

## FOX VALLEY ELECTRIC AUTO ASSOCIATION NEWSLETTER

**NEXT MEETING: Friday, JANUARY 19, 2001 at 7:30 PM, Room 108 in Triton's Industrial Careers Building (East Campus)**

**DISCUSSION TOPICS: The December Meeting is cancelled. The Board agreed with President Shafer's recommendation: 1. It is the Friday before Christmas Eve, the following Sunday. 2. Driving conditions are likely to be congested and difficult. 3. Only a small attendance is likely.**

### MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the FVEAA. 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 December will be \$ 20.

To obtain info about the FVEAA you may contact either Past-President Ken Woods or President Shafer

Past President Ken Woods  
1264 Harvest Court  
Naperville, IL 60564-8956  
(630) 420-1118  
E-Mail: CasaZeus2@aol.com

President and Newsletter Editor Bill Shafer  
1522 Clinton Place  
River Forest, IL 60305-1208  
(708) 771-5202  
E-Mail: Assessorbill@cs.com

**OR LOG ON TO OUR WEBSITE [www.fveaa.org](http://www.fveaa.org)**

### December 2000 PRESSEZ

The Board's decision to cancel the December meeting will give us a chance for final Christmas Shopping. You can join the horde of people likely to be on the road that night for this purpose instead of coming to a meeting that likely would have a small attendance.

The recommended candidates were unanimously elected at the November meeting. Thanks to every officer and director for agreeing to serve another term. No recounts were required.

I received a suggestion that we expand our "bull sessions", show-and-tell items, and return to the topic of **electric vehicles**. It was recommended that we de-emphasize environmental issues and don't worry about hybrid vehicles. I particularly agree with the last recommendation. (See the editorial on hybrids in this issue). I would like to hear from other members on this matter either via e-mail or a letter.

A reminder that this will be the last Newsletter for those members who do not renew their annual membership this month. The new membership list will appear in the February issue.

I hope that Santa will deliver each of you a *Corbin Sparrow*, the only **new** vehicle being manufactured, available for \$ 13,000. If Santa doesn't come through, I suggest that you make a New Year's Resolution to get started on your conversion so by this time next year you will **have** an EV.

BILL

## MINUTES OF THE NOVEMBER MEETING

The meeting at Triton was called to order by President Shafer at 7:30 PM. Thirteen members and two guests attended. Member Bob Munroe brought Forest Salter as a guest. Forest is a resident of the same apartment complex as Bob and attended FVEAA meetings several years ago. The minutes were approved as published in the Newsletter. Treasurer Corel's report that \$ 2193.34 is in the checking account and \$ 2431.06 in the savings account was accepted.

Member Paul Harris has purchased a 1986 Mazda RX-7 for conversion. Paul's interest in electric vehicles extends back to the time he acquired an AMC *Gremlin*. He now has **two** other cars that other members may wish to convert. The first is a 76 Triumph. The second is a 1982 Fiat X-19 Bertone that has body rust. Paul is now in Florida for the winter but will return for a couple weeks in January. If any member is interested in either of these vehicles please let me know and I will pass your inquiry to him. (**Note** – John Emde, who is doing the work at his shop in his shop, will appreciate the help of FVEAA members. Call him at (708) 447-4616 during working hours to volunteer.)

The Web Site and status of e-mail copies of the newsletter were discussed. The e-mail of the November issue revealed a couple of problems. It is sent out as a .zip file. If your e-mail account doesn't have unzipping ability the document is not decipherable according to some members. The newsletter is prepared using Microsoft WORD format. You must be able to process this format. The December Newsletter will be sent out via e-mail. When two successive issues pass muster e-mail issues will become a regular practice. The club will then be asked to decide the next move.

President Shafer reported the Triton Project seems to be stalled. Triton has yet to do five things to get the project underway: 1. Decide on student participation and recruit personnel for the project. 2. Select a faculty member to be the Project Manager. 3. Decide on a place for the work. 4. Obtain funding for the Project. 5. Secure a vehicle suitable for conversions. Member Emde suggested a pickup truck would be the preferred vehicle for conversion. The membership agreed.

Don Baker, a Principal at Battery Service Corporation in Bensenville gave a presentation on lead-acid batteries. He presented information on battery construction, the differences between SLI and deep discharge batteries, Optima battery construction and characteristics, cold-weather performance, battery recycling, and other topics. An interesting fact - electrochemical activity increases three times for every 10% increase in battery electrolyte temperature. There were lively discussions during his presentation.

The meeting was adjourned at 10:30 PM.

