FVEAA NEWSLETTER
October 1984

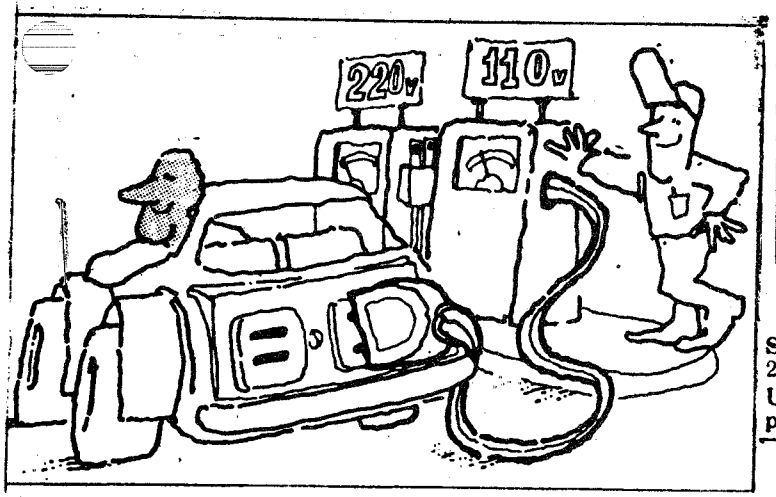
MEETING NOTICE

The Fox Valley Electric Auto Association will meet on the third Friday of October at 7:30 p.m. in the Mid-America Federal Savings Building located at 250 E. Roosevelt Rd. in Wheaton, IL. At this meeting we will have the last in a series of general discussions concerning the construction of electric cars. The discussion will cover the actual installation of component parts and a brief review of the latest developments in components. The moderator will be Bill Schaffer. Also we will have some Show-and-Tell items which will be of interest and a -

- DOOR PRIZE -

FOR SALE 10 Trojan batteries 105- less than 800 miles on them. $275.00
2 Electric controllers - 48 volts - by Dave Lambert $495.
6 Horsepower G E Series-wound motor - 48 volts - 4400 RPM $295.
Lestermatic Battery Charger - 48V plus 12V Accessory Battery $135.
Electric car chassis and body - fiber glass - needs differential - can use Citicar rear-end - $175.
If interested, call Donald Kubick - 249 Arlington Heights Rd. Elk Grove Village, IL 60007 Phone 437-0453

CHICAGO SUN-TIMES, Monday, July 23, 1984



"As many as 9 million electric cars may be operating by the year 2000. They can only go 50 or 60 miles before their batteries need recharging. at this time"

ELECTRIC CAR SERVICE STATION: There are only about 2,000 electric vehicles in use in the United States. But the Energy Department has estimated that as many as 9 million may be operating by the year 2000. Electric cars are inexpensive to operate—as little as 6 cents a mile—but they can only go 50 or 60 miles before their batteries need recharging. That's where the service station comes in.

FVEAA

fox valley electric auto association inc.
624 Pershing St. Wheaton, Il. 60187

This is one of a continuing series of notes to the editor describing my on-going efforts to make my electric car a suitable vehicle for use in my daily driving. This past month was devoted to installing a heater. The original heater and controls are all intact and all that is necessary to have a heater is to provide a source of hot water.

The water will be heated by a propane heater, like those commonly used to pre-heat truck engines for easier starting in winter. The heater is manufactured by Phillips Temro, Inc., 9700 West 47th Street, Eden Prairie, Minn. 55344, (612)937-9500 and is available through Warsharsky in Chicago although it is not in all of their catalogs. The heater is rated at 10,000 B.T.U. and can be controlled from the dash of a car with the use of remote controls which are furnished.

Since it did not seem desirable to run the propane lines to the interior of the car, a remotely controlled solenoid gas valve is being used. It is available from C&H Sales Co. 2176 East Colorado Boulevard, Pasadena, California 91107, stock #SV7910, for $5.95 (minimum order $25.00). Also a red button must be held in during ignition, like on a gas furnace. This button is also controlled remotely with a solenoid or a choke kit can be adapted to do the job.

A small expansion tank for the hot water (with anti-freeze) is provided by using a 1 quart plastic refrigerator storage box fitted with inlet and outlet hose adapters. A small 12v. circulating pump completes the installation.

As of now the system is about 2/3 done, and any problems I encounter will be included in next month's article. Stay tuned.

