

FOX VALLEY ELECTRIC AUTO ASSOCIATION NEWSLETTER

NEXT MEETING: Friday, November 17 at 7:30 PM, Room 108 in Triton's Industrial Careers Building (East Campus)

DISCUSSION TOPICS: 1. Election of Officers for 2001. 2. E-mailing the newsletter. 3. EV batteries. (See PresseZ).

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 November will be \$ 20.

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

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November 2000 PRESSEZ

Our first business will be election of officers for the coming year. All present officers have agreed to serve another term. Nominations from the floor will be accepted for anyone who wishes to become a candidate. The candidate list recommended by the nominating committee is contained in this issue.

I am working to e-mail the newsletter. I sent a confirmation request to members who provided their e-mail address. The Mailer Daemon returned seven addresses as undeliverable. I will e-mail an advance copy of this November Newsletter to those who confirmed receipt of the trial message. Member comment on this subject is requested either at the meeting or by e-mail. I will present e-mailed comments received at the meeting. After updating the membership list for 2001 I plan to e-mail two successive issues of future newsletter issues. If these are received and acceptable we can resume discussion about establishing an e-mail only membership class.

For the last part of the meeting we are fortunate to have guest speakers. Tom and Don Baker are the principals at Battery Service Corporation. This will be their second time at our group. Those attending their first appearance learned a lot about batteries. Their presentation will lead a battery discussion.

BILL

MINUTES of the October, 2000 meeting

The meeting was called to order by President Shafer at Triton College at 7:30 PM. Twelve members attended. .

The minutes were approved as published in the Newsletter. Treasurer Corel reported no change in either account. His report was accepted.

There was a discussion of e-mailing the monthly newsletter copy. Bill reported he was unable to send newsletter copies directly to members furnishing e-mail addresses and using his CompuServe Address Book. He will send an e-mail asking for confirmation of each member's e-mail address and then have a trial distribution of an advance copy of the November Newsletter to those who reply. The monthly newsletter is also available on the FVEAA website.

After the break there was a discussion of "What Should a Converted Electric Car Have?" The following general parameters were established:

1. Commercial components will be used.
2. The maximum weight will be 3,300 pounds
3. One-third of the weight will be batteries
4. The type of lead -acid battery is optional.
5. A DC motor will be used.
6. Each component will be rated as follows: A = Essential
 B = Important
 C = Desirable
 D= Marginal

The motor chosen was a Warfield or Advanced DC 9" series-wound Motor. Rating -A.
A 500-amp controller. Rating - A.

The following battery options were discussed:

<u>Optima 12-volt Sealed</u>	<u>Trojan T-125 6-volt - Flooded</u>	<u>Trojan T-875 8-volt Flooded</u>
Weight 43 Pounds	Weight 64 Pounds	Weight 61 Pounds
26 Units - 312 or 156 volts	18 Units - 108 volts	18 Units - 144 volts
Footprint - 261x168x8 in.	Footprint - 184x130x11 in.	Footprint 184x130x11 in.

The following components were discussed and rated:

DC-DC converter	Rated A
Regenerative Braking	C
Passenger Heating	A (800-watt ceramic heater replacing heater core)
Battery Heating	A (Either 30-watt under battery or insulated box)
Power Steering	B (If donor car already has it)

Member Zak gave us an update on the Net Gain Dragster. The last racing appearance was at the Joliet Track. The final runs were in the 11-second time. The car is now off line and ready for upgrading during the winter to include two motors and replacement of the Bolder battery bank that is getting a little tired. They are exploring the idea of substituting Panasonic capacitors. The Dragster was the hit of a Classic Car Show in Morris. It will be exhibited at the World of Wheels Auto Show in February, the week preceding the Chicago Auto Show.

From the meeting notes of Bill Shafer in the absence of Secretary Dick Ness

From Other EV newsletters and articles affecting EV's

DEVC, the Denver Organization, in their October issue, reported Jonathan Sawyer drove his EV-1 from California to the Electric Vehicle Symposium in Toronto. He stopped in Boulder for a recharge. He averaged about 200 miles per day with one recharging stop. He also recharged in Chicago where two FEVAA members had a chance to inspect the car. The charger has been redesigned, weighs 50 pounds, and fits in the front seat.

