands of miles bouncing over dirt roads without shearing off. They hold leaf springs on to frames while resisting hundreds of ft-lbs of shearing force during hard acceleration or deceleration. They hold girders together with millions of tons pressing down on them.

digitalmouse says: Nov 23, 2009. 1:58 AM **REPLY**

Speaking as a pedicab driver in Copenhagen, Denmark, and as a recumbent trike/velomobile rider, I'm annoyed at all the crap slung around here - especially be people who have never driven pedicabs themselves.

Look people, pedicabs in any shape are not *deathtraps* if the go slow and are built strong. The author, in making his own trailer pedicab, has built something that has obviously stood the test of time, hasn't maimed anyone, and with proper care will probably keep him healthy with a pocketful of extra cash each week for years to come.

We should be congratulating his creativeness, not degrade him. You killjoys do little more than pump more CO2 into the atmosphere. I suspect a majority of the complainers either don't cycle, never actually tried to build something like this, or just prefer to jump on the bandwagon because it's not 'pretty looking'.

One point of contention: the Velotaxi should not be the 'gold standard' - yes it looks nice, is quite comfy, but it is fraught with mechanical issues and requires a motor to get the most out of it due to it's heavy weight. Perhaps consider the Brox pedicab as a viable replacement for the future. It would not hurt to copy and spread that style of cab around the world.

Good luck and drive safe!

-jimm

BedroomEmperor says: Jul 14, 2009. 3:13 PM **REPLY**

Liseman, aside from the functionality or safety issues (which I'm sure are valid), I am just glad to see that someone else is into grid beam! I have the book "How to Build with Grid Beam," and I'm about to get started exploring building furniture and structures. I'll stay away from building vehicles, since I don't know the engineering aspects involved, but I'm sure can build a computer/home recording workstation and a few bookcases! Have you considered using aluminum for your pedicab, or prototype?

HedgehogNinja says: Apr 18, 2009. 10:02 AM **REPLY**

Awesome! I've been planning to get my license from the state of Missouri. Your picture has been my inspiration.

dÃ-ka says: Jan 18, 2009. 2:14 PM **REPLY**

I had the pleasure of riding in this fantastic pedicab last night, and guess what?! I DIDN'T DIE! Luke was kind enough to take us much further than many of the pedis in Austin are willing to go. (He picked us up west of Lamar.) The ride was comfortable. The conversation was great. I felt totally safe the whole time. And it was the ultimate nerd celebrity sighting since I recognized the cab from the instructable! Awesome job. Thanks again for the lift!

liseman says: Feb 2, 2009. 7:09 PM **REPLY**

thanks dika! it was a pleasure having y'all ride:)

TekGremlin says: Dec 8, 2008. 1:25 PM **REPLY**

For all the people out there claiming this would not be safe, I am sorry but although I have read your points I simply can not agree. Although he should keep an eye on the bolts, they are locked in place. Even though welds are the standard it does not mean everything else is garbage. As for triangles sure they may be stronger, but so what, if his design is strong enough who cares, same goes with round tubing vs square. People should keep in mind this thing is pedal powered not a race car. I for one would be happy to take a ride in it, and if I am ever in Austin be sure I will be keeping an eye out for this guy. Sometimes I think people just like to use the comments to rip on people because they are jealous someone else had the initiative to do something besides just read about building stuff.

zjharva says: Sep 10, 2008. 5:16 PM **REPLY**

hey good instructable, but not to be mean but if i had to chose between your pedicab and a company built one, I would definitely chose the company built one. Although it would be a good conversation starter with passengers "did you make this?!"

Dr_Stupid says: Sep 11, 2008. 12:09 AM **REPLY**

it's not like you're going 90mph down the road. It's a bicycle. one built of box tubing isn't going to be any less safe than a commercially made one...it's as ugly as sin, but there's nothing wrong with it. This is why they should tech mechanical competency courses in government schools, because anyone who's had a shop class will tell you there's nothing wrong with that ride, other than it's ugly.

Fred82664 says: Oct 20, 2008. 8:05 PM **REPLY**

HUMM a little bit of chicken wire molding with a layer of fiber glass matting and Bondo , slap a cote of paint on. It cold look like a coach meant for Cinderella

zjharva says: Oct 21, 2008. 2:32 PM **REPLY**

lol!

xenobiologista says: Sep 11, 2008. 8:38 PM **REPLY**

I know a guy who built a cargo trailer out of steel electrical conduits. It looked pretty nice - would that be strong enough for something like this, if you used a lot of it?