For those of you who keep abreast of new developments, John Stockberger and I have obtained prices on power Fet's for use in controllers. The prices ranged from $48 to $98 for devices from 65 to 200 amps. The price is expected to decline in about six months to a year, to a more realistic level. So considering the improved operating characteristics, it may be wise to at least consider their use in future controllers.

On still another subject, I obtained incandescent readout devices at a Ham Fest for $1.00 each, so can now proceed to contruct digital readout meters to replace the analog devices in my car.

Dana Mock

fox valley electric auto association inc.
624 Pershing St. Wheaton, Il.
60187

Proposed by-laws for ratification in July, 1982

ARTICLE I: OFFICERS AND BOARD OF DIRECTORS

A. OFFICERS There shall be five officers of the Corporation- President, Vice President, Secretary, Treasurer, and Property Custodian. Their duties shall be those normally performed by those officers and as outlined in these By-Laws.

B. BOARD OF DIRECTORS The five officers of the Corporation and one additional elected Director shall comprise the Board of Directors. The President of the Corporation shall also be the Chairman of the Board. The Board of Directors shall meet as necessary to transact any and all business that comes before it as set forth by these By-Laws and amendments thereto.

C. ELECTION PROCESS The four officers and additional board member shall be duly elected by a majority vote of the members present at the annual meeting and shall serve a term of one year from the date of election or until their successors are elected.

D. VACANCIES Vacancies in elective offices shall be filled by a majority vote of the Board of Directors for the interim between the time the action is taken and the next annual meeting, at which time the offices shall be filled as specified in Paragraph C, above.

E. REMOVAL FROM OFFICE A proposal for removal from office of any officer of the Corporation shall be discussed at the meeting such proposal is made, but action can not take place until the next regular meeting. A two-thirds affirmative vote of the membership present shall be required to remove an officer from office.

ARTICLE II: COMMITTEES

A. STANDING COMMITTEES This organization shall have the following standing committees:

1. LIBRARY COMMITTEE This committee shall be composed of three appointed members, one of whom shall be appointed as chairman. It shall be the duty of this committee to keep a file of all articles and literature relative to electric vehicle construction and maintain an index of material available to the membership.

2. PUBLIC RELATIONS COMMITTEE This committee shall be composed of the Secretary and two appointed members. The Secretary shall serve as chairman. The committee shall publicize the meetings, programs, public exhibits and other work of the Corporation to help keep the members and the public aware of Corporation activities. One appointed member of this committee shall serve as Association Historian.

B. SPECIAL COMMITTEES The President shall appoint special committees and their chairmen as needs arise.

C. COMMITTEE VACANCIES Vacancies on committees (except for the Chairman of the Public Relations Committee) shall be filled immediately by presidential appointment.

ARTICLE III: MEETINGS

A. ANNUAL MEETING The annual meeting shall be held on the third Friday of September.

B. REGULAR MEETINGS Regular meetings shall be held on the third Friday of each month unless changed by the Board of Directors.

C. SPECIAL MEETINGS Special meetings may be called by the Board of Directors as necessary. In addition, any five members may request a special meeting which the President shall call as soon thereafter as possible.

D. NOTIFICATION All current members shall be notified by mail of each Annual, Regular and Special Meeting by the Secretary at least one week prior to the meeting.

ARTICLE IV: MEETING PROCEDURE AND QUORUM

A. PROCEDURE Standard parliamentary procedure shall be the normal authority for action by the Association except in those cases covered specifically by these By-Laws.

B. QUORUM

1. ANNUAL MEETING AND REGULAR MEETINGS All matters shall be decided by a majority of those members present and voting except for any matter for which a different requirement is specifically set forth in these articles.

2. SPECIAL MEETING A quorum for a special meeting shall be fifty percent of the full membership of the Corporation.

ARTICLE V: MEMBERSHIP

A. DUES Dues shall be $15.00 per year payable at the regular November meeting. New members joining after November shall pay $1.25 for each month remaining before the following November.

B. MEMBERSHIP-IN-GOOD-STANDING A member shall be in good standing if his dues have been paid for the current year. Members in good standing shall have voting rights at the annual meeting and at all other meetings.

C. FORFEITURE OF MEMBERSHIP A member may be dropped from membership if:

1. A written resignation is submitted.

2. He fails to abide by the Articles of Incorporation, By-Laws (including amendments thereto) or the policies of the Corporation. Such a case is to be judged by the Board of Directors and is subject to a majority vote of the membership at the next regular meeting if the member in question so requests.

