Fox Valley Electric Auto Association
1522 Clinton Place
River Forest, IL 60305-1208

Address Correction Requested

NEXT MEETING: Friday, January 23at 7:30 PM in Room K-161 at The College of Dupage SW Corner of 22nd Street & Lambert Road in Glen Ellen.

DISCUSSION TOPICS - 1. Report by Fred Kitch on automatic inductive transformer design. 2. Report by Member Paul Polster on Geo Metro engine for hybrids.

MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the FVEAA. The cost for a full year's dues is $20 that will entitle the member to receive our monthly Newsletter that contains useful information about electric car components, construction, policies and events.

To obtain information about the FVEAA, you may contact either President Woods or Vice President Shafer:

President - Ken Woods
1264 Harvest Court
Naperville, IL 60564-8956
(630) 420-1118
E-mail Casa Zeus2@aol.com

Vice President & Editor - Bill Shafer
1522 Clinton Place
River Forest, IL 60305-1208
(708) 771-5202
E-mail electric-bill@ compuserve.com

JANUARY, 1998 PRESSEZ

1. Member Fred Kitch will present data on transformer technology used for magnetic coupling as a followup on our last meeting in which we discussed automatic charging in your garage.

2. Member Paul Polster will report on his findings about a used Geo metro engine which could be coupled to a generator in a series hybrid.

3. Deceased member John Newton is vindicated. A dozen years ago he proposed a diesel-electric hybrid and searched through catalogues to determine manufacturers who produce diesel engines of 40 HP or less. The Big Three stunned by the advancements of the Japanese automakers are reacting with hybrid programs of their own, again playing catch-up.
Ken

DECEMBER 9 MEETING MINUTES

The meeting at the College of DuPage was called to order at 7:36 PM by President Woods. Thirteen members and two guests attended.

The minutes were approved. Treasurer Corel was finishing his Christmas shopping so there was no treasurer's report.

Member Shafer read a letter he sent to Chicago Sun-Time auto writer Jim Mateja about internal combustion engine life and the reply printed a week later. Mateja observed that, because of differences in which cars are used and maintained, running hours would be meaningless.

Member Meyer wants to investigate an automatic inductive coupling scheme for automatic recharging in the home garage. A magnetic coupling has a maximum efficiency of about 68% compared to the usual conductive connection. The inductive test track was reported to have an efficiency of only 16%. It was observed that a 20 kHz supply system would allow reducing the size of iron components. A split-core transformer arrangement was suggested. The supply core could be imbedded in the garage floor and a load core on a platform in the car that could be automatically lowered to the floor to reduce the magnetic air-gap.

There was a discussion of a possible future project for the Club to build a hybrid conversion. Member Meyer thought he could disconnect two of the three parallel battery strings in his Nissan and make a test run. to determine what current is required for steady-state operation at 60 mph steady speed. It was concluded the battery impedance for a single string might limit the acceleration to an unacceptable value. Ed will conduct a test with the present arrangement and report how much current is required for steady-state operation.

Member Shafer said that about 15 kW would be required for a 3000-pound car steady-state operation at 60 mph. Engine-generator components have been mounted on a trailer in some designs, allowing any electric car to be easily converted to a hybrid. Member Oviyach stated that a Sterling cycle engine might be worthwhile looking into.

Use of a Geo "Metro" used engine was suggested. This engine was employed on several PNGV projects. Member Paul Polster reported a used engine would cost about $ 400 at a salvage yard. He promised to investigate and report at the next meeting. It was also reported that new 2-cylinder, water cooled engines are available commercially for about $ 1800. Another possibility might be a used water-cooled motorcycle engine. The subject will be discussed further at the January meeting.

Member Krajanovich reported his new charger was causing an audible sound in his main distribution panel. It was particularly objectionable during the pulsed-phase during the charge-maintenance period. After considerable discussion, George was advised to temporarily run a length of ROMEX wire to substitute for the three conductors in a conduit that were probably the noise source due to the chopping nature of the charger circuit. Use of 200-volt capacitors on the supply circuit and construction of an input filter was also offered as a possible cure.

The meeting was adjourned at 10:24 PM

Submitted by:
Secretary Dave Aarvold

RECENT ARTICLES ABOUT ELECTRIC VEHICLES

Brains vs. brawn. Chicago Sun-Times 11/30/97, Section 12, Page 7. Japanese exhibitors at the Tokyo auto show exhibited their super-clean cars. US manufacturers featured "American muscle cars." Chrysler's Viper costs $ 90,000 and gets about 12 miles per gallon. In a nearby booth, Toyota' s Prius, a hybrid-electric car, sells for about $ 16,000 and gets 66 mpg. Chrysler's VP, Robert Libratore, stated, "We will go wherever the customers go." It will be interesting to compare exhibits at other US auto shows. The next one up is in Los Angeles followed by Detroit and Chicago.

