

FVAAA NEWSLETTER FOR 2003

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

NEXT MEETING: Saturday, February 15th at 10 AM in John Emde's new shop.

DISCUSSION TOPICS: 1. Affiliation report. 2. World of Wheels exhibit report. 3. Seminar status report.
4. Demonstration of motor balancing

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 February will be \$17.

To obtain information about the FVEAA you may:
Visit the FVEAA Website at www.fveaa.org

Or contact FVEAA President William H. Shafer
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PRESEZ

Our February meeting date and place have been changed. John Emde has invited us to hold it in his new shop in **Lemont on Saturday**. A map of how to find his shop at 12305 New Avenue is included in this Newsletter. John will demonstrate motor balancing in addition to acting as host for the meeting. Early conversions neglected this procedure. Ed Meyer did the first balancing for the Nissan when it was a Club Project. George Gladic now owns the car.

Our affiliation with the National EAA has been concluded. The Affiliation Resolution, together with the membership applications of John Emde, Rob Glowacki, Peter Hartel, and George Krajanovich have been sent to the EAA. I thank these members for volunteering. Five EAA members, including two officers of the FVEAA, are required to qualify for affiliation. The EAA has established a web link with our website. I anticipate good results from our move.

Net Gain's dragster *Bad Amplitude* and Triton's Ranger conversion were entered in the World of Wheels exhibit competition. Both received awards. The Triton Ranger placed third among 50 small pickup trucks entered in that competition category. Most of these were modified, with a glossy finish that appeared about foot thick. These were *show cars* while the Ranger, if it were licensed, would be is a usable vehicle. How long will it be until WOW adds an electric vehicle category?

I rewrote our Handout for the Exhibit. It has been unchanged for the past 4 years. It now has only one sheet. The General Conversion Information and Membership Application Form have been dropped.

Our April 28th Seminar appears to be progressing smoothly.

Bill Shafer

MINUTES OF THE Jan 17, 2003 MEETING

The meeting at Triton College was called to order by President Shafer at 7:30pm. Minutes of the December meeting were approved. Treasurer Corel reported there is \$ 2836.66 in checking and \$2747.90 in savings account. His report was accepted.

President Shafer read a Resolution for affiliation with the EAA. It was approved by our Board of Directors.

Kevin Zak was asked to bring us up to date on the World of Wheels. The Ranger and the Dragster are registered. Ray Oviyach and Nat Pozorski will deliver the Ford Ranger to the Show on Thursday, Jan 30th. The Show opens at 5 PM on Friday, January 31..

Time slots for staying with the exhibit were divided up: Friday Jan 31, 5pm-6pm Bill Shaefer 8pm-10pm Tim Moore (need someone for 6pm to 8pm) Saturday Feb 1, Mike and Jim Dee 11am to 1pm George Gladic 1pm to 3pm, Tim Moore 6pm to 10pm (need someone for 3pm to 6pm) and Sunday Feb 2 (need people from 11am to 7pm) . Kevin Zak offered to transfer tickets to those attending to our exhibit. Tim Moore also offered to transfer ticket through his hotel room at the Hyatt. It was agreed that Fox Valley would buy two tickets to the show for members.

The April Seminar was discussed. Webmaster Doug Mather reported on the website registration for the April seminar at Triton. Doug mentioned that there will be a seat counter on the website for the 400 seats available, along with an email reminder. The proposed \$ 5 fee for the event was debated. It was decided to raise it to \$ 10, noting a seminar that costs nothing is not worth attending.

Doug also talked about his new 36x40 garage with radiant heat. It is equipped with a lift. Doug thought the FVEAA should have a meeting there in the spring.

John Emde has invited the group to his new shop in Lemont in February for our next meeting date.

Tim Moore displayed his front-page picture and two-page article in the West Proviso Herald and Park Ridge Advocate Herald. He is a teacher at Niles North High School who drives to work every day in his converted Escort, 13-miles each way.

The meeting recessed to the shop where members prepared the Ranger for the World of Wheels Show. The meeting was adjourned at 10:35 PM.

