FOX VALLEY ELECTRIC AUTO ASSOCIATION NEWSLETTER FOR January, 2002

NEXT MEETING: Saturday, January 19 at 10 AM in the Triton INDUSTRIAL CAREERS BUILDING (East Campus) and Room 108

DISCUSSION TOPICS: 1. The *Ranger* display. 2. Membership renewal status. 3.Website improvements. 4. Conversions planned for 2002. 5. Open Topics.

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 January will be $ 18.

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

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PRESEZ

The meeting preference day is evenly split between Friday evening and Saturday morning. Most renewal membership sheets so far have no preference. It was not surprising that Friday was preferred by a show of hands at December's Friday meeting.

The January meeting has been shifted to the second Saturday of the month for this time only. There were two reasons for this change:

(1) The exhibit of the Triton Ranger at the World of Wheels Event on February 1-3. If there are last-minute items on this they can be discussed on January 19.
(2) We are inviting the Triton-recruited persons for the *Ranger* project to return for a chance to drive their finished product and give their evaluation for a final report document being prepared.

I expected attrition in paid memberships this year. Auto manufacturers have abandoned electric car plans in favor of hybrids. There are no news stories about EVs coming from Detroit. Gasoline price continues to fluctuate and is currently at another low. Global warming is not today's "hot" topic.

Thirty members have renewed their membership out of last year's total of 62. Ten of the 30 have electric cars. Paid memberships finance our activities. Each issue of the newsletter costs about $60 to prepare and distribute. I'm sure that oversight was the reason for many renewal failures. Each failure will receive a reminder enclosure with this newsletter.

Put the *World of Wheels* on you calendar for something to attend. There will be three EVs exhibited; NetGain's Dragster, Triton's Ranger, and Steve Grushas' Escort. Last year 300,000 attended the event.

BILL

MINUTES OF THE DECEMBER 14TH MEETING

President Shafer called the meting to order at 8 PM. Sixteen members welcomed new member Rob Glowacki. The minutes of the November meeting were approved as published. We accepted Treasurer Corel's report of $ 2,773.20 in the checking account and no change in the savings account.

The preferred meeting day was discussed. Friday was the choice of members attending. The Board will make a decision after February.

Rich Ness, who has been the FVEAA Secretary, asked to be relieved of his duties if a replacement could be found. New member Tim Moore agreed to become the Secretary. (I want to thank Rich for four years of service as FVEAA Secretary). All proposed officers for 2001 were unanimously elected.

There was a general discussion about the Triton Project. President Shafer will prepare a final report on the effort. It will be published in a future newsletter. He noted the Project took 28 weeks of four-hour work sessions. He also noted that any one time a maximum of four persons could effectively work . The rest engaged in lively discussions about EVs. Six persons joined the FVEAA during the Project.

Triton is awaiting the EPA decision on granting the request for a $ 4,000 reimbursement for the conversion before deciding the vehicle use and disposition. In the meantime the FVEAA retains custody and will see the battery receives proper attention.

The meeting was adjourned at 9:20 to the Lab for a Ranger show-and-tell.

Submitted by Secretary
Richard Ness.

Affiliation with the National EAA?

During the past few weeks I have been asked several times by persons affiliated with the National EAA in California to make the FVEAA a Chapter of that Organization. The EAA currently has 20 affiliated chapters, seven of these in California. Their affiliation rules require five persons to be dual members of the EAA and FVEAA. EAA annual dues are $ 39. After affiliation there would be a $10 rebate to the FVEAA for each FVEAA member who is also a member of the EAA. The EAA publishes a good bi-monthly newsletter. There are also website links from the EAA website to affiliated chapters. It has been reported to me that it is difficult to find the FVEAA starting with the EAA website.

Affiliation has been rejected several times by the FVEAA Board. The principal rejection reason is because the $ 10/person rebate is insufficient to sustain our present program.

I have repeatedly asked the EAA to revise its affiliation policy. Our webmaster, Doug Mather, points out that the FVEAA is an open organization. With this in mind I propose the FVEAA should begin linkages to any EV group if there is no EAA action on my request. Any comments?

The opinions of FVEAA members adept at using the web will be especially valuable via e-mail.

BILL

From other EV Newsletters and articles affecting EVs

The Nov-Dec EV CIRCUIT from the Ottawa Group had a special report on user experience with lead acid batteries in EVs. The first was from *Pat Bierne* about using 20 Optima YT's in his 2000 Mazda Miata with a 120-volt system. Batteries are connected in buddy pairs each pair having a Rudman Regulator. The set theoretically provides 15 kWh H of energy storage at the C-3 rate. Daily use requires 8-10 kWh with an average current of about 100 amps. Two faulty units were replaced in the first six months. The batteries work best at 20 deg C and give about half range when the temperature drops to half this value.

Float charging is 14.5 volts; Resting is 13.1, Light load is 12.8, Heavy load is 12.1, Discharged voltage is 11.8. All these are at 20 degrees C.

Charging sequence is constant-volts to 14.5, then a 1-3 amp constant current.

Etienne Gibeault report is about his 1990 VW Jetta using 16 Exide GC-5 6-volt batteries. His commute is 32 miles with no recharging. At times he draws 200 amps for a short section on an expressway. Voltage reading at the end of a commute is about 84 volts. A K&W Charger delivers 15 amps recharge current and a finishing voltage of 118 volts.

