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

John Emde
6542 Fairmount Avenue
Downers Grove IL 60516 -2919

Address Correction Requested

NEXT MEETING: Friday, May 16 at 7:00PM in Ed Meyer's hangar, 216 Sunshine Drive in Bolingbrook.

DISCUSSION TOPICS - 1. Cookout 2. Nissan look-and-drive opportunity. 3. Owners Manual update. 3. Verification of Nissan auction procedures. 4. 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 that will entitle the member to receive our monthly Newsletter that contains useful information about electric car components, construction, policies and events. Dues for new members joining in May will be $ 12.

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
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MAY 1997 PRESSEZ

The repaired Curtis controller was returned and will be installed in the car in time for a see-and-drive session at the May meeting at Ed Meyer's place in Bolingbrook. The car is presently kept there. A barbecue will precede the meeting. To keep the treasurery solvent, the club at the last meeting decided to charge a $ 3 per person fee for sandwiches and refreshments.

The Nissan will be auctioned to the highest bid from **a FVEAA Member** at the June meeting. Member Andy Redpath will give us an update on the owner's manual and bidding procedures will be reviewed.
KEN

MINUTES OF APRIL 17 MEETING

The meeting at the College of DuPage was called to order at 7:34 by President Woods. Eighteen members attended. Treasurer Corel reported $ 2322.22 in the savings and $1630.42 the checking account.

President Woods reported the failed controller was returned to Curtis by John Emde. Repairs and return is expected in early May.

There was a discussion of progress with Member George Krajanovich's project. Four members were assisting him to dynamically balance the motor-clutch assembly. A SPM vibrameter technique used to balance aircraft engine-propeller assemblies was used. It involves placing a reduced voltage to the motor, detecting unbalance with a sensor, placing a trial weight on the assembly, and finally determining the correct placement of a corrective weight using a Smith chart. Ed Meyer described the technique. After balancing the dynamic vibration was less than 0.1 in/sec, below the 0.25 considered ok for automotive applications.

George provided newly-charged old EV batteries connected in series to apply 6, 12, and 18 volts. An alligator clip was used to select the battery voltage. A battery explosion occurred during a shift to the 18 volt tap. Evidently there was a sparking at the clip that ignited hydrogen remaining in the battery after an overcharge. The explosion fractured the top and sides of one battery and caused electrolyte to be sprayed. Ed Meyer had minor acid burns, Vana was hit on the chin with a piece of the case, Ken Meyers received an acid burn. and Dana Mock was hit on the leg with debris and electrolyte. All of these were minor.

Member Andy Redpath led a discussion of the Nissan Owner's Manual draft. He plans to use a series of transparent overlays to show location and connections.

President Woods led a discussion of the Nissan auction procedures and requirements. Sealed bids mailed to President Woods must be **received** by him before 4 PM on June 20, the June meeting date. The words "Nissan Bid" must be written on the outside of the mailing envelope. Bids can also be brought to the meeting. A minimum bid is the $ 4793.21 actual project expenditures. Estimated items not completed total $ 1888. Bids will be opened at the meeting. Members attending will consider the bids and award the car to the member whose bid is the highest over minimum. Tie bids will be decided by a coin toss.

The next FVEAA meeting on May 16 will be held in Member Ed Meyer's hangar at 216 Sunshine Drive in Bolingbrook. It will be preceded by a barbecue and opportunity for members to examine and drive the Nissan. Members approved a $ 3 per person charge for the cookout to retain FVEAA solvency.

The preliminary auction rules will appear in the May Newsletter and approved by the membership. Ed Meyer raised several topics that must be considered.

Member Bob Barrett reported on his attendance at Enviro-97 meeting. held in the Westin Hotel in Detroit. He estimated attendance at about 2000 persons.

The meeting was adjourned at 10:25 PM. Submitted by:

Secretary Dave Aarvold

RECENT ARTICLES ABOUT ELECTRIC VEHICLES

The Book on GM's Electric. Chicago Tribune 3/3/97. This is a short review of the book, "The Car That Could" written by Michael Shnayerson and published by Random House. It notes that GM employed 400 engineers for over a decade to develop the revolutionary vehicle. Twenty-three patents were awarded for the car that used only door handles and a radio from other GM cars. The project cost was **$ 1.5 billion.** If the car fails to make it in the marketplace the electric vehicle industry will be damaged. If it succeeds it will restore to GM a long lost reputation as the world's leader in automotive technology. The program represented a triumph of social policy that emphasizes pollution reduction. (Editor's note - GM has leased 176 cars and reduced the lease cost to move the 300 EV-1 cars manufactured to date.)

Is there a zero-emission vehicle (ZEV) in your future? Kane County Chronicle 11/22/97. This Scripps Howard News Service article. Don Francis, a Georgia Power engineer observes that electric cars today have all the features of a regular suffers from a limited range. He believes development of opportunity charging will overcome this obstacle and make an EV useful for urban uses. He notes the clinching argument is economy since the electricity only costs about a penny a mile. (Editor's note - The FVEAA has consistently presented economic analysis that indicate there is more to an electric car's cost than the electricity it consumes)

Hybrid Hopes (Chicago Tribune 3/30/97) and Future Ford (Chicago Sun-Times 4/6/97). Both these articles describe Ford's hybrid auto project. The car is a midsized sedan that will weigh 2000 pounds and will have a 70 miles/gallon fuel economy. The P-2000 comes with a small efficient diesel engine and a battery-powered electric auxiliary motor. One version will have a starter/alternator that provides regenerative braking. The car will have a small battery that will provide accelerating and hill-climbing power. The development also will investigate the use of a turbine. The project is part of the government-industry Partnership for a New Generation of Vehicles (PNGV), a $ 200-million endeavor.

