FVEAA NEWSLETTER

April 1995

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NEXT MEETING - April 21at 7:30 PM

Will be in Room 1046 in the Student Resource Center at
the College of DuPage, southeast corner of 22nd Street & Lambert Road

DISCUSSION TOPICS - Earth Day Participation; Cooperative Construction Project Status

MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the FVEAA. The cost for a full year's dues is $15. Dues for new members joining in April will be $ 8.75. Members receive our monthly Newsletter which contains useful information about electric car components, construction, policies, and events.

FOX VALLEY ELECTRIC AUTO ASSOCIATION
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Oak Park, IL 60302-3512

FIRST CLASS

John Emde
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ADDRESS CORRECTION REQUESTED

PRESSEZ

The first Earth Day was in April of 1970. It is instructive to recall the event and evaluate what has taken place over the past twenty-five years.

The first Earth Day roused citizen's concerns about air pollution and deterioration of the environment. There have been many improvements in conditions since 1970. Environmental legislation has been adopted and enforced. To see our progress one can compare the miserable environmental situation in the former Soviet Union with conditions in the U. S. today.

There are still at least four problems that remain to be solved:

1. Waste disposal and recycling.
2. Consequences of chemical production and its use in agriculture.
3. Pollution caused by fossil fuel burning
4. Dependence on Mideast oil and its contribution to the U. S. trade deficit.

A letter/ handout explaining our search for a car for the CC project is included in this Newsletter. I may be used by members to contact individuals or auto dealers asking if they have a car to donate a car to the FVEAA for our Cooperative Construction Project (CCP). If a suitable car is found, the member should call me to arrange for a confirming inspection and acquisition.

At our April meeting, which is the day before Earth Day, I will cover the FVEAA Earth Day press release. This Newsletter contains a suggestion by Member Shafer for further financing of the CCP. We will also discuss the project and take action on his idea.

Ken

MINUTES OF MARCH MEETING

The meeting in Room 1046 at the College of DuPage was called to order by VP Shafer at 7:35. Two guests and 24 members attended.

Minutes of the February meeting were approved.

Members accepted Treasurer Corel's reported balances of $2130.44 (including $1700 of CCP funds) in the checking and $2186.70 in savings.

Member Aarvold acquired the FIAT for $100 and is proceeding with restoration and title transfer.

A Go-No Go decision on the CCP was scheduled for the meeting. Funding from participation units are inadequate to proceed. Project progress has been interrupted and delayed by an inquiry about using FVEAA skills for a commercial conversion project.

Member Munroe's recommendation for postponement of the CCP decision date to June 16th was approved. There was no objection to this extension from members present at the meeting who had acquired participation shares. He stated we intend to accomplish an EV conversion in 1995 and need member support. Checks for participation unit subscriptions should be sent to Treasurer Corel and will be appreciated.

Members approved a maximum expenditure of $ 500 from FVEAA regular funds for the acquisition of a vehicle to be converted. Member Ray Oviyach agreed to conduct an inspection of a conversion car and proceed with acquisition if it meets his approval.

Member Alcon has arranged for FVEAA to display 2-3 cars at the Downers Grove Heritage Fest. Participation was approved.

Members examined the nonfunctional dc-dc inverter from his Unique Mobility car. Two input diodes melted. Repair/replacement suggestions were offered.

Guest Duane Hanson, who came with Member Hendley Hall, reported on a 3-wheel ground-up EV by Rockford industrialist Atwood over 20 years ago. One vehicle is on display at the Clock Tower Inn in Rockford.

The meeting was adjourned at 10:41.

Dave Aarvold

RECENT EV ARTICLES

Electric cars being tested in Germany. Automotive Engineering, March 1995 Tech Briefs & Electrifying Times, Spring-Summer, 1995 Page 33. Electric cars are being tested on the German Island of Reugen. The location is a former resort for the Communist elite of East Germany. Sixty one cars are being tested at this remote location; 8 BMW, 10 Mercedes 190, 10 Mercedes vans, 10 VW Golfs, 10 VW vans, 10 Opel Astras, and 3 Neoplan buses.

