

## FVEAA NEWSLETTER FOR AUGUST 2004

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

**NEXT MEETING: Friday, August 20 at 8:00 PM in the Triton INDUSTRIAL CAREERS BUILDING, (East Campus) in Room 108**

**DISCUSSION TOPICS: 1. EV license plate status. 2. Battery tester. 3. Proposed dragrace event. 4. 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 August will be \$ 6.

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

My dialog with the Secretary of State's Vehicle Services Director continues. He has rejected my argument that when a pickup truck is converted to electric power by placing the battery pack between the frame rails and below the truck bed should cause the vehicle to be reclassified from Division 2 to 1. This would make it eligible for an EV plate. The dialog will continue. As it stands converted pickup trucks will continue to be classified as Division 2 vehicles. I hope to get an affidavit from former member Dave Stensland describing the process used several years ago when he was the first to adopt this configuration and received an EV Plate.

I did not receive a response from Battery Service to my request for their presentation on a deep discharge battery tester. I have asked Kevin Zak to invite the SNAP ON Tool representative to attend a future meeting. We will continue discussion of this matter at a future meeting. Could we design and build our own?

This Newsletter also contains the preliminary recommendation that the FVEAA become a sponsor of an alternative fuel drag race at the Joliet Route 66 facility. This subject is a discussion item for August

I received an e-mail notice of an Alternative Fuel Vehicle Event planned for August 28<sup>th</sup> at the Elgin Community College. The arrangements are uncertain. Ray Oviyach has offered to tow the Triton Ranger to the event and new member Rob Morden, who has the only EV within driving distance, said he would be willing to attend the event if his vehicle is operational. I will update the members on this item.

The State of California is considering showering benefits on hybrid vehicle purchasers. Items being considered include use of the High-Occupancy Vehicle Lane with only the driver, financial incentives, tax rebates, and to allow them to park in handicapped spaces. Meanwhile, nary a word about electric vehicles.

BILL

## MINUTES OF July 16, 2004 MEETING

The meeting at Triton College was called to order by President Shafer at 8:15pm. Nineteen members and one guest attended. Minutes of the July meeting were approved with a correction of the meeting date to July 16<sup>th</sup>. Treasurer Corel's report of \$2,768.10 and 3,321.41 in checking was accepted. Bill noted that Ed Meyer is back & present, former member Joan Ashdown has rejoined, and new member Robert Morden of Aurora has bought George K's car. He will use it for his commute to the Metra station.

Bob Morden brought a Wiley controller that George used in his previous car. This device uses paralleled MOSFET transistors. Curtis and DCP controllers use a single Integrated Gate Bipolar Transistor (IGBT) unit which has 100 times the power handling capacity of a MOSFET.

Ted Lowe and Tim Moore gave a report on the Wheaton parade. There was strong support for repeating our attendance next year due to interest by the vast crowd.

Bill gave an update on EV truck license plates, he pointed out to the Secretary of State EV that pick up trucks no longer have a hauling capacity after conversion and should be eligible for EV plates.

Bill had a call from Jim Corder who lives on Chicago's south side, 24-miles from Triton. He inquired about the availability of a 240-volt outlet for opportunity charging his commercially converted car. A 240-volt charging system can charge four times faster than a 120-volt system but these circuits are rare. In the home they are used for electric ranges and air conditioners. Kevin Zak noted that 12-volt nickel-zinc batteries are available from Evercell for \$ 300. Each unit its own charger.

John Jeide gave a presentation on a different type of hybrid that uses a cement mixer hydraulic pump. Members were intrigued with the idea as well as his photos of a vehicle of this type he built several years ago. John never used it for more than one half-hour. Ed Meyer mentioned a similar usage in airplanes, but that the unit overheats after about an hour and requires extensive cooling.

Ted Lowe reminded members of the solar energy meeting July 17<sup>th</sup> and he also showed the Metro Section of the Tribune for July 16<sup>th</sup> that featured his solar powered house and car. Jim Hallenbeck announced that he purchased the Wheaton Volkswagen and is in need of parts to rebuild and upgrade the electrical system.

Kevin Zak gave a report about NGT Racing. "Bad Amplitude" has been dismantled and will be replaced with a new dragster. It should be ready in a couple of months. He also reported that a battery tester is available for \$ 900 from SNAP ON Tools. Kevin also led a discussion about a possible Alternative Fuel Vehicle Invitational at Joliet Route 66. The August Newsletter will contain a description. .

Bill finished the meeting by noting his Mazda gets 67 miles/gallon". See the article about this calculation in the next newsletter.

The meeting was recessed to the lab at 9:40 for "coffee and discussion". It adjourned at 10:45 PM.