Zapped by ZEV's. Autoweek 12/22/97, Page 14. On paper, New York Governor, George Pataki, may be the truest EV believer in the US. He has proceeded with that state's Zero Emission Vehicle (ZEV) mandate after California, the trendsetter, backed off similar legislation. The governor was offered an EV for the 100-mile round trip commute between his home and the Governor's mansion but declined because of a need for a 3-hour recharge. However, that didn't stop him from proceeding with the mandate that 2% of New York car sales in 1998 must be ZEV's. This works out to be 2800 cars for GM, 1358 for Ford, and 772 for Chrysler. Japanese quota is 2860 cars. The mandate has been upheld by New York courts but an appeal in US courts is pending. New York agreed to buy 235 electric cars for the government fleet; that leaves 7765 to go. (Editors' note - an interesting sidelight was the reported offer of US automakers to speed up their production of low-emission cars if the requirement were dropped)

It's a small electric car world after all. Autoweek 12/22/98, Page 4. The 14th biennial Electric Vehicle Symposium was held December 11-17 at Disney World in Orlando. There were to be 32 cars in the parade washed out by heavy rains. Canada's Bombardier, the snowmobile manufacturer, exhibited its Neighborhood Vehicle (NV) intended for use in gated communities, not licensed or road use. The $ 16,000 car looks like an updated version of a Citicar and has about the same performance.

EV Watch. IEEE Spectrum 12/97, Page 68. Solectia's prototype Sunrise vehicle made the 216-mile run from Boston to New York on just one battery charge. The NiMH battery consumed 27.8 kWh out of a total capacity of 33.2 KWh. Noted EV Consultant, Victor Wouk noted the event shows the real-world practicality for electric cars. The Sunrise prototype was funded by a consortium of a Board appointed by the governors of six New England States.

Going Electric. Weekly Newsletter by Navistar 9/28/97. The truck manufacturer (successor to International) has joined with Lockheed-Martin to develop a series of hybrid-electric concept trucks and buses for testing. The trucks are intended to be used in applications involving short trips with frequent start-stop driving cycles. Package delivery firms such as UPS are expected to be a prime marketing target.

Energy Pick-up for Ford Pickups. R&D magazine, 12/97, Page 10. Ford is the first manufacturer to offer rapid recharging for its Ranger Electric Pickup truck line.

FROM OTHER EV NEWSLETTERS - Concluded

Global Electric Auto News December, 1998 Executive Report had reports on Robert Stemple's speech to the Transportation 2010 Conference attended by 250 and presentations by 10 other speakers. They also report a new EV speed record of 215 mph set by *Lightning Rod.* The previous record of 183 mph was set in 1994 by a modified GM EV1. The issue also reported the revival of the Trans 2 neighborhood vehicle and now called the GEM. About 700 Trans 2 cars were sold @ $ 6000. The 2-passenger car was built in Columbia, MO. Unfortunately, a flawed component caused a recall of all the cars and the company went broke because of repair costs. A new investor bought the remaining physical assets and now manufacturers the GEM in Fargo, North Dakota. They also report that information on Electrosource's Horizon battery can be found on the Web at www.electrosource.com Two collegiate competitors in the Future Car 1998 event will have fuel cell units available for their entries. The winners, Texas Tech and Virginia Tech , submitted the best proposals for fuel cell use. A new book, The New Electric Vehicles, written by Soletria founder Michael Hackelmann is available for $ 25 from Home Power Publishing, PO Box 275-EVN, Ashland OR 97520.

SPECIAL ARTICLE

The December 21, 1997 issue of *PARADE* Magazine had an article entitled **The Car That Changed Their Lives**. It concerned students at Northampton High School in Conway, South Carolina and their project to convert a conventional car to electric power. This disadvantaged rural school with just 654 students became " the team to beat" in EV competitions. This school is a three-time winner since they started in 1993. North Carolina Power Company gave the school a $ 2500 grant to design and build an electric car. A car dealer donated a twice-totaled Ford Escort which the students transformed into a prize-winning electric vehicle under the guidance of teachers Harold Miller in the auto shop and physics teacher Eric Ryan. The students named their car the "SHOCKER" and it was entered in the Richmond VA Grand Prix sponsored by Virginia Electric Power Company. They won the range event by going 64 miles on a single charge on 16 golf cart batteries.

Their second car, called SHOCKER II, was a converted Geo Metro which was entered in the Phoenix 1995 event that had 37 entries. They won first place. After this, the teachers developed a class called Electric Vehicle Technology that combines schience, auto mechanics, math, and business components.

Judging the contestants involves:

- Running the car on on a slalom course, stop, and back up.
- Vehicles follow a pace car driven at a constant speed for range test.
- Acceleration is measured over a 1/8-mile run.
- Troubleshooting. Teams inspect an EV and determine what is needed to repair it.
- Three students are selected from each team to answer questions about the EV industry.

If you want more information on the program, you can write the Wright Center for Innovative Science Education, Tufts University, Department P, 4 Colby Street in Medford MA 02155.