Thirty one cars use the ZEBRA (Zero Emission Battery Research Activity) battery, a sodium-chloride, nickel chloride unit developed by Daimler-Benz and Anglo-American. Twenty three cars use nicads. The remaining seven cars use either a sodium sulfur or sealed lead gel units. Each ZEBRA battery weighs 440 pounds and has 17 Kwh of stored energy. A Mercedes 190 using the battery has been driven 46,500 miles. Two ZEBRA batteries moved a 190 to a top top speed of 75 mph. Range achieved during the test is 50-60 miles on a single charge. ZEBRA powered cars have logged over 300,000 miles. Trials indicate the ZEBRA battery should be good for 100,000 miles of driving and 1500 cycles. Commercial production of ZEBRA batteries is planned for 1998.

Honda cars being tested in California. Automotive Engineering, March 1995, Page 60. Southern California Edison is tested three Honda CUV-4 electric cars in their territory and Pacific Gas & Electric is testing another two in San Francisco. The CUV stands for Clean Urban Vehicle. The car uses the upper body from the Civic hatchback mounted on an EV-specific underfloor structure. Twenty four lead/acid batteries with a total weight of 480 kg (1056 lbs) are placed below floorboard level between the wheels. The motor is a Honda-designed brushless dc motor having a power rating of 49 Kw (64 horsepower) @ 5750 rpm. The liquid-cooled motor uses rare earth magnets on the rotor and achieves a 96% efficiency. The controller uses high power IGBT's controlled by a 3-phase signal. Recharging power is 1.2 Kw with a 120-volt supply or 5.4 Kw with 240 volts. The entire car weighs 1689 kg (3646 lbs), accelerates 0-60 in 19.1 seconds, a maximum speed of 130 km/h (80 mph), and an urban driving range of 106 km (62 miles). Additional information on the program can be obtained from Art Gamer at Honda (310) 783-3163.

Electric vehicle batteries tested and fuel cells for buses. Automotive Engineering, March 1995, Page 65. Sealed Bipolar Lead/Acid (SBLA) batteries are being developed by two companies. Arias Research has demonstrated 720 W/kg (327 W/lb) peak-power capability and a 39Wh/kg (17 Wh/lb) energy storage capability for its SBLA battery. The Pinnacle Research SBLA battery uses a ceramic-oxide--coated metal substrate. It has an energy storage capability of 60 Wh/kg (27 Wh/lb). Development of phosphoric acid fuel cells for transit bus use is being supported by DOE. Ballard Power Systems in British-Columbia has built a demonstration bus using a 120 Kw fuel cell.

U. S. Electrical halts production. Chicago Tribune, March 26, Transportation Section Page 10. This company that converts cars and trucks for electric drive has halted production and laid off 30% of its workers. Editor's note - Their stock quote is between 62-72 cents/share.

RECENT EV ARTICLES - CONTINUED

Energy saving cars are futuristic, fuel efficient, and ultralight. Christian Science Monitor January 30, 1995, Page 13. Three cars developed by a Big 3 collaborative effort were exhibited in the White House driveway. The GM version weighs 1400 lbs and uses a carbon-fiber material. It goes 0-60 in 7.8 seconds and has a top speed of 135 mph. The price for the body material was $ 13,000. The sale price if built today would be over $ 100,000. About $300-million of R&D governmental support is being channeled through the Big 3 consortium. Small EV companies point out they do not participate in this funding but have developed electric cars for peanuts.

Electric Family Car is just around the Corner. London Business Wire Press Release February 10, 1995. There was a gathering of experts in lead/acid batteries in London during February. They are considering a $20-million, four-year program to develop advanced lead/acid batteries. They point out that an advanced lead-acid battery can have 50% of its capacity recharged in 5 minutes and 80% in 15 minutes. A complete report on the status of research projects can be obtained by calling Jerry W Cooper at Asarco Inc at (212) 510-1810.