The Postal Service has awarded *FORD* a competitive bid contract for 500 electric delivery vans for trial service in California. The contract required the vehicle cost no more than a regular van so the California Energy Commission supplied a subsidy payment to cover the extra cost. The new EVs will be making 250,000 pollution free deliveries per day.

There were a number of articles about hybrid vehicles. These cars have IC engines with oversized "starters". The FVEAA Editor does not review press releases for these vehicles since they are not **electric cars**.

EEVC, the Eastern Group, in their October newsletter, had an article by Dr. Alfred Ferreri that featured his advocacy for his *Uni Track* vehicle concept. It is basically a motorcycle with a lightweight body. It has two wheels, a 96 inch wheelbase, is 140 inches overall, weighs 1000 pounds, and capable of cruising at 150 mph. The linear motion, gyroscopic action of the wheels, and low center of gravity combine in this high performance vehicle. Two "training" wheels unfold from the body to keep the vehicle upright when it comes to a stop. They are retracted when the vehicle comes up to speed. It is designed for a small IC engine, but could also be electric powered.

Current Events, the bi-monthly publication of the national EAA, in their June-July issue headlined the news that the California Air Resources Board (CARB) has reconfirmed the Zero Emission Vehicle (ZEV) mandate. There are about 2300 electric vehicles now in California, most of them resulting from ZEV requirements. Automakers furnished enough vehicles to meet their obligations under the previous schedule and then quit manufacturing more. As it now stands The ZEV will require that 10% of vehicles sold in California be ZEV, beginning with sales in 2003.

Former Editor Clare Bell, from her new position with Ford TH!NK in Norway, had an article captioned "The REAL Reason We Need Conversions". In it she argues that high-mileage hybrids and better emission controls are the likely vehicles of choice in the future so the present ZEV mandate is likely to be further delayed. She advises that we follow the OPEC maxim to "Trust you fellows but tie up your camel". She states that persons who build their own conversions are still the outsiders. Conversions built by individuals in a decentralized fashion cannot be easily co-opted. She concludes that we should keep building conversions until commercial EVs are firmly established and mass-marketed.

EV News, now being published by Energy Futures in Boulder Colorado, in their October issue featured coverage of the EVS-17 Symposium in Montreal. Over 1500 persons attended. The publication also reports that Capstone has furnished 150 microturbines for hybrid vehicle applications. The latest is used in an e-trolley. These small turbines spin at 96,000 rpm and are about as efficient as the usual diesel bus engine. Scheduled maintenance is about 20,000 hours between overhauls.

Daimler-Chrysler has tested the latest version of the NECAR fuel cell vehicle that uses two 35 kW proton exchange membrane cells. Their efficiency is 37.7 % overall. There was also another story about the GM independent fuel cell program being tested in the *PRECEPT* experimental van.

About 2000 Ford *Ranger* pickup EV have been sold according to Ford.

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

EV Circuit published by the Ottawa group in their September/Oct issue had an informative editorial by Rick Lane about his attendance at EVS-17 in Montreal. It was clear to him that auto manufacturers want to build hybrid cars and have almost completely dropped battery EV development. He observed that fuel cell work is directed to a generating source to

replace the engine alternator. In a related article he notes that hybrids are being emphasized because car owners, "don't want to plug in a charger or run out of juice".

He also reported his impressions when he drove display cars at the conference. The best observation was made about the TH!NK CITY He asks, "did someone go out of their way to make this vehicle unattractive?" The PRIUS was boring, the Insight exciting, and Toyota's e-com was one of his favorites.

Hybrid car blends economy, boredom. Chicago Sun-Times 9/18/00. Auto writer Jim Jedlicka after testing the *PRIUS* declared it to be neither futuristic nor exciting, unlike the *INSIGHT* that turns heads. Toyota has sold 35,000 of these cars but they are new to the US. He noted that battery powered cars have been a sales bust in the US. (Sounds like he swallowed the GM line hook, line, and sinker). He notes these vehicles can't handle cold weather (He should talk to members of the Ottawa EV Organization).

Proton Power. Popular Science 11/00 page 48. This is a short analysis of a battery development by the Japanese NEC Co. The battery acts more as a capacitor than the usual electrochemical cell. When charged, hydrogen atoms are bound within the cathode material. Electrons split off the atom and flow from cathode to anode. Protons flow through the electrolyte where they recombine with the electrons to reform the hydrogen molecule during discharge. This flow is quicker than the molecular exchange in a conventional cell. The proton battery can be recharged in less than five minutes. The capture and release of electrons causes less degradation of the electrodes than the usual chemical reactions that take place in conventional secondary batteries. This should give the new battery a long charge-discharge cycle life.