Dr_Stupid says: Sep 21, 2008. 6:54 AM **REPLY**

probably, if it were heavy gauge conduit. However, I'd make sure to take geometry into consideration and build it with lots o' triangular supports. I build a bridge that weighed about 2oz out of balsa wood that supported 125lbs, but that was because I took into account that weight had to be distributed to all sections of the structure to support so much weight. Essentially you "could" conceivably make such a cab out of balsa wood, if you did the same and took that into consideration. Remembering that the length of a span loses its ability to support weight as he spam increases, therefore every time you double the length of a section it's wise to build a support. (I'm not engineer, so I couldn't tell you the exact ratios of a given material), but that's basically it in a nutshell. To do it out of conduit, would probably require some pipe notching to get the angles right, and some good welding skills to make sure a weld didn't break, and because it's conduit, you can't get it too hot, or you'll weaken the metal, thus defeating the purpose of a support joint.

deputydawg says: Sep 15, 2008. 10:53 AM **REPLY**

I hope everyone reads my input! I may be saving a life! Looking at the design from the standpoint of an engineer and certified welder this model fails miserably. No engineer or welder would put his stamp of approval on it. The industry standard for bikes as well as pedicabs has always been reenforced steel tubing with MIG/TIG welds since the beginning of time. Never seen a bike constructed of Telespar perforated tubing. Nor a trailer. Reason? It is used for sign posts because it "breaks away" on impact! note these specifications: The reason is simple. The Telespar system was engineered specifically for sign-support use, then perfected with the help of traffic-control professionals. B R E A K AWAY A N C H O R A two-piece breakaway system is easily created by adding a 12 gauge outer sleeve of the next larger size tube to the original anchor base. This additional sleeve, approximately 18" long, provides a double wall thickness to accomplish the breakaway function. SLIP BASE BREAKAWAY SYSTEM AASHTO standards for structural supports of highway signs require the "change of velocity standards for 1800 pound vehicles" be met. The Slip Base meets those requirements as put forth in the NCHRP-350 report as the post will break off. Today most vehicles weigh more than 1800 lbs! So if you get hit from any direction your pedicab will shatter and just blow apart and more than likely someone will be seriously injured, if not killed. There is not any vehicle made using this material and to do so is, well just dumb! All manufacturers of pedicabs follow the standard use of steel tubing with their units as well as the hitch. The only nuts and bolts found on these are for the wheels and hitches. It's common sense that bolts loosen, and crack or just break on force. And Telespar? Well read the specs as listed above . . .if it was safe would the industry not be using it??? your prototype itself is all wrong as far as design and balance as well as the safety aspect. Not to say it looks like a giant erector set! Expect to bottom out or flip. And just blow apart! This pedicab is an accident looking to happen, and it will over time. Best to use it at home or just park it and not risk injury to another! I suggest maybe you take a class in design, engineering and welding and buy a welder and the proper materials. You would be wise to scrap this project and just start over or hire someone who knows what their doing. I feel pretty strong that your insurance company is not aware of the materials you used as they would never cover a vehicle used for public transportation made with Telespar. It's cheap because its only used by highway departments in the erection of sign posts! You said you doubled it??? One peice inside the other??? That only makes the breakaway that much quicker. It is my understanding that you have recently received your permit. I hope all the other pedicabbers read this and pass it on to their peers, friends, family and fares. I am sending a report in to the proper authorities whom I feel were badgered into giving you your license to kill.

Fred82664 says: Oct 20, 2008. 8:39 PM **REPLY**

Well now MR DEPUTY DWRAG I really do not think that the store bought or factory made carts would stand up vary well in a 1800 + LBS mass impact traveling at 5 MPH up to 45 MPH { general City speed limits} If you would be so brave to test them with your self I am sure there are may here that would just love to use there cars and seeing you in one ! If my calculation s in Physics is right. I would bet you would be a mess of broken bones and in need of hospital care at least six months. are you willing to put your but where your mouth is?

liseman says: Sep 16, 2008. 12:05 AM **REPLY**

Hi deputydawg, Thanks for your feedback. I think you're misunderstanding how I'm using the Telespar material compared to signposts: breakaway bases are (appropriately enough) designed to break away, but this isn't a property of the Telespar. This is achieved via a weaker connection between the base piece, embedded in the cement, and the signpost's body. Look at a stop sign and you'll probably notice a thin bolt about an inch above the ground... In response to some of your other comments: -Yep, it does look like an erector set. Pretty cool, huh? -With my wheels fully outside of any area on which passengers can sit, my design is more stable than many trailers, including Pedaltek (a model used prominently in Austin) -And, the pedicab's been working swimmingly for a week of riding w/ as many as 3 (chubby) passengers! Happy building, Luke

deputydawg says: Sep 18, 2008. 11:10 AM **REPLY**

You really have yourself convinced that this is not an unsafe material. Like I said no engineer or welder would put their stamp on it . . . . . You openly admit you bought it from a sign post company. I have over 35 years experience in welding and materials. You were just trying to go the cheapest route. It's just like they always say . . . . if your going to build it you need the right material and equipment. Telespar is not a suitable nor is it a safe material to use. Common sense and a little research would tell you that!

