

## FVEAA NEWSLETTER FOR MAY 2004

An Independent Not-For-Profit Corporation associated with the National Electric Auto Association

**NEXT MEETING: Friday, May 21 at 8:00 PM in the Triton INDUSTRIAL CAREERS BUILDING, (East Campus), and Room 108**

**DISCUSSION TOPICS: 1. Seminar status report. Income Tax incentive status. 3. Open Topics.**

### MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the Fox Valley Electric Auto Association. The cost for a full year's dues is \$ 20 which will entitle members to receive our monthly Newsletter that contains useful information about electric car conversions, construction, news, policies, and events. Membership is not required to attend our meetings. Dues for NEW members joining in June will be \$ 8.

To obtain information about the FVEAA you may:  
Visit the FVEAA Website at [www.fveaa.org](http://www.fveaa.org)

Or contact FVEAA Vice President Steve Grushas  
924 South 7<sup>th</sup> Avenue  
LaGrange, IL 60525  
(708) 579-9128

### PRESEZ

When the FVEAA was first organized the main challenges of applying electric power to an existing automobile were technical. The first converted cars used relays to series-parallel switch batteries to provide voltage in steps to surplus shunt-wound dc motors. Founder Ken Meyers, John Stockberger, and others designed and built speed controllers using a parallel array of limited capacity power transistors. Balancing the loads and getting simultaneous switching was a real technical challenge. Today solid-state speed controllers are commercially available from Curtis, DCP and others. WARP and Advanced DC series-wound motors are commercially available at reasonable prices. How-to-do-it publications such as *Build Your Own Electric Vehicle* by Bob Brandt provide a comprehensive reference. *Convert It* by Mike Brown is a step-by step guide to the conversion process. These should be read by anyone contemplating a conversion.

One thing has not changed however. The assistance that FVEAA experienced members who have finished projects have always provided to newbies is a valuable resource.

The majority of today's challenges today seem to be in non-technical areas; financing, finding time in the busy family life, and correcting the inevitable glitches that develop are concerns. These were discussed in April.

We should confine our discussions to converted electric car topics. Especially since Detroit has abandoned commercially produced electric cars. The only way an individual is going to get one is a do-it-yourself project. It is sometimes tempting to wander into topics that are unrelated to this. I have tried to schedule discussion topics that are directly related to converted electric cars.

That is why we have recently been discussing the barriers to conversion projects; while never abandoning any technical question that is relevant to our chartered purpose.

BILL

## MINUTES OF THE APRIL 16<sup>TH</sup> MEETING

The meeting at Triton was called to order by President Shafer at 8:12PM. The March minutes were approved, as published. Treasurer Corel's report that there is a total of \$6,300.89 in our accounts was accepted.

Bill mentioned Elmhurst Car Show notified us of their series of car shows this season. Bill noted that our previous attendance did not produce a new member for the FVEAA and questioned their value. A lively discussion ensued. Kevin Zak noted, "There is no such thing as bad press." The FVEAA has to start somewhere and car shows are one place. Suggestions for others included Ham Radio Fests, shows in other communities, Arts & Craft shows at malls, alternative energy shows, and possibly flea markets. Members will check these possibilities out for the coming summer. We only need one car at each event. Bill asked Kevin Zak to prepare a draft sketch of a new sign for use at these events.

Bill noted at the last meeting three barriers to conversions were suggested: financing, time required away from family requirements to do a conversion project and repairs after conversion. Ideas ranged from lobbying for tax credit equal to hybrids, clean fuel usage credit, and grants. Bill said he would contact the National EAA and ask if they would handle the tax credit matter. It was noted that some grants might require extensive reporting and not worth our effort. Some also said we should stay where we are at because of the fuel tax and road tax do not apply to electricity used for transportation purposes. Repairs should be straightforward because there are less than 10 components in an electric car. The mutual help available from experienced FVEAA members is a major benefit to being a FVEAA member.