GM, Toyota to Announce a Pact to Develop 'Alternate-Fuel Vehicles' through 2004. Wall Street Journal April 19, 2000. The five-year partnership is seen an answer to the Daimler-Chrysler, Ford, and Ballard Power combination with three oil companies. Competition between automakers to develop a marketable fuel cell car has been intensifying. Fuel cells remain prohibitively expensive.

Are electric vehicles running out of gas? Michael Markowitz, Editorial Director at ednmag.com 8/19/00. (m.Markowitz@cahners.com). He notes that well-managed, established companies tend to listen to their customers, invest aggressively in technology, and make rational business decisions that work against delivering disruptive innovations. He notes that Honda fulfilled its commitment to furnish 300 battery vehicles in California and then exited the program. He wonders if other builders of prototype vehicles will follow Honda.

Fueling Debate. Chicago Tribune 9/10/00. This article says that a loophole in EPA Regulations exempting light-duty trucks, pickups, full-sized vans, and SUV's from mileage requirements enabled automakers to escape up to \$ 10.2 billion dollars in taxes last year. These were exempted on the theory that most were used in business and farms and contributed little to emission problems. Of course that has now changed. Friends of the Earth provided the following gas-guzzler penalties 22-22.5 mpg - \$ 1,000 per vehicle, 18-18.5 mpg - \$ 2,600, 14.4-15 mpg - \$ 4,500, and less than 12.6 mpg - \$ 7,700.

Power Broker. Chicago Tribune 9/10/2000 page 12. Robert Lutz, the former Chrysler CEO who retired when it was bought out by Germany's Daimler-Benz, is now the CEO of Exide – the battery manufacturer. He was brought in to correct and recover the disastrous decline of the company after Exide was convicted of selling old batteries in Florida as new units.

From Other EV newsletters and articles affecting EV-s – Continued

Regulators: By Whose Authority? Business Week 10/06/00, page 11. The Supreme Court in this session will hear a case brought by the American Trucking Association that will test the EPA's ability to set air quality standards. They contend that only the Congress has that authority and illegally delegated it to a regulatory agency. *Browner Vs the American Trucking Association* has immense implications. They argue the EPA has the right to set emission and mileage standards but lack the authority to set penalties. The EPA doesn't include cost when setting standards because of a 20-year old federal court ruling bars it from doing so.

Driving the debate. www.eponline.com September 00, page 10. This article is about the Partnership for a New Generation of Vehicles (PNGV). The organization of seven federal agencies, national laboratory research centers, universities, suppliers, and the Big 3 automakers, was created in 1993. Its purpose was to pave the way for the *supercar*. The program was supposed to US automaker readiness for the global market for cars. Foreign manufacturers were barred from the consortium, but global mergers and acquisitions of auto companies have posed some problems. The program goal was to move away from gasoline fuels and develop new powertrains. The consortium was to cut vehicle weight by up to

40%, decrease drag coefficient to 0.20 Cd reduce rolling friction to 0.005, have a highway fuel efficiency of 80 mpg, meet Tier II emission standard of 0.125 hydrocarbons and 0.2 NOx at 1000,000 miles, be at least 80% recyclable, and have production prototypes ready by 2002.

At its inception it was believed that battery powered vehicles would be an important element in reaching these lofty goals. Evidence shows that 85% of the cars in the US are driven less than 20 miles per day, something that EVs could deliver. Thus far over a billion dollars of government support has failed to produce an electric vehicle acceptable to the public.

More info on the PNGV can be found at website www.ta.doc.gov/pngv/cover/pngvcoverhtm.

Green Machines. Naperville SUN 10/8/00. Do you believe that electric vehicles are a dying breed? Think again. Although manufacturers are cutting back on their EV programs Ford had discerned a growing profitable market for specialized autos that will compliment rather than compete with conventional cars. TH!NK will roll out three new electric vehicles this year; The CITY – a 2-seat urban commuter, the NEIGHBOUR – an upgraded golf-cart type limited performance vehicle intended for restricted communities, and the eBIKE – an electrically powered upscale bicycle.