Only a few electric cars are on the road today. Electric Vehicle Association of the Americas press release dated March 27, 1995. There are between 2078 and 2369 electric cars capable of highway driving on the road today according to a study conducted by EVAA. Electric cars from Chrysler, Ford, GM, and Honda account for 190 electric cars, converted cars assembled by conversion companies are estimated at 906, and cars built by individuals may number 695. Full data is published in a 22-page document available for $45 by calling (415) 249-2690.

FROM OTHER EV NEWSLETTERS

EVAOSC (The Southern California Group) March issue notes that Argus Publishers plans the second issue of its ElectriCar magazine in June. Solar cell flight applications were a subject coverted ion their February meeting. Three pages were devoted to coverage of the Phoenix 500 event in March. They are considering affiliation with the Electric Auto Association, the original parent electric car group that offers reasonable cost event insurance and national advertising.

EEVC (The Eastern Electric Vehicle Club) reported the EV designed by Member Ehrenberg to be powered by a Harley Davidson engine converted to burn hydrogen and having a a flywheel storage system has been shipped to Arizona for further work. The car was originally built by students at Cinnaminson High School where support had waned. EEVC members have been invited to the Pocono Raceway on July 30 to again display and run electric cars.

FROM OTHER EV NEWSLETTERS - Continued

Electric Grand Prix Corp (Rochester NY) latest issue had 16 pages and has a lot of useful information. If your want your own copy, the annual contribution is just $8 which can be mailed to 6 Gateway Circle, Rochester NY 14624-4415. Phone (716) 889-9516. Editor Paul Heany puts in a lot of effort on this 4 times a year document. The 1995 Buyer's Guide to Electric Vehicles, published by the Electric Auto Association, is available for $ 4.95 from the EAA at 2710 St Giles Lane, Mountain View, CA 94040. The issue reports than Onan Corporation sells a line of propane fueled engine-generators in 3.6-6.5 Kw ratings. An article about SATCON in Cambridge MA reports they have tested a 145-pound motor, one foot long, and developing 500 horsepower.

Great Lakes Electrathon Association, managed by Paul Zellar, reports the 1995 Michigan High School Electrathon Competition will take place on June 10 at the Michigan Ideal Speedway near Springport, south of Lansing. The Electrathon is a competition involving elelctric cars equipped with a maximum, of 64 pounds of batteries that race for one hour, with the winning car determined by the number of laps completed. Thirty five Michigan high schools will participate. Race time is 9:15 AM For more info, Paul Zellar at (616) 887-2744, FAX (616) 887-7755.

SEVA (The Sacramento CA Group) A GM IMPACT was brought to the meeting for examination. Two SEVA members who attended the APS 500 event reported their impressions and results.SEVA has decided to become affiliated with the EAA that requires 80% of an affiliated chapter to become EAA members @ $25 annually.

VEVA (The Vancouver Group) March issue provided APS highlights that included many details of components used in competing cars. They are proceeding with a 1995 Electrathon event. They report that the Internet has info on electric crs that can be contacted by sending SUBSCRIBE (first name) (last name) to LISTSERV@ SJSUVM1.SJSU.EDU. For info about the ZAPI Controller you can contact Gary Flo at MendoMotive (707) 964-1331 (work) or (707) 937-3136 (home). FAX (707) 937-0338. The issue has a photo of ETHOS 3, an EV development by Unique Mobility and Pininfarina. It is a 4-seater with a 100-mile rage @ 50 mph. Zero-60 time is 11.4 seconds.

World Electric Transportation (Clarence Ellers) March issue reports that Ford will supply gliders to U.S. Electricar for conversion that should reduce the final price for their cars by about $5k. The issue also contains an interesting graph from NSEA of electric vehicle range and efficiency in the 6 years of running the American Tour de Sol. He also reports that GM is prepared to build up to 7500 IMPACTS in the next 18 months.