3. Annual dues are not current. The Board of Directors may defer dropping a member for non-payment of dues if it so elects.

ARTICLE VI: CORPORATION PROPERTY AND FUNDS

A. OFFICIAL BOOKS The official books of the Corporation, including the official copy of the Articles of Incorporation and By-Laws as amended, minutes and other similar records, shall be maintained by the Secretary.

B. FUNDS All funds in excess of $ 50.00 shall be kept by the Treasurer in a bank account. Signatures authorizing the withdrawal of funds shall be those of President or Vice-President and the Treasurer.

C. OTHER PROPERTY All other property shall be under the control and responsibility of the Property Custodian. The Property Custodian shall keep control and cost data on all Corporation owned equipment in a permanently bound book provided by the Corporation for that purpose. Such equipment shall be loaned to and used by Corporation members only, and only for stated periods of time. A member borrowing equipment shall sign for it in the record book. Members shall be required to return equipment to the Property Custodian at the time specified, and shall not lend it to other members for non-members. It shall be be the responsibility of the Property Custodian to keep the equipment in good working condition, requesting any assistance needed from Corporation members. Where amounts greater than $10.00 are required to repair equipment, authorization must be secured from the Board of Directors.

ARTICLE VII: AMENDMENTS TO THE BY-LAWS

Amendments to these By-Laws may be proposed and discussed at any regular meeting. Proposed amendments may not be voted upon until the next regular meeting. Prior to the next regular meeting, the secretary shall notify the entire membership of the proposed amendment along with the notification of that meeting.

Adoption of an amendment shall require a two-thirds affirmative vote of the entire membership. Members may vote on an amendment to the By-Laws by proxy.

ARTICLE VIII: DISSOLUTION

In the event of dissolution of the Corporation, all donated property and funds shall be returned to the donators. All assets shall be sold and the resulting funds along with any other funds the Corporation has shall be used to pay any liabilities the Corporation may have accrued. Any residue shall be divided among the members-in-good-standing.

Rev Apr 1984

FVEAA

fox valley electric auto association inc.

MEMBERSHIP

A membership in the Fox Valley Electric Auto Association (FVEAA) is open to everyone. Currently there is only one grade of membership regardless of the members degree of participation in association activities. Membership in the FVEAA is contingent upon payment of the annual membership fee. The membership fee can only be waived by special vote of the Board of Directors. Each member in the FVEAA receives a copy of the FVEAA Newsletter each month. They are also entitled to attend and vote at all association meetings.

All memberships in the FVEAA run from November 1 to October 31 of the following year. The dues are $15.00 per year payable at the November meeting. New members joining after November shall pay $1.25 for each month remaining before the following November.

The following form may be used to apply for membership or to renew one.

Date _____

APPLICATION FOR MEMBERSHIP OR RENEWAL

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

☐ Just interested in Electric Vehicles
☐ I have an Electric Car
☐ I wish to build an Electric Car

Amount enclosed $ _____ for _____ months.

Mail to: Mr. Jack T. Cahill, FVEAA Tres.
1 S 736 Vista Ave.
Lombard, Il. 60148

The Columbus Dispatch
OHIO'S GREATEST HOME NEWSPAPER
Sunday, September 12, 1982

Lab aglow over battery

By Don Baird
Dispatch Staff Reporter

Battelle Columbus Laboratories researchers are cautious about how they describe their new battery because it sounds . . . well, perfect.

Battelle's only official claim is that senior research scientist Glenn R. Schaer has invented "a rechargeable battery that will have a long operating life and will need only infrequent replacement."

All of which means that, in theory, Battelle may have produced the perfect battery.

ERIC W. BROOMAN, head of the electrochemical technology group at 505 King Ave., always stresses "in theory" when he talks about the battery. But when pressed, Brooman was forced to admit that, in theory, Battelle's battery can be recharged again and again and again and again and again until . . . well, you get the idea.

The battery was patented in 1980, but Battelle so far has let only a few government and industrial leaders share its secret.

However, Battelle technician Rodney F. Moody intends to tell the world about the development on Monday at the national meeting of the American Chemical Society in Kansas City, Mo.

Automobiles operate with an acid-based battery. The starter demands only about 0.5 percent of the total energy a battery contains. That is why some auto battery manufacturers can guarantee their products for up to five years.

BATTELLE'S NEW battery could last 10 years or longer — well beyond the life expectancy of most cars. Better yet, a bank of Battelle's batteries eventually could serve as the sole power source for an electric car because the battery can yield 100 percent of all the energy it contains and still be recharged.