Electric Avenue. Metropolis 10/00. Frogdesign, a California design company, completed work for Ford's TH!NK Division's Neighborhood vehicle. The product was created to address the big gap between bicycles and automobiles. The National Highway Traffic Safety Administration has recognized a new vehicle class – the low speed vehicle meant to be driven where a motorcycle or subcompact car would ordinarily be used. This class has a top speed of 25 mph, seats 2-4 passengers, and has a 30-mile range. It could be suitable for trips between home and train station for the daily commute if expressways and arterial streets are not used. It looks like a souped-up golfcart or the late lamented *CitiCar* that is still running 30 years after production ceased.

Santa Cruz betting \$ 1-million on the future of electric bicycles. Lancaster Eagle-Gazette 8/20/00. Santa Cruz (CA) residents will be eligible for discounts, rebates, and even interest-free loans if they acquire an electric bike. The program is an attempt to get residents out of their cars and reduce vehicle congestion. Electric bikes are seen as a cost-effective way to achieve the goal. Located in traffic choked Silicon Valley the bikes will be able to use already-established bike lanes.

From Other EV newsletters and articles affecting EV's - Concluded

Speaking of Rebate Programs, have you heard about the natural gas fuel incentive program in Arizona? Legislators there initiated an incentive program that paid ½ the cost of any vehicle equipped to use natural gas in addition to petroleum fuel. Arizona customers jumped at the chance to acquire a new vehicle for half-price. The legislation didn't say they had to use the fuel – there are only 6 gas refueling stations in the state. One resident bought a \$ 48,000 Lincoln *Navigator* SUV for half-price. The program has been terminated after racking up \$ **600-million** in obligations. The State doesn't know where to get the money.

Alternative Transportation. Columbus Dispatch 9/10/00. Electric auto rentals are becoming a booming business in San Francisco. A few steps from the Fisherman's Wharf cable car turnaround is Zapworld's 13,000 square foot storefront showroom where customers can buy or rent their products. This includes the popular scooter. EV Rental Cars in the airport rents electric cars in cooperation with Budget. E-Bike in San Francisco has opened a store on Chestnut Street. Rental rates for the Zap scooter is \$ 20 for a one-charge tip or \$ 40 per day. An electric motorcycle daily rental is \$ 75. GEM vehicles cost \$ 35/hour or \$ 100/day. The Honda Insight rate is \$ 75. Each of these facilities give customers a chance to try out electric transportation products.

Electrifying Times Preview 2002 issue is now out. Since they have discontinued their complimentary exchange policy with the FVEAA it will not be reviewed and future FVEAA Newsletters are suspended.

Your next car? A new generation of clean cars is coming soon to a showroom near you. Sierra July-August, page 34. Gliding down country lanes or twisting around empty mountain roads may be the staple of auto TV commercials. However reality is rush hour lines of traffic creeping along choked expressways. The writer, Jim Montavalli wonders what happened to the travel freedom he once enjoyed.

He points out the harm to the environment from consuming fossil fuels. China, with their profitable export business, is now leading the world in car sales rate of growth as they abandon their bicycles for the private autos. If 400-million Chinese drivers hit the road in present vehicles over the next 50 years the plume of tailpipe exhaust will bathe the western Pacific in ozone according to one study.

More trouble ahead unless future car models become more efficient and less polluting. Foreign carmakers know there is money to be made from clean cars and Detroit doesn't want to eat their dust. California cars now have the cleanest IC engines because for about \$ 300 extra they are equipped with a variety of emission control devices that domestic carmakers fought when they were mandated. Emission control improvements are inadequate. On bad-air days the San Gabriel Mountains east of LA are still lost in an ominous brown haze. That same haze marks most metropolitan areas.

Electric vehicles obtaining their energy off the grid where a variety of energy sources can be used will be essential. The rest of the article describes electric cars and test programs familiar to FVEAA members.

ELECTION OF FVEAA OFFICERS FOR NEXT YEAR

FVEAA Bylaws provide for an annual election of officers and directors at each November meeting. All the present FVEAA officers and directors have agreed to serve another year:

President – Bill Shafer
Vice President & Director – Bob Munroe
Secretary – Dick Ness
Treasurer – Dale Corel
Directors – John Emde and Ed Meyer