FROM OTHER EV NEWSLETTERS & PUBLICATIONS - CONTINUED

Electrifying Times, Spring-Summer 1995 Edition. This magazine published three times a year has a number of informative articles in this edition. Many of the articles provide specific component and performance information for vehicles featured. Included in this issue are the 120 miles in sixty minutes set by an Italian race car, a descripton of the Ford "EVENT", the Isuzu "ELF" van, Kaman's electric bus utilizing a wheel motor, A "Kawashocki" electric motorcycle, articles about EV Pioneer Bob Aronson's Electric Auto Corp battery ventures in China, a new charger by Teledyne, a Peugeot leasing system for batteries, the Israeli zinc-air battery, a new MOSFET controller by Dax Industries, and other articles of interest. The cost to subscribe for one year is $10 sent to Electrifying Times, 63600 Deschutes Market Road, Bend OR 97701.

EVents

Earth Day, April 22. Many local events, some that feature electric car displays.

EV Grand Prix, May 5-6. Richmond International Speedway. Call Don Kramer (602) 978-1373.

1995 American Tour de Sol, May 20-29. Waterbury CT to Portland ME. Twenty three vehicles have been entered. Call NESEA at (413) 774-6051.

EV Road Race supervised by SCCA, May 27. Grattan Track near Grand Rapids MI. Call Paul Zellar at (616) 887-2744.

Michigan High School Electrathon Competition, June 10. At Michigan Ideal Speedway, south of Lansing MI. Thirty five Michigan High Schools will enter vehicles for this event. Call Paul Zellar at (616) 887-2744, FAX (616) 887-7755. Editor's note - Paul Zellar must be busy !

Alternative Fuels Conference & Trade Show, June 28-30. Milwaukee Exposition and Convention Center. Display of electric cars included. Call 1-800-447-5088 for information.

Cleveland Electric Formula Classic, June 21-22. Burke Lakefront Airport. Call Kevon Markell at (216) 447-3552 for information.

Electricore Formula Lightning Race, August 16-18. Indianapolis. Road racing on the 16th and track racing the last two days at the Indy Motor Speedway. Awards dinner on Friday evening. For information call Ernie Holden at (602) 953-7715.

S/EV 95 (Solar & Electric Vehicle 95 Trade Show, Symposium, and Workshops, November 13-15. Rhode Island Convention Center in Providence. Sponsored by NESEA (Northeast Sustainable Energy Association). Phone (413) 774-6051 or FAX (413) 774-6053 for info.

MEMBERSHIP REWARD PROPOSAL

FVEAA members receive our monthly newsletter that summarizes electric car articles and developments. Members able to attend our meetings benefit from discussions of issues and technical problem solving. These are the basic benefits that FVEAA members receive.

Late last year, the FVEAA decided to initiate a Cooperative Construction Project suggested by Member Bob Munroe. This is a venture that will give members who have not yet recycled and converted a car a chance to participate in the Project, with assistance and guidance provided by members who have individually gone through the process. The conversion should not be a major undertaking under these circumstances. Members who have used their electric cars have a realistic view of the driving missions these can perform. They also have enjoyed the economic benefits of electric car use. Completion will add another member who can enjoy these benefits.

Up-front financing is the major hurdle the FVEAA faces to start construction. Over $2000 has been received or pledged for the project to date. With a realistic budget of $8000, additional up-front money is needed to start the Project. Subscription of additional participation shares could provide funds but is likely to take some time. Location of a financial "angel" is not likely. The Project plan could be amended if an individual member wishes to finance the project and receive the converted car. The plan now provides for return of participation share contributions by sale of the completed electric car for an amount at least equal to the project cost.

I propose an alternative financing method. It would award the converted car to to an FVEAA member by a random drawing from the membership list. The drawing would be held after the car is completed. The alternate plan requires that we revise our prorated membership annual contribution and adopt a $ 15 new member fee for 1995. It also requires that our membership be expanded by at least one thousand. Of the $ 15,000 provided by the new memberships, about half will be needed to provide the monthly newsletter and pay for program promotion expenses. The other half would be used to finance the project and redeem participation shares.

Each member will have about a 1:1200 chance to get an electric car for $15. This is not a lottery where chances are sold to win something. Instead it should provide an incentive to join the FVEAA that will expand our membership base, or an additional reward for present members.