It does not look that impressive in the laboratory. A rectangular glass jar contains electrodes and a dark blue liquid, which Moody and Brooman described as a copper and lead fluoborate solution.

The secret of the battery's longevity is that it avoids the buildup of lead sulfate, which eventually ruins conventional batteries after a series of rechargings.

The Battelle battery also makes efficient use of all the lead it contains. Conventional batteries use only about a fourth of their lead efficiently.

HOWEVER, Moody and Brooman emphasized that the new battery cannot literally last a lifetime because something is bound to go wrong with anything man-made.

They are seeking a private or government investor who is willing to spend $100,000 to $200,000 and then wait perhaps two more years to find out whether the project has flaws.

When Battelle queried potential investors a couple of years ago, Brooman said, all were reluctant. The federal government, for one, apparently was sold on the development of lead-acid batteries.

Dispatch photo by Amy Sancetta

Rodney F. Moody monitors 'perfect' battery

Brooman said the new battery may not be on the market until 1990.

Besides powering cars, the battery could allow utilities to store excess electricity in anticipation of peak demand.

Brooman said the the financial rewards for the firm or agency which backs the project could amount to "millions of dollars per year."

"The possibility of profits are probably endless," said Moody. "It just depends on your imagination."

New Group To Promote EVs

Seventeen major U.S. electric utility organizations representing 29 operating companies have announced the formation of the Electric Vehicle Development Corporation. The new organization's purpose will be to help achieve quantity production of electric cars and trucks as early as possible. It will complement the R&D activities of others, such as the U.S. Department of Energy, the Electric Power Research Institute, and individual manufacturers by planning and organizing large scale joint vehicle purchases and demonstration projects.

The EVDC founders have launched a membership campaign to capture broad utility representation. At the same time, business and industrial organizations are being invited to join as associate members. The corporation will start its formal activities with the first Board of Directors meeting during November 1983. The opening of the corporate headquarters is scheduled to occur in the first quarter of 1984.

The present nucleus of the EVDC includes: American Electric Power Service Company, Arizona Public Service Company, Carolina Power and Light Company, Commonwealth Edison Company, Consolidated Edison, Detroit Edison, Florida Power Company, Gulf States Utilities Company, Long Island Lighting Company, Ohio Edison Company, Public Service of Indiana, Southern Company Services, Tennessee Valley Authority, The Cleveland Electric Illuminating Company, The Toledo Edison Company, Union Electric Company, and Wisconsin Electric Power Company.

The decision to form the EVDC was based on the following conclusions:

- Electric vehicles will constitute a desirable and significant new off-peak source of load and revenues for most utilities;
- Electric vehicles are an appropriate means of reducing the nation's fossil fuel dependency and providing options to the transportation consumer;
- Electric vehicle technology has made progress and is approaching cost-competitiveness for some commercial uses;
- Utility industry leadership is needed to influence the efforts of research organizations and manufacturers as well as to identify and initially develop the market; and
- Risk reduction is needed by both manufacturers and buyers in order for early commercialization to happen.

EVDC activities now underway include the completion of a national electric vehicle introduction strategy and business plan, specifications for an initial fleet electric vehicle, and a detailed market analysis. The founders hope to initiate electric vehicle introduction within the next five years.

"Since its beginning in Fall 1982 the founders have been working closely with the Electric Power Research Institute, which has an active R&D program in electric transportation. Floyd Culler, president of EPRI, endorsed the founders' efforts in a letter to its chairman, John McLean of Wisconsin Electric Power Company. "Formation of a national group to focus and consolidate electric vehicle interest and action certainly seems necessary if the goal of commercializing electric vehicles is to be achieved in this country," said Culler. "We at EPRI are enthusiastic about the industry initiative represented by the EVDC, and we hope that it can become a broad industry effort."

"Speaking for the founders, McLean stressed the appropriateness of utility leadership. "There is a great need for an organization to bring together the interests of the different stakeholders in electric vehicle commercialization," he said, "including utilities as well as vehicle and component suppliers, government, and the prospective users themselves. It is clearly in the interest of the electric utility industry to lead in building this very desirable utility load as quickly as possible. This will aid both the utility ratepayer and investor by making better use of our huge investment in generating capacity during off-peak hours."