Michael Anderson reports on his 1996 Ford Ranger. It has 22 Exide GC-5 batteries in truck bed insulated box. The box has R5 blue-board insulation and warmer blankets on top of R5 blue-board.

Energy consumption has been measured at 500 watthours/mile. Single-charge range is 43 miles. He expects the batteries will provide 6000 miles of driving.

Richard Haverhill has a 1988 Honda CRX conversion. He built it for a 25-mile round-trip commute that includes 15 miles of expressway travel. He is now on his third set of batteries in one year. The first and second sets were Exide Mariner 31NG-24 units. The first set was "fried" by driving 80 mph on the freeway. These marine batteries are only designed for a 40% depth of discharge. Another high-speed expressway trip fried the similar second set.

His third set were Trojan 31 XHS units designed for floor sweepers and fit into his battery boxes. These are 80% discharge depth batteries. These batteries went into thermal runaway after three hours of charging. The batteries reached 50 degrees C. He stated that new batteries require lower charging voltages. Subsequent summer driving caused several instances of 50- degree battery temperatures and cells began to fail. He is now on his fourth set.

His conclusion is that thermal control between 25-35 degrees C is essential for battery longevity.

Rick Lane used 8-volt batteries in his Cavalier conversion that has 15 batteries in a 120-volt pack. The first two were Trojan T890. Rick experienced huge voltage drops under load. He confirmed the units had much higher internal resistance than the 6-volt units he has used in other conversions. The resistance caused battery extreme heating with pack temperatures regularly getting up to 45 degrees C. The first replacement ran for 2 years and 8125 miles. The second set gave only 2875 miles. The third was an Exide E4800, a similar unit.

The Exide replacement was no better. Rick recommends not using 8-volt batteries for on-road conversions. He says there is much better value for the money in other batteries.

From other EV Newsletters and articles affecting EVs – Concluded

Alain St-Yeves reported on his experience with a converted Chevy S-10. He has gone through three battery packs in 22,500 miles of driving starting in August of 1998. His first set were Canadian 702 H/D 230-amp-hour units that lasted 14 months (15,000 miles). The second was Trans-Canada 2GC-220 units that lasted 5 months (2500 miles). The third set was Trans-Canada A-1255, 230 amp-hrs units that lasted 10 months (5000 miles). He is now on in fourth set, Exide GC-5 that so far has gone 6800 miles.

The issue also has an article about electric bicycles. The LaFree has torque-speed sensors that match the electrical output to the amount of pedaling effort and a twist grip that changes the proportions of rider input and electric assist. The Currie bike is a kit to be used on a standard mountain bike. It has a planetary drive system that delivers 400 watts to supplement the typical 100-200 watts human pedaling capability. More info on these is on their websites: **www.lafree.com**, and **www.currietech.com** .

The December Newsletter from DEVC, the Denver group, has lots of information about fuel cell developments. The most unique article concerns Patagonia, in Argentina, where a group is studying a proposal to harness the wind power in that area to produce and export liquid hydrogen for fuel-cell use. A German economic study found that hydrogen obtained from natural gas reforming costs 2.4 cents/kWh while the electrolysis cost is 71 cents/kWh from photocell sources. (Dr. Lycos please note)

The latest issue from EEVC, the Eastern Group Organization, had an informative article about the ***SEGWAY,*** the latest, highly publicized EV for personal transportation. It is a gyroscopically stabilized, 2-wheel platform. With a vertically aligned gyro axis the device resists tipping from any direction. Using the system requires slightly shifting your weight for forward, reverse, or turning. Sensors in the platform individually respond to control the two motors. It is a clever, 80-pound, $ 3000 vehicle that is to big for sidewalks and too small for street use.

India has developed the world's least-expensive car. CT 12.23/01. So far India has not been touched by EV developments. Now a California-based company, Amerigon Technologies, has developed the $ 5,250 *REVA* for this market and holds a 25% stake in the venture. India charges an additional $ 1,225 for imported components. The vehicle is a 2-door hatchback with a payload capacity of 520 pounds. It is especially suited for India's crowded streets. One principal drawbacks is the lack of a suitable electric system infrastructure to for the 240-volt, 15-amp charger.

Ford offering two EVs. Chicago Sun-Times 10/11/01. The *Neighbour* is a 2 or 4 seater with a 25 mph top speed, a 30-mile range, a 72-volt battery system, and a sale price of $ 7,000. The TH!NK *CITI* is the other being test-marketed in California with a $ 199 monthly lease. Ford said the CITI purchase price will be in the "$ 20,000 range.

There was an interesting article about car customization in the October 29th issue of the Chicago Tribune. In 1992 GM brought a prototype Impala SS to the Specialty Equipment Marketing Association (SEMA), an organization of companies that produce high-performance components and dress-up accessories. GM wanted to find out if there was interest in a car meant for customizing and adding performance options. There was. The event became the launching pad for Impala production in 1994-96. Customization caters to a customer's desire for a unique, personalized car. Could this concept be used for electric conversions? It seems to me that EVs to be successful should have a distinctive appearance that says, LOOK! I have and EV. The *Corbin Sparrow, GM's EV1, or Ford's TH!NK* are examples. It is either that or customized conversion.