Submitted by Secretary Tim Moore

## FROM OTHER EV NEWSLETTERS AND OTHER ARTICLES AFFECTING EV's

**Denver's June Newsletter** had few articles about EV's. It contained extensive coverage of hybrids. Six vehicles competed in the *Electrathon* competition they sponsored. There was story about a Japanese man attempting a round-the-world trip on an electric scooter. It may take 3 years.

**The EEVC July Newsletter** feature article was about the drag race competition in Maryland sponsored by the Washington DC EV group. Eight vehicles competed. The fastest time was logged by an electric Dragster *Orange Juice*. It did the ¼ mile in 11.39. The most unusual was a modified, 156-volt *Corbin Sparrow*. Its time was 21.115. The Cinnaminson High School converted Escort, the *Olympian* had a time of 24.65.

The issue also had an article about a hydrogen assessment. The authors compared losses and environmental costs of using electricity generated by renewable sources directly compared with electrolyzing water directly. They found that process was 44% efficient. The study concludes hydrogen production from intermittent sources is not economical. A solar cell "farm" in Arizona covering 31,000 square kilometers (about 5% of the total land area) could generate the energy presently consumed annually by automobiles in the US. (Editors note – The Department of Energy a few years ago conducted a similar study for a facility in Nevada. It came to a similar conclusion))

**The July 26<sup>th</sup> issue of Forbes** had an article about the growth in transistor power handling ability since its first development in 1945. Early transistors were bipolar, point-junction devices used in computer applications. Each unit had the ability to handle about 1 watt per gate. Millions of these are now etched on computer chip logic circuits.

**Transistors for power applications.** Becke & Wheatly invented the bipolar transistor, in 1950 . It could handle about 1 watt per gate. This was followed in 1960 by MOSFET (Metal Oxide Field Effect Transistor). It could handle 100 watts per gate. In 1980 the IGBT (Integrated Gate Bipolar Transistor) was introduced. Initially it could also handle 100-watt per gate. Improvements have increased present ability to about 10 kW.

**EV Equivalent Mileage.** The recent *Tour de Sol* results included a term "equivalent mileage" for electric cars. Cinnaminson High School's converted Escort was a reported to be 105.6 mpg. I decided to calculate my Mazda equivalent mileage.

Over 15 years the kWh meter on the car's charging circuit has registered an energy consumption of 0.5 kWh per mile of travel. Each kWh is equivalent to 3413 Btu. Regular gasoline contains about 115,000 Btu per gallon:

$$\text{Equivalent mileage} = (115,000\text{Btu/gal}) (1.0 \text{ kWh}/3413 \text{ Btu})(1\text{mile}/0.5 \text{ kWh}) = 67 \text{ miles/gallon}$$

This is a misleading number that tells only a part of the story. The generating units (nuclear or coal-fired) are about 33% efficient. My equivalent mileage drops to 22 mpg when this is included. The High School's efficiency-adjusted equivalent mileage is 35.2.

On the same basis, Tim Moore, who has realized 0.3 kWh/mile in 13,000 miles of driving, has a 40-mpg equivalent energy efficiency.

## Proposal

FVEAA and NGT Racing, LLC Present:

### *The Chicago Alternative Fuel Vehicle Drag Races*

FVEAA and NGT Racing, LLC, in partnership, host an Event for electric and alternative fuel vehicles. Companies and organizations interested in Chicago advertising would sponsor this Event.

Similar in concept to NEDRA races held throughout the year, the Chicago Event will be a drag race held at Route 66 Raceway in Joliet, Illinois sometime mid or late year 2005. The date of the Event would be determined by the Racetrack and depend on their schedule for the year. This Event would be an invitational involving participants all across the country.

As an incentive to draw participation each participant would be paid a mileage reimbursement of \$0.20 per mile (one way) from his or her home base, as determined by Map Quest. Cash and other prizes would be awarded. Advertising sponsors would supply these.

In combination with Event, we can consider including other activities to help draw paying spectators and also encourage Media coverage. There could be a car show, Junior Drasters, an *Electrathon*, a swap meet, or a charity event.

The *Chicago Museum of Science and Industry* has expressed interest in joining this venture by lending their name to the Event – and to have their restored 1906 Milburn Electric Car on display. Their participation will materially assist in attracting sponsors.

**Motorsport Unlimited TV** has expressed a willingness to devote a one- hour episode to the Event. **Drag News Magazine** has also expressed willingness to run an article about the Event.

The Event is intended to generate a profit for the partnership. The net proceeds will be divided; the FVEAA will receive 25% and NGT Racing the remaining 75%.

There are details to be addressed; racetrack rental, date, sponsors, participants, media coverage, trophies and prizes, manpower at the Event, hotel accommodations, post-race dinner, T-shirts and hats, and others not listed here.

*This document is intended to provide a broad outline for discussion of the proposed Event at the August 20<sup>th</sup> meeting*

August 9, 2004