Further emphasis was added by Thomas Zeterberg, the founding group's communications coordinator and representative from the Long Island Lighting Company. "The time for action is right now," said Zeterberg, "while the technology is on the threshold of feasibility for many uses and prospective manufacturers are looking for encouragement from the marketplace. With strong utility support we are convinced that the EVDC can provide that encouragement and the direction for advancing the introduction of electric vehicles. If we can do that, everyone from the manufacturers to the general public will benefit." □

UK To Test New Hybrid Buses And Vans

In England, the Greater Manchester Transport Executive (GMTE) plans to put a fleet of 11 hybrid diesel-electric buses on the road by next spring.

The 35-passenger buses, plus ten hybrid vans, are being built and tested as part of a $600,000 project funded equally by the GMTE, the Commission of the European Communities, and a small British company, Hybrid Vehicles, which will coordinate the program.

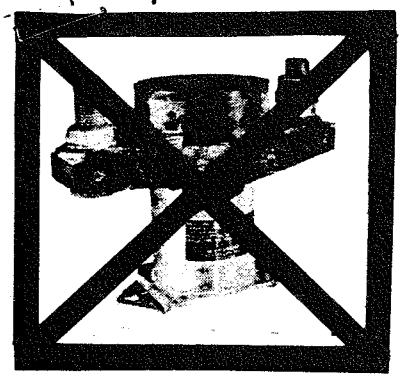
The vehicles are a development of earlier work by Dragonfly Research which two years ago developed a hybrid diesel-electric bus based on a standard Seddon chassis. This bus has now completed about 600km of trials but has yet to be used to carry passengers. A passenger-carrying license is now being sought and commercial operations are expected to start before the end of the year.

Ten additional buses, each powered by four 10kW disc motors coupled to a 30kW Hatz diesel engine, will be built using a purpose-built chassis designed and manufactured by Shelvoke and Drewry.

The vans, based on an Escort chassis, will use a single 10kW motor linked to a Briggs & Stratton 13kW engine. These will be placed in service with local authorities.

Hybrid Vehicles expects the hybrid buses to use about half as much fuel as conventional buses. Although the trial vehicles will cost more than comparable internal combustion engined buses, the company claims that the additional costs will be recouped within two years of commercial operation.

The performance of the hybrid buses and vans is to be monitored and evaluated by the Electric Vehicle Development Group with the support of one of its members, the University College of Swansea. □



RUSSCO ELECTRO-MECHANICAL ENGINEERING

SAFETY

ELECTRIC VEHICLE SAFETY
BY RUSS KAUFMAN

Electric vehicle propulsion system safety involves not only the Controller, but the complete Electric Vehicle system. The safety items in the system include a commercial Semi-Conductor Fuse, commercial Power Contactor, and commercial Circuit Breaker. If a fault condition should occur, the safety Fuse will automatically open the propulsion system in 1/1000 second. The safety Power Contactor will interrupt a 1500 Amp. D.C. current flowing in a 96 Volt system. The safety Circuit Breaker will automatically interrupt a fault current up to 10,000 Amps and provide complete isolation of the propulsion batteries in the event of system malfunction. The circuit Breaker also provides a manual disconnection of the propulsion batteries for routine system servicing.

The safety Fuse, safety Contactor, and safety Circuit Breaker are as important as safe vehicle brakes, steering, and tires. Absolutely do not delete or substitute the proper Fuse, Contactor, or Circuit Breaker in the system. You have spent a lot of money converting your Eleoctric Vehicle. Do not sacrifice the safety of yourself and others by trying to save a few dollars on improper safeties. In the event of an accident involving an Electric Vehicle without the proper System Safeties, the Electric Vehicle driver can be proved negligent.

WHAT SAFETIES NOT TO USE

Wire type fuses will not provide reliable quick interruption of fault currents. The price of a proper commercial fuse is under $15. Don't leave your garage without it.

Aircraft 30 V.,200 or 400 Amp contactors will not clear 72 V. or higher voltage systems due to the close spacing of the contacts. Don't use them.

Automotive starter solenoids are even worse. They are rated at 36 V. maximum by the manufacturer at 100 Amps maximum. These units will not even clear a 42 volt system. This solenoid belongs in the trash.

A homemade knife switch or disconnect plug does not have the anti-arc features of a commercial circuit breaker and will probably stick shut when you need it most. Get rid of it. If in doubt about the proper safeties to use, ask yourself, "Would a reliable commercial company producing electric vehicles install this particular safety fuse, contactor, or disconnect?" If the answer is "NO", then don't use it.

Russ Kaufman