Tim Moore asked how long a battery pack is good for. Bill mentioned 400 deep cycles, if the pack is not deep-cycled to all of its capability. A rule of thumb for battery energy storage capability is (The number of batteries making up the pack) x 2 = range in miles. Each battery will hold about 1 kWh and our experience indicates urban driving requires about ½ kWh/mile, depending on driving habits. If the car is recharged after half of its range capability the life of a flooded battery will be 6-700 cycles.

Rob Glowacki mentioned he is debating whether to save his 1980's transmission with electric motor to put into his 1999 Escort. He will be discussing this with Triton's transmission specialist.

Vice-President Steve Grushas informed us that George Krajnovich had a serious car accident and is in the hospital, he could use Get Well card George Krajnovich 17w381 Eisenhower Oak Brook Terrace IL 60181.

We lost our EV focus and wandered into a discussion of vegetable oil and biodiesel fuel for hybrids. Kevin Zak brought us back to electric cars by informing us that the dragster, *Bad Amplitude*, is now free to resume racing since the experiments required by the NASA contract have been fulfilled. Results were reported in the FVEAA April issue. Net Gain has decided to concentrate on hybrids. Three members of Net Gain (Emde, Klien, & Zak) have formed a new company, *Next Generation Technology (NGT) Racing*, and will continue racing activities with *Bad Amplitude*. E-Mail address is [kevezulu@aol.com](mailto:kevezulu@aol.com).

The meeting was recessed to the garage at 9:45 for coffee "and" and discussions. It was adjourned at 10:30 PM.

Submitted by Secretary Tim Moore  
May 2, 2004

## FROM OTHER EV NEWSLETTERS AND ARTICLES AFFECTING ELECTRIC VEHICLES

**The April Newsletter from the Denver group** was principally concerned with initiating an *Electrathon Race* in Denver. There was also a brief article about Actor Tom Hanks statement on The David Letterman Show that he was building an EV. He received applause when he said, “people should be able to select an electric car. – but the audience must be insane because people don’t really want these cars – right ?” Rumors have it that Hanks is providing some support to AC Propulsion’s efforts to provide EV conversions based on the Toyota Scion.

The issue also reports that Unique Mobility (UQM) based in Colorado has developed a new line of motors. They are brushless, permanent magnet motors with a rated 8000-rpm speed and an input voltage of 250-400 volts (DC). The package includes regenerative generation. The MPM 30 has a peak power of 30 kW, and delivers a torque of 103 ft-lbs. It is intended for motor-assist, hybrid engine starters, and drive motor for small EVs. The MPM 50 has a peak power of 50kW and 177 foot-lbs of torque. It is intended for hybrids. No data was given for the MM80, intended as a drive motor for large vehicles.

**The April Newsletter from EEVC, the Eastern Group**, reported on the ”Spring Break of the Green Car Club. It was interesting to note from pictures of the gathering that the cooling towers of Limerick Nuclear Power Station were in the background.

The Indian Institute of Technology in Madras claimed it has a process to electrolyze water at 0.9 volts, considerably below the usual 1.23 volts. Conventional electrolysis requires 32.9 kWh of energy per kg of hydrogen produced. At 1.75 volts the energy rises to 46.8 kWh/kg. Energy efficiency at this level is 70%. Editor’s note – 40 kWh is equal to 136,000 Btu, just about the heat content in one gallon of diesel fuel.

The world saw 8133 Mw of wind energy machines installed in 2003, according to figures from the American Wind Energy Association. Editor’s note – only battery equipped electric cars are capable of using this energy source for cars.

**Carmakers Pull The Plug on Electric Vehicles. NY Times March 28.** After spending \$1 billion to develop the EV-1 and producing about 1000 vehicles (\$ 1-million/car) GM cancelled the program. Like GM, Ford is also reclaiming the leases of its Ranger EV. Most of these went into commercial fleets. By contrast, Toyota, which produced about 300 electric versions of the RAV-4, is allowing lessees to keep their cars, so long as they do not require batteries, unavailable parts, or expensive services.