It will also require the FVEAA to advertise the plan to reach persons who have never heard of us. This could include ads in newspapers, magazines, and other EV newsletters, and radio announcements. Promotional funding for would come from new memberships received. A plan and budget for this must be developed if the idea is approved.

President Woods has agreed to place discussion of this proposal on the April 21 meeting agenda.

Bill Shafer

FVEAA PRESS RELEASE FOR APRIL 22, 1996
THE TWENTY-FIFTY ANNIVERSARY OF EARTH DAY

The first Earth Day was in April of 1970. It is instructive to recall the conditions that inaugurated the event and evaluate what has taken place over the past twenty-five years.

The initial Earth Day roused citizens' concerns about air pollution and deterioration of the environment. There has been much improvement in conditions since 1970. Environmental legislation has been adopted and enforced. One can refer to the August, 1994 issue of National Geographic and be reminded of the consequences of environmental neglect in the former Soviet Union. These have not taken place in the US, partly because of Earth Day follow-up activities.

There are four areas of concern about unsolved problems that need to be dealt with in the future:

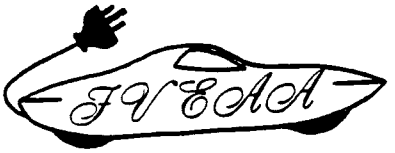
1. Waste disposal and recycling.
2. Consequences of chemical production and its use in agriculture.
3. Pollution caused by burning of fossil fuels, particularly for car use.
4. Dependence on Mideast oil and its contribution to the US trade deficit.

The FVEAA (organized in 1974 because of the first oil embargo that disrupted gasoline supplies) has in a modest way addressed concerns 3 & 4. We have accumulated experience with recycling and converting conventional cars for electric power. We substitute our electric cars,within their limited range capability, for gasoline car use.

Energy for electric cars can be furnished by photovoltaic, wind, or utility power plant sources. We are fortunate in the Chicago area that ComEd electricity for our cars in 1994 was over 83% derived from nuclear power sources. Nuclear energy is environmentally responsible. It has no combustion products or gaseous emissions that may contribute to global warming. Persons with extreme environmental concerns oppose nuclear power. A realistic choice is to either use this energy source or continue automotive pollution fueled by petroleum sources.

We have found that substituting electric cars for short trips can also save the owner money. Electric car drivetrains are simple, efficient and can last over fifteen years. Depreciation and financing charges associated with buying or leasing a new conventional car every 3-7 years is avoided. A typical annual cost for electric cars is under $ 500. This includes electricity, insurance, maintenance and an allowance for battery replacement every four years.

We reaffirm the FVEAA Declaration of Energy Independence issued five years ago on the twentieth anniversary of Earth Day. A copy is attached.



FOX VALLEY ELECTRIC AUTO ASSOCIATION, INC.

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Phone (708) 420-1118 FAX (708) 420-1517

The purpose of the FVEAA is to assist members who are interested in building their own electric cars, and to inform the public about electric vehicle (EV) issues and their realistic capabilities. We are chartered as an Illinois Not-For-Profit Corporation, organized in 1975, following the first oil embargo gasoline crisis.

In 1995 we initiated a Cooperative Construction Project (CCP) as educational procedure that will instruct new members in the conversion process under the guidance of experienced members that have completed an individual project. Some of our members own and use an electric car they have recycled from a conventional car and converted to electric power. We are searching for a car that can be recycled and converted by our group.

The car we are seeking for conversion is one that has a small value to an individual or auto dealer. It should have the following characteristics:

1. Curb weight of 2500-3000 pounds.
2. Model year generally later than 1984.
3. Front wheel drive with standard transmission.
4. Replacement parts commercially available for items such as body, suspension, and brake components.
5. The car may have a blown engine but it should have a body and suspension in reasonably good condition. (We don't want to spend much time dealing with rust.)
6. Representative cars that meet our requirements are:
    A. Ford Escort
    B. VW Golf, Rabbit, or Jetta
    C. Geo Storm
    D. Chevy S-10 pickup or Ford Ranger
    E Saturn

Please call me if you have or know of a car that might meet our requirements.

Kenneth R. Woods

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