Fred82664 says: Oct 20, 2008. 9:07 PM **REPLY**

AWWWW! such concern in the man profit "You were just trying to go the cheapest route." Perhaps you would become an investor for the the small business man. I am sure he would not turn down a fat check of $50,000.00 investment for equipment improvement.

sasquatchbmx says: Oct 3, 2008. 7:18 PM **REPLY**

well its a good i dea i like your thinking your final design looks kind of like a big erector set, simple but sturdy and well designed

Cheeno says: Sep 24, 2008. 9:14 AM **REPLY**

I think rather than being so negative with this person and manifesting something bad to happen, why not? just enjoy their idea and offer only constructive criticism. Good Instructable, thanks, it really works nicely as a basic idea to work from. Cheers from Canada!! :)

noahh says: Sep 9, 2008. 2:17 PM **REPLY**

"velotaxi is innovative answer to **increasing** inner-city traffic". Huh? Isn't more traffic a bad thing?

deastructionator says: Sep 22, 2008. 4:12 PM **REPLY**

what it means is that it is replacing cars for less congested traffic in close areas therefore increasing closeness and sustainable use of metropolitan areas where one feels quite alienated

xenobiologista says: Sep 11, 2008. 8:39 PM **REPLY**

I think they meant "Velotaxi is [an] innovative answer to [the problem of] increasing inner-city traffic". Trishaws used to be more common in Malaysia when I was a little kid. Now the only people you see riding them are white tourists. Maybe they'll make a come-back with the price of petrol going up.

liseman says: Sep 9, 2008. 2:59 PM **REPLY**

hi noahh, i think that sentence lost something in the translation from german: i'm hoping they meant "increasing existing city's capacity for traffic: more people in small bikes means fewer people in big cars." definitely a foggy and wishful connection, but i could definitely see people finding these more attractive inner-city vehicles than hummers!

noahh says: Sep 9, 2008. 5:11 PM **REPLY**

Ah, got it. Thanks.

nedfunnell says: Sep 16, 2008. 1:15 PM **REPLY**

That doesn't look very safe to me. -Ned Funnell Senior Materials Joining Engineering Technology student

8bit says: Sep 12, 2008. 8:45 PM **REPLY**

How much for a ride?

liseman says: Sep 16, 2008. 12:14 AM **REPLY**

hi 8bit, we work for tips, and many pedicabbers (myself included) have a sign suggesting a minimum of $5 per person per ride...

8bit says: Sep 16, 2008. 10:36 AM **REPLY**

Well, If I see you around, I'll flag you down I guess. I would be honored to get a ride in it. Too bad I'm rarely downtown.

PandaPandaPanda says: Sep 12, 2008. 3:10 PM **REPLY**

I can't believe you got this thing licensed. Remind me never to take a bicycle taxi in Austin, TX. You should make this thing a trike so it more stable, add suspension and decent tires so the riders don't feel every bump in the road, and use WELDS instead of a Lego Technics set to put it together so there is no risk of it coming apart at high speeds. This thing is seriously a death trap. I can't believe you ride this thing around. YOU ARE TAKING PEOPLES LIVES IN YOUR HANDS.

liseman says: Sep 12, 2008. 4:51 PM **REPLY**

Hi PandaPandaPanda, Thanks for reading, and I'm looking forward to any advice you have about how to make a better pedicab. Please review the full instructable and check out some preliminary analysis I've done at this big pdf before condemning so absolutely: welds can be made strong or weak, and I'm confident that I've built a very safe pedicab. If you're ever in Austin, TX, I'd be happy to ride in the back and let you drive: I'll bet you can't dump me out if you try:)

Pumpkin$ says: Sep 13, 2008. 7:51 PM **REPLY**

how fast can this thing really go? I imagine less than 20

liseman says: Sep 16, 2008. 12:06 AM **REPLY**

Hi Pumpkin$, We hit peak speed on downhills, so it's pretty similar to what you'd do on a mountain bike. I don't have a cyclecomputer on this bike, but 20mph is definitely in the ballpark...

Pumpkin$ says: Sep 16, 2008. 5:25 AM **REPLY**

are you gonna make a pediboat? I'd buy that!