Submitted by  
Secretary Richard Ness

## LOGO FOR YOUR ELECTRIC CAR

Member John Emde has stick-on logo for your conversion. The ELECTRIC logo is a 7inch long, 1.5 inch wide silvered emblem. I pried off the rear nameplate from my Mazda RX-7 and substituted the logo. For the first time my car can be recognized from the car behind me as an electric by this elegant identification. John will sell you one for \$ 5. His e-mail address is [emde1@juno.com](mailto:emde1@juno.com)

## From Other EV newsletters and articles affecting EV's

**DEV**C, the **Denver Electric Vehicle Council**, in their November newsletter, reported that from March through June 30 Arizona offered a \$ 10,000 state tax credit or 80% of the cost for each electric Neighborhood Electric Vehicle (NEV) sold. There were 1831 NEV registered before the incentive was offered. By July registration was 3480.

Students from Tokyo Denki University in Japan have started an 11,000 kilometer trip around the world in a solar-powered vehicle. Hood mounted solar cells provide 10% of the energy required. The rest is derived from plug-in sources.

Toyota has built a version of the Van Doorne continuously Variable Transmission (CVT) that uses a steel belt carrying links. The drive uses a special fluid that causes adhesion between each segment when they are squeezed together on the power side of the driven pulley. They separate on the tension side. The ratio varies from 2.396 through 0.428:1. With this system the controller is expected to be a starting contactor and a second contactor to short a current-limiting series resistor. (Editor's note) I used a CVT on my first conversion in 1975. I used three voltage steps of 12, 24, and 36-volts working with the CVT for speed control. It worked fine. My second car is a 1996 Honda Civic DX with a CVT that uses the same technique as the Toyota. It delivers 30 mpg in urban driving.

*Enova* has an agreement with *Capstone Turbine* to provide drive systems rated between 30 and 240 kW. The smaller units would be suitable for passenger cars. The larger units are expected to be used in large trucks and buses. (Editor's note) Caspstone has a patented air-suspension bearing system that allow the turbine to turn at 90,000 rpm and run 20,000 hours between major maintenance. This may be fine for stationary applications but will it function when a wheel hits a pothole?

Taiyo Uden in San Marco California has a Power Factor Correction (PFC) box that can be installed on the ac-side of a charger. The unit can raise the power factor to 0.97 from 0.63. It also improves charger efficiency.

GNB batteries has a 12-volt sealed lead-calcium battery that they claim has 1200 DAD cycle life.

PowerCheq has a 1.2-amp, \$40 battery equalizer. Info on this device is at [www.powerdesigner.com](http://www.powerdesigner.com)

Trojan has been working on a new bipolar battery. They are expected to be only 2/3s the weight of present units. Development will probably require at least another two years.

**EEVC, Eastern Group** in their November newsletter reported that inventor Peter Gruendeman presented a program on his permanent-magnet alternator that can be used with a Sterling engine. A classic drawback to this engine is a low specific power output.

The issue mentions articles from another EV publication. Bill Moore is the editor. The website for the publication is [editor@evworld.com](mailto:editor@evworld.com)

They report that DaimlerChrysler has purchased the assets of Fargo (ND)-based GEM motors that manufactures a Neighborhood Vehicle. Operations will be conducted through the wholly owned subsidiary.

## From Other EV newsletters and articles affecting EV's - Continued

**VEVA, the Vancouver Group**, in their one-page newsletter, is looking for a new editor to take over from Rob Cameron. They published the results of the NEDRA race held in Sacramento CA in October. Dennis Berube remains the top dragster with a 8.801-second time, 137.65-mph record

In January Matushita will start selling the "VIVI" electric bicycle. It is equipped with an improved nickel battery, weighs 51 pounds, has a 51-mile range, and sells for \$ 1,010. The charger adds another \$93.

**Electrifying Times has rejoined the FVEAA Exchange List by furnishing a copy of *Preview 2000* to the FVEAA.** This 56-page issue has specifications for twenty electric vehicles, hybrid cars, and even lists the cab section for an 18-wheeler Volvo hybrid truck. Space in this newsletter does not permit a complete review. If you are interested, I recommend you spend \$ 6 bucks to buy newsstand copy. You can also send \$12 for a year's subscription to *Bruce Meland, Publisher, Electrifying Times, 63600 Deschutes Market Road, Bend, OR 97701*. Be sure and tell him you want to start with the current issue.

**The MIT *Technology Review's* November-December issue has an informative article about fuel cells starting on page 54. The article is titled "Fill'er Up with Hydrogen".** That alone disqualifies it as an electric car. The 7-page article provides valuable information about a topic of interest to some members.

**Car Sick Country, the July-August issue published by the Sierra Club, Page 42** provides interesting arguments affecting electric cars. There are an increasing number of stories about urban sprawl and the way the country has developed in the past half-century. There are a number of places today where the annual cost of commuting exceeds annual mortgage payments.

Commuting is not a free ride. The author is convinced the "clean car" is an oxymoron. The car is an environmental disaster. Millions of persons use 1 ½ tons of steel fetch a gallon of milk. Car emissions are the major contributor to global-warming emissions. Auto accidents each year cause over 41,000 deaths.

