

FVEAA NEWSLETTER FOR 2003

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

NEXT MEETING: Friday, October 18 at 8 PM in the Triton INDUSTRIAL CAREERS BUILDING, (East Campus), Room 108

DISCUSSION TOPICS: Low temperature effects on batteries. 2. 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 October will be \$ 2.

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

Or contact FVEAA President William H. Shafer
1522 Clinton Place
River Forest, IL 60305-1208
(708) 771-5202
E-Mail Assessorbill@cs.com

PRESEZ

We are approaching the winter season, a time when the lead-acid battery loss of capacity becomes a matter of concern. This is the only scheduled discussion item for the meeting. Of course there will be plenty of time in Open Topics for other subjects.

This minutes includes a report on the September Seminar. It was a success. Seminar Manager Ted Lowe did an excellent job in organizing the event. He also recruited a lot of help from FVEAA members in preparing and distributing publicity. Take a bow Ted!

I have been asked why the Newsletter doesn't contain information about hybrids, since they will be the next big change in automobiles. Many EV groups have the majority of their newsletter devoted to this subject.

There are two reasons:

1. These vehicles **are not electric**. Gasoline still supplies the energy consumed. Toyota publicity says, "You don't have to plug them in." That is an affirmation of my position.
2. There are a lot of articles about hybrids in publications. Auto company publicity staffs write a lot of these. Recently Toyota had a 5-page advertisement in many magazines. It is a good description of the *PRIUS*.

I believe the subject is adequately covered.

BILL

MINUTES OF THE SEPTEMBER 19 MEETING

President Shafer called the meeting at Triton to order at 8PM. Thirteen members attended and it was the first-time meeting for seven. Most of these had attended the Seminar. The minutes of the August meeting were approved as published.

There was a quick go-around introduction for the benefit of first-time attendees. Bill stated the Seminar was a success. The auditorium was filled. He asked Seminar manager, Ted Lowe, to conduct an evaluation of the event. Ted reported 85 persons attended. About half of those making reservations on the website were no-shows. 8-10 persons said they read about the Seminar in the *Chicago Tribune*. The *Herald* wrote an article about the seminar about a week before the event. There was no TV coverage. Ted reported that he learned a lot about the media from his publicity efforts. WTTW wanted an exclusive on the story to do a segment on *Chicago Tonight*. He declined.

Ted Continued. Only one person showed up from the notices sent out to car clubs. Part of the problem maybe in the timing. The mailings were too late for information about the Seminar to be effectively let their membership know about the Seminar. Ted recommended car club letters be sent out two or three months ahead of the any future Seminar.

There was a lot of effort by members to place flyers. They produced a minimal response. Ted recommended that future publicity should be directed at contact car lovers, car techies, and environmental types as a likely audience. Getting better results will require starting the publicity earlier. He also reported there was an advantage of being at Triton, a recognized educational institution. He observed that roadside signs on Fifth Avenue and on the Triton College Sign pointing to the Seminar site should be included in the future..

The website was not as effective as expected. We need to have better communication between seminar organizers and the webmaster. There needs to be more emphasis on website registration and reminder e-mails to reduce the no-shows.

There should be better organization of the display and seminar. Holding the display in adjacent auto labs because of inclement weather caused some confusion. Attendees did not realize there were displays in the east lab and had to be directed to them. Each vehicle displayed should have a number, assigned position and a brief description. These should be handed out at the registration desk. More than one person is required to man this desk. Handout literature should be at this location.

Discussion of the dues structure was the second discussion item. President Shafer proposed the following two changes:

1. Reduce the fee to \$ 15 for persons electing to receive the monthly newsletter via e-mail.
2. Rebate \$10 of the fee for those who are members of the National EAA. We receive \$10 for each person electing the FVEAA as his home chapter.

After much discussion of these proposals, an advisory vote to the FVEAA Board was to make no changes.

The meeting was recessed to the auto lab where three vehicles were receiving an opportunity charge and where the coffee & was located. The meeting was adjourned at 10:45 PM.

From the notes of Bill Shafer in the absence of Secretary Moore.

FROM OTHER EV NEWSLETTERS AND ARTICLES AFFECTING ELECTRIC VEHICLES

The Eastern Electric Vehicle Club is one of the few groups that publish a monthly newsletter. In their September Newsletter they report on the annual celebration of Duryea Day. Only one vehicle showed up for the rally, and it was a Prius. Part of the reason is that Boyertown is beyond the range of EV's from their home base in Valley Forge. The star of the event was a 1914 Detroit Electric from the Boyertown museum. The issue has the final chapter of the Book about Charles Steinmetz.