The full text of this article is available on the NY Times website [www.nytimes.com](http://www.nytimes.com)

**The May 7th issue of Business Week** on Page 58 reports that Shell Oil Company is replacing only 60% of the crude oil it is extracting. At this rate its proven reserves are adequate for another 10 years.

In the same magazine issue, on page 36 is an article “Energy: The Big Squeeze” which notes that gasoline and crude oil prices continue to rise. The rising demand in China is a factor. US demand is up by 5%. Gasoline inventories this year are 2.7% below their 5-year average. California has the biggest risk of trouble because of its special gas formulation rules. Shortages are not impossible this year if a refinery is forced off-line or other major trouble. Editor’s note - **If you have an electric car – hold on to it!** If you don’t, consider doing a conversion. If you have one in progress – finish it.

## FROM OTHER EV NEWSLETTERS AND ARTICLES AFFECTING ELECTRIC VEHICLES –Cont'd

**The Cover Story of the March issue of *DISCOVER* Magazine is about sea floor methane.** The bottom mud contains huge deposits of frozen methane hydrate. The total mass of this substance could be greater than the combined mass of coal, oil, and gas known reserves. There is a particularly large deposit 60 miles west of the Oregon coastal town of Newport. Exploitation of the potential resource will be difficult. The article is too comprehensive for this publication. If you are interested, get a copy of the magazine from your local library. Editor's note – I have a question about this. What would the liberation into the atmosphere of the carbon now sequestered in the hydrate do to our global climate? My meteorologist son doesn't have an answer.

**The April Newsletter from the Vancouver Group** had an extended commentary by Gersh Kutzman of Newsweek about a test of the new Ford *Escape* SUV hybrid. The vehicle achieved 38 mpg while driving 576 miles in the city on 15 gallons of gas. The car will sell for a \$ 2-4,000 premium over the standard Escape.

**Received an E-mail from Electro-Automotive, the EV parts supplier organization.** They now have an agreement with *Solectria*; the Eastern Company that has commercially done a number of conversions, to sell the Solectria AC drive system. As you probably know, the speed-torque characteristic of an ac motor provides constant acceleration over the motor's entire speed range. AC Propulsion developed an AC drive system for the GM EV-1 and also sells a package. Will someone in the FVEAA want to try a conversion with an AC drive system? Additional information about the Solectria system can be had from Electro Automotive: [www.electro@cruzio.com](mailto:www.electro@cruzio.com). You can also contact Solectria via E-mail at [www.federle@solectria.com](mailto:www.federle@solectria.com). An observation - it is expensive to convert DC from a battery system into AC.

**The April 26<sup>th</sup> issue of Business Week** on page 44 lists potential trouble spots in oil-producing areas. These are Russia, Angola, Venezuela, Iran, Brazil, Kazakhstan and Mexico. Hazards include civil unrest and terrorist attacks.

It is interesting to recall gasoline price history. When corrected for inflation, the price in 1920 was \$2.59/gal in 1965, \$1.80, in 1980 \$ 2.40, and today it is \$ 2.00.

Received an article from W. Daniels about a Chrysler development of a vehicle, *The Natrium* uses *sodium borohydrate*. This evoked an image of a 20-mule team wagon hauling borax out of Death Valley. The vehicle has a 35kW motor and a 55kW NiMH battery (\$\$\$). The system extracts hydrogen for fuel cell use. I tried referencing the substance in the Handbook of Chemistry and Physics and the Encyclopedia Britannica. Learned that the substance costs about \$ 50/lb. Finally ended up putting "sodium borohydrate" on a Google search. Bingo! Suggest you do the same if the subject interests you.

Also received a letter from Ansel Nelson, 2S267 Center Avenue in Wheaton 60187 who want to sell his 1977 VW converted *Beetle*. Says is has six 6-volt batteries and a 36-volt motor (Probably a surplus, shunt-wound aircraft starter-generator). It should deliver a 12-mile range. He didn't state an asking price, but the photo shows a car in seemingly good condition. Reason for selling – health problems.

He didn't state an asking price but its fair market value should be less than \$ 1,000. I will send him a copy of this newsletter.