Grey_Wolfe says: Sep 13, 2008. 12:10 AM **REPLY**

I agree with Panda That a tricycle set up might be more stable, but really only at a stop. A tricycle is actually less safe while turning. Also, you'd have to be moving pretty fast over fairly rough ground for a considerable amount of time to rattle that baby apart. lol I think you've done an excellent job here. Can see some improvements I might make, if I were to do this. But they are mostly cosmetic. Though I like the radio idea. How did you go about getting it licensed, btw? And how much did that run you, if I may ask. I'm in Tucson, AZ, not Texas, but to process should be the same, and it might be profitable.

liseman says: Sep 16, 2008. 12:13 AM **REPLY**

Hi Grey_Wolfe,

There's a vicious debate among pedicabbers about trailers vs. trikes, w/ lots of raised voices and very few facts:)

Whether you buy a pedicab or build one, inspecting your vehicle in detail is of utmost importance. In my experience, I've experienced surprisingly little to no loosening of bolts thus far. Remember to use nylon locknuts!

In terms of licensing process, it was an odyssey. I've detailed a lot of it in this Instructable.

Costs are *very* location-dependent: some large cities don't regulate pedicabs at all, and others are like Austin:) My approximate costs were:
-$50 one-time app fees for city permits, llc, etc.
-$50 per 3 months for city licensing fee, per pedicab
-$1000 per year for city-mandated commercial general liability insurance. this stays the same up to ~10k reported income for the llc, which means i can add several more cabs before insurance cost increases.

let me know if you get it started!
-luke

Grey_Wolfe says: Sep 26, 2008. 12:46 AM **REPLY**

Thanks, bud. I figured it'd be variable depending on where one is. But I thought I might get a general idea from your figures. People are gonna think teir opinion is right whether or not someone provides facts to the contrary. So I'm sure the trike/trailer debate will continue on. Simple physics answers the question, but I'll leave that debate alone. Already stated my opinion on the subject, and that's good enough for me. Thanks again.

tmherrin says: Sep 14, 2008. 7:15 PM **REPLY**

more power to you. great instructable and a unique approach to a pedicab. perhaps if people think otherwise, they can post there own improved versions. keep instructin'. tmherrin

burntbob says: Sep 13, 2008. 6:36 PM **REPLY**

Nice work! My first bike trailer for my kids was built from old tent poles bolted together, shelf brackets, salvage wheels, cardboard fenders and recycled kids seats . Worked great dispite the fact it wasn't " professional". Only caveat is to take it slow when testing since adults weigh a lot and someone sitting over to one side might make it unstable and collapse a wheel when you go around a corner and theres flex happening. Maybe work up to 1 and then 2 adult size loads of sandbags etc.. in different seating positions....

Fizzxwizz says: Sep 12, 2008. 9:50 PM **REPLY**

I think a great addition to this would be a bike powered radio/stereo. Then with some green paint and other things you would be the greenest pedicab around. Seeing as green is in these days you might get more customers!

ax89 says: Sep 11, 2008. 9:19 PM **REPLY**

To be honest, I thought this was a pedicab for one of those "gag" reels on tv, but then realized you are serious (or appear to be serious). Not to rain on your parade or anything, but a very hot place would have to freeze over before I would get on your "pedicab". These comments are intended to be constructive. You have no triangles in your design - triangles add strength. Round tubes are stronger for their weight than the square tubing. You have many bolts which can loosen with no apparent means of preventing that. Your bolts are the weak spot in all your joints, with no reinforcing or any means of preventing the tubing from squeezing together and letting the bolt loosen. Once you get movement, then your joint will start to fail. You have no brakes on your trailer, which would make the bike uncontrollable in certain scenarios which would jeopardize the health of the rider and passengers. The haphazardly fastened foam just looks unsafe. The whole appearance raises "rickety" to the tip of my tongue. Well engineered products are not only safe and functional, but beautiful.

PandaPandaPanda says: Sep 12, 2008. 3:05 PM **REPLY**

I feel like we should tell someone to remove this thing... real bicycle taxis are made as a solid unit and are made as tri-cycles (IE- the actual bike itself has one wheel and the frame is placed on a very stable trailer hitch, creating a structure that won't come apart at high speeds or going around turns.) This thing is a death trap.

emuman4evr says: Sep 9, 2008. 4:54 PM **REPLY**

Whats thematically mean.

wurx says: Sep 10, 2008. 10:13 AM **REPLY**

1. Of, relating to, or being a theme: a scene of thematic importance. 2. Linguistics Of, constituting, or relating to the theme of a word: a thematic vowel.

fungus amungus says: Sep 9, 2008. 9:23 AM **REPLY**

Hey! We'll be out in Austin for Maker Faire. You gonna bring some of your stuff there or what?

alexh934 says: Sep 9, 2008. 4:30 PM **REPLY**

hey are you guys ever going to do a maker faire in chicago? that would be awesome!

wurx says: Sep 10, 2008. 10:11 AM **REPLY**

Come check out American Maker at the Museum of Science and Industry. It is next weekend (September 20th, 2008) It isn't Maker Faire, but it is a great way to meet a lot of other Makers in the Chicago area. Search 'American Maker' on the MAKE blog for more info.

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