*The Dark Side of America's Dream* is a recent Sierra Club's Challenge to Sprawl campaign. The report lauds Portland's efforts to control sprawl. Vice President Al Gore, today's self-proclaimed sprawl buster, in a recent speech in Detroit declared "cars have done more than fuel our commerce. Cars have freed the American spirit and given us a chance to chase our dreams". The article concludes with the question, The article concludes "But must we chase that dream at 90 miles per hour in a sealed cocoon"?

## An Editorial concerning hybrid vehicles

I received fourteen articles about hybrids and fuel-cell vehicles this month. They are not reviewed in this newsletter. Many of these stories originate as press releases from auto manufacturers. They reveal that Detroit has practically abandoned further electric vehicle development and opted for hybrids.

## Hybrid Editorial - Concluded

Hybrids are a laudable near-term move that will reduce petroleum consumption. The heart of the improvement is better fuel management by power averaging. They are a logical extension of Charles Kettering's invention of the self-starter that initiated acceptance of internal combustion engine cars. He recognized that a small dc series-wound motor had an enormous short-time overload capability that could be used to start an engine. A typical hybrid has a 35-kilowatt starter-generator and small NiMH secondary battery.

These are not **electric vehicles**, the focus of our organization. All use petroleum fuels or coal-derived methanol. These are not renewable fuels. They cannot use solar, hydro, or nuclear energy. Unless the car has secondary batteries and is equipped with a plug for battery charging from some electrical energy source they are not electric vehicles in my judgment.

Fuel cells are another matter. Gaseous hydrogen is the principal reactive ingredient. The question is how the hydrogen is derived. It can be obtained by water electrolysis using a variety of primary energy sources. This is an expensive process. The limitation is on-board storage of the hydrogen. One way would be cryogenic storage of liquid hydrogen, dangerous to handle and hardly a consumer product. The second storage method is by pressure of about 2400-psi. The energy required to compress the gas to this level is more than the energy required by an electric vehicle for the same mileage. One of my college teachers noted, "The game is over when it takes more energy to mine a pound of coal than the combustion of that coal produces". Simple energy input-output analysis.

Hydrogen can also be extracted from gasoline. This requires an expensive, small on-board refining plant. Then there is the cost of the platinum catalyst used in the reaction. These are serious obstacles that never appear in the press releases for a commercial fuel cell passenger car.

Bill Shafer  
December 1, 2000

--Cut here to use for renewal

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## MEMBERSHIP RENEWAL REMINDER

A reminder that your FVEAA membership renewal application for our fiscal 2000-2001 was included with the last newsletter. Your \$ 20 dues provide the resources for our activities. Preparation of each monthly newsletter costs about \$ 60. We must have 36 members to pay for this vital activity. Last year the FVEAA had 55 paid members and a comfortable cushion to for other activities.

I am hoping most of you will renew your membership. Mail your check to Treasurer Corel if you haven't lost interest in electric vehicles:

Dale Corel, FVEAA Treasurer  
595 Gateshead North  
Elk Grove Village, IL 60007-3433

Be sure to include your address, phone number, and e-mail address so the new roster will have current information. The roster will be sent to paid members only with the February Newsletter.

BILL

--Cut here for membership renewal

## FVEAA OBJECTIVES FOR NEXT YEAR

It is not likely that Santa Claus will bring you *Corbin Sparrow* for Christmas. It is also unlikely that Detroit will be providing new electric vehicles next year. They are all furiously working on hybrids. Automakers have failed to exploit the usefulness of short-range electric cars or acknowledge the annual savings when use of an electric car is substituted for this type of driving. It is up to hobbyists who have converted vehicles to electric drive to again sustain the concept.

Realistically a converted vehicle is not optimized. You cannot start with your competitor's product and produce as good an electric vehicle as a purpose-built car. The conversion does have advantages:

- You can have an electric car in service about six months after you start a conversion project. Once it is used for short-range trips you will begin to enjoy the environmental advantages and reduction in annual cost the car will provide compared with using an IC engine car.
- The support offered from the Illinois Alternate Fuels Rebate Program to Chicago area persons completing a conversion will reduce your cost from \$ 8,000 to an affordable \$ 4,000. **Take advantage of the program.** Get your electric car on the road.

I suggest the FVEAA this year make a special effort to initiate conversions. This should include the now-stalled Triton Project, a similar project being considered by IIT and, most-importantly, persuade individual members to get started.

Another objective for this year is to start regular distribution of the monthly Newsletter via e-mail. The November issue was successfully sent out. If that experience is repeated with this issue we should be well under way. I believe e-mail may significantly increase awareness of our activities.

BILL

--Cut here for membership renewal

## RENEW NOW AND CONVERT A CAR NEXT YEAR!

PLEASE PRINT

Name \_\_\_\_\_

Date \_\_\_\_\_

Address \_\_\_\_\_

Phone (\_\_\_\_) \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

Subzip \_\_\_\_\_

E-mail Address \_\_\_\_\_

(Remember to include your check)