Submitted by
Secretary Tim Moore

From Other EV Newsletters and Articles Affecting Electric Vehicles

EEVC from the Eastern Group in the January cite an Electric Power Research Institute (EPRI) study that concludes that Hybrids are for real. Four types of Hybrids were compared: 1) HEV0 – Only a small battery for power assist 2) HEV 20 battery adequate for a 20-mile electric only range and plug-in. 3) HEV30, the same with a 30-mile range. 4) HEV40, with a 40-mile range. Copies of the findings are available from EPRI (800) 313-3774 or www.askepri@epri.com.

From Other EV Newsletters and Articles Affecting Electric Vehicles- Continued

The DEVC Newsletter is now edited by former FVEAA Member, Dave Stensland. He introduced a new format. He reports that a DEVC Member built an electric go-cart for kids. It uses a 2 HP permanent-magnet motor, has a self-designed FET, 3kW controller, speed limited to 10 mph, runs over 1 hour on one battery charge. Additional details of this are on the DEVC website, www.devc.org.

A DEVC member attended the Electric Vehicle Association of America, now renamed the Electric Drive Transportation Association (EDTA). Their meeting was in Florida. Most of the discussion centered on hybrids. Joel Szabel of the DOT noted there must be an annual hydrogen production capacity of **40 megatons** to fuel 100-million vehicles using fuel cells.

They report that farm equipment maker John Deere hopes to offer electrified equipment long before the auto manufacturers. They cite significant gains in performance, vehicle flexibility, lower emissions, simplified manufacturing, and lower maintenance as advantages. Sound like or kind of company. The Deere website www.deere.com has more information.

VEVA, the Vancouver group, featured a converted Porsche 928 as the car of the month. The conversion has 26 twelve volt Optima batteries and a 10,000 rpm Siemens AC drive system.

They report that Ford sold the TH!NK electric vehicle division to Kamcorp, a Singapore-based electronics and engineering firm. Ford purchased TH!NK in 1999 for \$23-million and spent an additional \$100-million. Sebastopol-based ZAP offered \$10-million.

Member Peter Hartel provided a copy of the October-November *Mother Earth News* that had an article written by Michael Hackelman about Clean, Green Electric Machines. In it Scott Cornel, of the EAA, compared a gas car and a converted 1980 VW Rabbit. The gas Rabbit cost \$ 17140, and the electric \$ 13,683. The per-mile cost for the gas car was 18.5 cents. The EV it was 13.7 cents. The gas Rabbit emitted 17.140 pounds of carbon pollution. The power plant emission was 11,640 pounds.

He also provided a copy of the April-May 2002 issue of *Home Power* article about the electric conversion of a 1987 VW diesel Jetta. A 94-year old man in Los Banos CA did it. He chose the donor car because the body and interior were great. It was in running condition when he bought it for \$ 1500. He used a conversion kit from Electro Automotive. Conversion required six month to complete. The Electro Automotive website is www.electroauto.com.

Autoweek for November 11, 2002 had an article entitled, *To improve performance, add lightness*. The principles are applicable to electric cars. The author, Kevin Wilson, notes that in the opinion of many engineers the venerated Ferrari 3009 pound superexotic is more than 12 % overweight. That's peanuts when compared to the new Bentley GT that overwhelms mass with horsepower.

The author points out that today's Insight weighs 1900 pounds. The 1970-s 1600-pound Honda CVCC was the automotive engineer's selection as the best-engineered car in that decade. The CVCC was built before safety regulations were in effect.

The Chicago Tribune on January 26th had an article about Italian minicars. These vehicles are typically about nine feet long, compared with the Ford *Focus* 14-foot length. They are considered *motor scooters* or *mopeds*. They can be driven by teenagers too young to be a licensed driver.

Electric Vehicle Emissions

A friend of Member Todd Dore asked him about the emissions from Todd's electric car. He asked, "Aren't power plant emissions higher than cars? The question deserves a response in our Newsletter.

Your friend is right in one sense. The same amount of carbon dioxide is emitted regardless of where the fuel is burned. Carbon dioxide is a *greenhouse* gas. A car also emits carbon monoxide but the power plant does not because excess air introduced into the furnace.

Minerals in coal form a particulate, *flyash*. Electrostatic precipitators remove this substance. Sulfur is also a coal constituent causing the emission of *sulfur dioxide*, the *acid rain component*. It can be controlled with *scrubbers*.

