

# Adventures in Electrathon & Grease Power at SolWest



**Eric Hansen**

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Vehicles at SolWest's second annual energy fair ripped it up with electricity and grease! An exciting Electrathon race and the introduction of the "Grease Car" highlighted the event's rolling stock. I was able to jump in the driver's seat of an Electrathon racer for a brief, yet epic, adventure. And those who met the Grease Car's crew learned of their evangelical cross-country experiment.

Jennifer Barker worked with Electrathon America to bring the first Electrathon race to the SolWest Renewable Energy Fair. When the event's details were arranged, the national organization approved it as a sanctioned Electrathon America race. The local auto club, the Grant County Kruzers, helped out by sponsoring a special award for the best high school vehicle.

The main competitors were Cloud Electric Racing, Willamette High School, Hewlett Packard ENV Team, and Morning Hill Associates. Dave Cloud is an experienced and innovative designer and builder of these racers. Ron Breckon, another Electrathon competitor, is a recycling and alternative energy and transportation enthusiast. He's recently gotten involved in the

Electrathon by bringing two of Dave Cloud's racers out of retirement. And he's hoping to organize an Electrathon race in Washington state.

## **Give Me the Keys, I'll Drive**

Ron didn't have to talk me into driving his second Electrathon racer. I had been eyeing the cool vehicles from afar, and was hoping for a shot at competing. My vehicle, a three wheeled silver bullet, boasted a respectable motor, but lots of duct tape. As we warmed up the batteries in a heated foam cooler to top them off, Ron gave me the lowdown on how to drive an Electrathon racer.

My race strategy was this—quick and consistent. I was going to go easy on the brakes, light on the throttle, and allow the vehicle to coast as much as possible, taking advantage of its aerodynamic and light construction. Ron warned me that attacking the track with a fast and furious pace would prematurely drain the batteries and kill the tires.

**Eric Hansen, powering into a sharp turn in the Electrathon racer.**



But as the *Home Power* pit crew taped the sleek lid onto my machine, I changed my tune. As the race began, my levelheaded strategy fell victim to adrenaline. I quickly became wrapped up in staying with the pack and taking the sharp turns with the throttle down. What fun—I felt like I was flying in my racer! The fact that the car is only inches off the ground makes twenty miles per hour feel like sixty miles per hour.

As I skidded around my fifteenth lap, I encountered my first challenge. The lid of my vehicle was coming off. I guess the duct tape that fastened it down didn't hold too well. Now it was totally askew, and my mirrors weren't working for me—I couldn't see my fellow racers. I was a liability, and didn't want to hit anyone.

I took myself out of the race for a few seconds and made the racer into a convertible. No worries. Now, back in the race, pieces of the track and debris from other cars' tires bounced off my sunglasses. I was keeping up with the shredders from Willamette High School pretty well when boom, grind, scrape—I lost power.

I exited the track near my pit crew—Richard Perez, Joe Schwartz, and Rose Woofenden. Rose quickly diagnosed the problem—my chain had fallen off and was munched up in the nose cone. Richard was swift to lend his Leatherman tool. Joe and I got the nose cone off and the chain back on.

Back in the race, without a lid or a nose cone, I was looking funky, but doing OK. I was skidding around the corners with the best of them until... *Pop!*—one of my tires blew. Yipes! My pit crew was all the way across the track, but it didn't matter this time. We didn't have spare tires in the *Home Power* booth. It was the end of the race for me.

The track's rough surface and hot temperature made it hell on wheels. The tight design of the course made it hard to coast the Electrathon racers. One long straightaway allowed for some coasting, but in order to stay competitive, the racers had to power through the six quick turns. The quick turns ate up energy from the batts and chewed up tires. Even so, several of the fourteen participants finished with over a hundred laps. My 70 laps looked pretty meager on paper compared to the 289 laps Bruce Sherry of Cloud Electric Racing racked up.

The race was a prominent exhibition at the fair. The crowd loved it. Fairgoers got the opportunity to see this technology firsthand. Some got the bug to engineer racers themselves. *Home Power*, along with Larry Elliott of Klamath Advanced Transportation Technology & Energy Lab (KATTEL) and Bob Maynard of Energy



**Teamwork—HP's pit crew fixing the chain.**

Outfitters, are working on an Electrathon racer to premier in 2001. This alliance will be promoting Electrathon races in Grants Pass, Ashland, and Klamath Falls, Oregon.

#### **Introducing the Grease Car**

Justin Carven's converted 1982 VW Westfalia Vanagon is journeying across the country and back on used cooking grease. That's right, grease! *Home Power* caught up with the Grease Car crew after SolWest's biodiesel workshop.

The Grease Car runs on fuels ranging from bacon grease to light salad oils. Using a dual fuel tank system, the motor warms up on conventional diesel or biodiesel and switches over to grease. As the engine runs, a copper coil heats the tank. When the grease becomes warm enough to pass through the motor's components, it's ready to be burned. At the end of the day, the tank is switched again to flush the cooling oils. And yes, the exhaust smells like a plate of bacon, fried eggs, and hash browns.

# From the Grease Car Trip Log, July 29, 2000

We're now in John Day, Oregon at the SolWest Renewable Energy Fair. We ran into Jon Kenneke, the SlugBus guy, who runs his VW on biodiesel. He was psyched to see us with the Grease Car, since he blew a head gasket on the way here. He gave a talk on how to make biodiesel, and mentioned us and the system that Justin got going. People are pumped! The folks out west seem so open to anything.

There is another one of those Honda hybrid electric cars here, and lots of solar technology. In fact, I think there is a deal going down with some of the solar guys and some of the grease guys—grease technology for solar technology. Justin isn't really a solar advocate, but by the end of the day, the Grease Car will be equipped with solar panels that will power our fridge, cell phone, and laptop.



The Grease Guys: Skip Wrightson (left) and Justin Carven (center).

This Grease Car is an evolutionary step in Justin Carven's experimental use of used cooking grease as a viable diesel alternative. He and Skip Wrightson set out from Cape Cod, Massachusetts on June 30, 2000 to log some 10,000 miles (16,000 km) in the Grease Car—refueling at restaurants.

If the cross-country experiment proves successful, Justin hopes to market a retrofit kit. The product will allow the user to quickly install a simple conversion that burns a variety of clean and dirty oils stored in the filtering tank of a diesel car or truck.

Justin converted the first Grease Car from a 1984 VW Quantum turbo diesel, building on his previous work with the Bio-fuels Project at Hampshire College. The Quantum logged 2,000 grease miles (3,200 grease km) before the car was retired. Justin and Skip then converted the 1982 VW Westfalia Vanagon using the Quantum's swapped out diesel engine. Check out their Web site for an overview of this process and the tools it took to convert it. Project Grease Car is funded by the National Collegiate Innovators and Inventors Alliance.

Congratulations to Justin and Skip on the Grease Car and journey. What an awesome experiment, adventure, and renewable outreach these two guys undertook. They truly succeeded in spreading the greasy word about renewables.

## Access

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