RRVC' Vice President has departed from the east to begin living "Off-the-Grid" in northern Minnesota. He will continue working on a five kW, 5-phase alternator. He will also have a 3,600 watt solar array.

The issue also reports that GM has been working on a "wheel hub" motor. The idea is to install a 25kW motor in the front hub of each front wheel. GM has yet to solve the unsprung weight problem with this device. The motor windings will take an awful pounding from the roadway.

IIT Chemistry Professor, Dr. Peter Lycos, sent me an article from the September 22nd issue of Chemical & Engineering News. Nobel Prize winner Dr. George Olah, Director of the Loker Hydrocarbon Research Institute at the University of the Southern California University wrote a guest editorial about methanol. He says utilizing methanol would provide a better way of using fuel cells in automobiles and other applications.

Methane is usually produced by reacting carbon dioxide with hydrogen. The Fischer-Tropsch process than can catalytically convert the substance to methanol. (Surely you all remember the process from your chemistry lessons don't you?)

The twist: carbon dioxide should come from a source not requiring fossil fuel burning. He mentions nuclear energy, solar energy, and hydroelectric sources as possibilities.

Methanol, is a colorless liquid with a boiling point of 64.7° C. It certainly is a safer, more-practical carrier of hydrogen than using the gas as now proposed. Methanol can be dispensed by facilities now at every gasoline station, **with once caveat** - the fluid can cause degradation of present fuel systems gaskets. Methanol has a heat content per unit of volume about equal to ethanol and could be used by modified internal combustion engines. Sounds like a winner to me.

WHAT'S IN A NAME

When John Stockberger in 1982 formed the FVEAA as a not-for profit organization he chose the name, "Fox Valley Electric Auto Association". It was descriptive of Batavia where he lived. It has served us well.

In these days of web searches it may be time to reconsider our name. Someone searching for "electric cars" or "electric vehicles" will find our website, but where exactly are we? Most EV organizations have a name related to their location, "Denver Electric Auto Association" for example. Should we consider a new name like "Chicago Electric Vehicle Association"? This would require reincorporating the CVEA as Vas a successor to FVEAA.

What's your opinion?

IN-SITU BATTERY LOAD TESTING

Load testing is the only definitive way of determining the capability of a lead-acid electric vehicle battery. This is not easily done. It requires a load on each battery and recording the battery voltage under load. These can be over 300 amps. Acceleration currents usually are near controller capacity of 400 amps. Currents of the magnitudes must be treated with the utmost respect.

I devised a convenient way to do this on the batteries, in-place. I used a digital voltmeter with its leads extended with a light-gage 2-conductor lamp cord terminated by small alligator clips. To perform the test, I placed the voltmeter leads on the terminals of one battery. A volunteer passenger, my 10-year old grandson, during each hard-acceleration observed and recorded the minimum voltage reading. Twelve runs were required for my 96-volt (nominal) system using 12 Trojan 8-volt batteries.

The following table summarizes the results:

Battery #	Voltage 1	V2 (After 8-miles)	V3 (Accelerating)	V4 Delta
1	8.52	8.37	7.57	0.71
2	.50	.37	.04	1.30
3	.50	.37	.42	.96
4	.51	.36	.42	1.30
5	.51	.38	6.80	1.52
6	.52	.37	7.83	1.13
7	.52	.37	7.01	1.42
8	.53	.34	6.82	1.61
9	.49	.36	6.96	1.48
10	.51	.39	6.95	1.53
11	.55	.34	6.02	1.36
12	.48	.39	6.74	1.68
System	111.2			

Notes:

V1 was made with the battery pack charged.

V2 was measured after an 8-mile round trip.

V3 measurements are the minimum voltage of each battery during heavy acceleration.

V4 is the difference between the resting voltage and the acceleration reading.

Battery pack calculated resistance, including connections, @ 300 amps = 0.305 ohms

Charger voltage = 119.4 volts (2.48 volts/cell)

Analysis

There are four batteries in front and eight in the rear. Batteries # 8, # 10, and # 12 are in rear corners. They exhibited voltage drops that exceed the average. It is not yet time for replacements because the pack is three years old. The data reveals differences caused by manufacturing or temperature variations.

BILL