Emissions are better dealt with at the power plant. It can be fitted with more-elaborate, more-efficient, more costly pollution control equipment than can be carried on-board each car.

When the electricity source is not a coal-burning power plant the situation changes. Hydroelectric, windmills, solar panels or nuclear sources emit no air pollution. See the *Essay on Energy* printed in the January Newsletter.

Process *efficiency* must also be considered. When a fuel is burned the thermodynamic efficiency is defined by the equation: $T_1 - T_2 / T_1$ where T_1 is the initial temperature and T_2 are the final (absolute) temperatures. The flame temperature is about the same in a car engine or a boiler. The final temperature in a car is partly in the exhaust system and partly the radiator temperature, (160 degrees F). The power station discharge temperature averages about 70 degrees F. The power station has a higher efficiency than the car, however, when electrical losses are added to the process the overall efficiency of the car in converting the fuel energy to motion and utility electricity is about the same ~ 35%.

The 2003 roster of paid members will be included in the March Newsletter mailing. Including it with this issue would exceed the 1-ounce weight limit. The roster is provided only as a hard copy to paid members for privacy reasons.

Directions to John Emde's Shop for the February Meeting

A location map is on the next page. John has provided the following additional instructions: "After you are southbound on the Lemont exit of I-55 you will cross a bridge over the Des Plaines River and Canal. At the bottom of the bridge turn right and follow around to the right where there will be a stop sign. Turn left on New Avenue. It is about 2 miles to my shop at 12305 New Avenue. Turn left off New Avenue into the parking lot. There are four metal beige buildings. The sign says "Code Genetics". Go to Suite N at the back."

The meeting starts at 10AM. John will also host an Open House for the FVEAA, friends and others after the meeting. The Phone number for his new Shop is (630) 243-6616.

Fox Valley Electric Auto Association

www.fveaa.org

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ABOUT US

The FVEAA was organized in 1975 after the first oil crisis. It was chartered as an Illinois not-for-profit organization 4 years later. In 2003 we became affiliated with the National Electric Auto Association

Our purpose is to provide electric car information to the public and assist our members in converting a car to electric power.

We have monthly meetings where we discuss EV policy, developments, components, and solve member's EV problems. We publish a monthly newsletter.

We have identified four reasons why a person should be interested in an electric car:

- Provides a choice of energy supply**
- Environmental improvement**
- Reduces car ownership cost**
- It's a great hobby**

Converting a car to electric power is something an individual can do. Our members are using their converted cars for commuting and other short trips. These account for over 70% of all driving missions.

These electric cars are protected from gasoline supply concerns and the volatile price. The electric energy is available at any plug. In our area it is currently 65% nuclear, 30% coal, 2% natural gas and 3% purchased from outside suppliers.

You can't buy an electric car today. Detroit has abandoned EV work in favor of hybrids, which still use gasoline, and fuel cell vehicles – a long-term project

We anticipate the time when auto companies will offer an EV. We are unwilling to wait. Some of our members have finished conversions.

ABOUT OUR ELECTRIC CARS

Our electric cars are simple. The system contains four components; a DC electric motor connected to an existing transmission, an electronic controller for speed control, a battery pack composed of deep-discharge lead-acid batteries, and a battery charger.

The system has a long life. The electric motor has only one moving part. It can last for over 15 years. The battery pack requires replacement about every 5 years.

Battery energy storage ability limits our cars to a single-charge range of about 30 miles driven in urban traffic. Our EVs are **mission specific**, used when a trip is within its range capability.

A conversion project will take about 4-5 months to complete and costs \$8000 for components. A ten-year economic analysis, available on our website, shows the EV annual cost to be about \$ 1500, 1/3 the annual cost for a Ford Escort. EV cost is lower because the long life reduces annual depreciation and financing costs.

Our *Declaration of Energy Independence* is on the back of this page

**If there are two cars in your driveway,
one should be an electric**

MEETINGS

We invite persons interested in electric cars to attend a monthly meeting of the FVEAA and get acquainted. We meet at Triton College in the INDUSTRIAL CAREERS (IC) Building on Triton's East Campus. Go to the first traffic signal on 5th Avenue, ½ mile north of North Avenue and then turn east. The IC building is the one-story structure. Our website has a location map