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Learn Something

One man's attempts to improve himself

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Ghia EV

Here be all manner of words and pictures concerning Agatha, a 1971 VW Karmann Ghia being converted to 100% electric drive. **EV** stands for **E**lectric **V**ehicle. I purchased her in August of 2003. She had been living in Las Vegas, had been lovingly restored, and had suffered from seven years of neglect in the hot sun and finally an engine fire. The owner wanted to move on and put her on eBay, where I found her.

I've been slowly and cautiously converting her to electric drive. Some things to keep in mind about me:

- I have never done this before
- I've never been a "car person"
- I have no idea what I'm doing

Let's get a few FAQs out of the way first.

Is this a hybrid car?

No. A hybrid car has both a gasoline engine and an electric motor. This car is purely electric drive. No gas, just batteries charged with 100% American electrons.

How fast will it go?

I don't know yet, but I conservatively calculate 80-90mph. It should be very quick off the line — electric motors like the one I'm using in Agatha have their maximum torque at 0 rpm.

How far will it go?

Again I don't know yet, but I figure on a range of about 30 miles under normal city driving. We'll see if I can do better than that. And in an emergency, I can go perhaps twice as far — but it will damage my batteries.

That's not nearly far enough! Why bother with a car that only goes 30 miles on a charge?

- Because at least 90% of my car trips fit nicely into a 15-mile radius from my house.
- Any electrical outlet can recharge the car in a few hours.
- I already have a gas car for taking long trips.
- There are many alternatives to the personal automobile for long-distance travel.
- It's quiet, fast, fun, non-polluting, and reduces dependence on foreign oil.

How about you? Would *you* bother?

What if you forget to charge your car?

Then it will stop moving sooner than expected, just like a gas car if you forget to fill it up. However, unlike a gas car, you can let an EV sit for a while and the batteries will bounce back a little bit, hopefully giving you enough juice to get to an outlet. And when was the last time you saw a building that didn't have an electrical outlet? The 1930s?

But really, this is pretty unlikely. How often do you let your car run out of gas? How often do you forget to plug in your cell phone? And plugging in your EV is about as easy as plugging in your cell phone. Drive home, plug in the cord, and go to sleep. No more trips to the gas station! How cool is that?

Will it save money?

Probably not, but the cost difference will be small. I didn't design my EV to be cheaper than a gas car, just lots more fun! However, as gas prices creep upwards, electric cars look better and better. I'll try to post some statistics on operating costs once she's on the road. Here's a quick overview of the pluses and minuses.

Pluses:

- No gas bill!
- Drastically reduced maintenance (no more gas engine, cooling system, exhaust system, etc.)
- Much longer life of the car (electric motor lasts forever, replace batteries every 5-10 years)

Minuses:

- Your power bill will go up slightly (you'll be charging at night when the rates are low)
- Batteries are expensive (mine cost about \$2000)
- Other car parts still require maintenance (transmission, brakes, etc.)
- An EV conversion was designed to be a gas car and is not optimized for electric drive

The main reason why most EVs aren't cheaper than gas cars is the battery pack. Also partly responsible is the fact that a conversion will not be as efficient as a purpose-built EV and will therefore need more batteries.

Then why are you doing this?

Everyone who decides to convert or build an EV has their own reasons. These are mine, and they might not apply to you.

I've always wanted an electric car. The internal combustion engine has always seemed an ugly hack to me. In the early 1990s I began to seriously look into the possibility of somehow getting an EV. I decided the most enjoyable (and affordable!) way was to build it myself. I researched the various kits available (I was particularly taken by the [Doran](#)) but I was not confident that I'd have the ability to actually finish such a project on my own and eventually gave up on the idea.

The first Gulf war came and I harbored a strong suspicion that it was entirely about oil. I thought again about reducing the USA's dependence on oil by driving an EV, but I still wasn't ready.

And then the second Gulf war came. Now not only am I now quite certain it's all about oil, but now I'm ready. I've got the money, the big garage, the midlife crisis (I turned 40 in 2003), the strong desire to help wean the USA off of foreign oil — but most importantly, I've got the Internet.

The *only* reason I took on this project is the existence of many resources on the Internet, primarily the [EVDL](#) (Electric Vehicle Discussion List). More resources can be found on my [EV Links](#) page. With these fine people cheerfully giving their advice, encouragement, and opinions (lots of those!) I feel like I had an excellent chance at success. So far I haven't run into any show-stoppers, and it's looking like I'll be driving Agatha someday in the foreseeable future.

So, to boil it down to bullet points:

- EVs are cool
- I need a big project
- I'm a patriot
- I want to show that practical alternatives to gas cars exist and are worth owning
- I want people to ask themselves, "If Doug can do this in his garage, why can't the car companies do it in their factories?"

And why the website?

Because I want *you* to feel like *you* can drive an EV, too. I was inspired by others' web sites, and I hope to inspire you.

So look around. See how I'm doing it. Learn from my mistakes, steal my good ideas. (I hope you can figure out which is which!) Ask questions. [Send me](#) your thoughts and suggestions — I'd love to hear from you.

About the site name

Go to school, Joel. Learn something.

- Lana, from [Risky Business](#)

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