Honda powers up electric vehicle. Daily Herald 4/13/97, Chicago Tribune 4/`13/97, and Kane County Chronicle 1/10/97. These articles concern the **EV PLUS** electric vehicle that Honda exhibited at the Detroit Auto Show and that will introduce in California this year. A NiMH battery gives the car an 80 mph top speed and a 130 mile range.

Chrysler fuels alliance with GM. Daily Herald 3/1/97, Engineering Times, February 97, and Chicago Tribune 1/19/97. These articles are about the Chrysler program to develop fuel cells for automobile application. The program will use gasoline as the fuel because producing, handling, and storage of hydrogen isn't a practical fuel choice. Chrysler and Delphi have a joint-development contract.

Letter to Chicago Tribune on 3/2/97: "Please tell the rest of the EV-1 story, that given today's addiction to a plethora of must-have luxuries and plug-in gadgets, it is absurd to entertain any notion that and electric vehicle will gain even a small minority of public acceptance. Meanwhile, we're all paying the cost of some Green Geek's pipedream of chasing all the evil smoke from our horizons. B. M. Berwyn." (Editor's Note - Your response will be printed)

FROM OTHER EV NEWSLETTERS

AVEA (The Aussies) in their Mar/April Newsletter had a feature article about a member in wester Australia the converted a 1993 Ford Courier using components that are usually used on Chevy S-10 and Ford Ranger pickup trucks. The final product weighted 750 kg (1650 lbs), accelerated 0-100 kph (0-62 mph) in 11 seconds, had a top speed of 160 kph (99.2 mph), and a range of 100 km (62 miles). The project final cost was $ 18,000.

They also have an article about a fuel-cell lawnmower built by a group at the Jet Propulsion Laboratory as a design exercise. It uses a fuel blend of 3 % methanol and 97% water. Each fuel stack is only 4x6 x.1 inch high and generates 2 volts, 50 amps. 750 watts is required for the lawnmower.

California-based Bob Wing has an article on the Coherent HFXC 5000 charger. It's dimension are 7x12x17, it weighs 33 pounds, and is rated at 5kw. It uses a high-frequency isolation transformer for the 95-140 volt ac supply. The present $ 5000, a little pricey for individual use. For information contact Les Piper, 768 Brittain Lane, Santa Rosa, CA 94507, (707) 523-0335 or E-mail at; LPiper5959@aol.com.

The issue has a one-page feature of opinion by various EV owners that are worth reading.

EVCO, The Ottawa Group, in their Mar/April newsletter contained an interesting editorial by Editor Rick Lane on EV progress. He states that GM should reduce their price and offer the EV-1 in other areas to compete with Honda's EV PLUS. and other vehicles. The public will then have a choice of cars and can make a market determination.

The Executive Edition of Global Electric Auto News for April featured a report on the 1997 APS event held March 7-9. The winning car was the same Saturn Coupe that won the 1996 event. The car has a 162-volt system and Ovonics NiMH battery. It posted 55.5 mph over the 25.3 mile event. The Indiana University/Purdue racing car won that class. There were 34 entries in the High School Stock Class that was won by a converted Porche from Kearny High School in San Diego, CA.

There is also an extensive article about Toyota's Hybrid project that can operate in either a parallel or series configuration. A power splitting arrangement allows the car to start on the electric drive with the engine kicking in later. The engine cuts off when decelerating or during low-speed operation.

They also note that Electrosource, the Horizon Battery manufacturer, has improved production efficiency by consolidating facilities. They are producing 50 units per day and expect to reach the daily 3000 unit level. The Horizon battery has an energy density of 44.2 kWh/kg in production units.

Delphi will produce sealed batteries used in the GM's EV-1 in Shanghai next year. Principal application is expected to be in electric mopeds.

NEWS FROM OTHER EV NEWSLETTERS - Concluded

Global - Concluded. They report that Unique Mobility recently sold $ 4.2-million of stock in Europe and Canada. Sale price for common stock was $ 3.50/share paid by Millennium Financial of Milan, Italy. Last quarter the company lost six cents/share. You can contact John S. Gould, Director of Investor Relations at Unique (303) 278-2002 for information.

The 1997 Michigan Electrathon Competition this year will be at Michigan Speedway, near Springport MI on May 24, with the first race scheduled for 10AM. There will be 32 cars from 21 schools competing. Another race will be held at the same place on June 7th. The National competition will be on July 14th.

SEVA, the Sacramento folks in their April Newsletter has a provocative editorial by SEVA President Mark Bahlke that is worth reading.

VEVA, in Vancouver in their April Newsletter notes that Ballard Power Systems, the fuel cell company headquarter in Vancouver, has secured a $ 1.6-million contract from Nissan to supply their fuel cells. The group will have a Show-n-Ride a Go on June 7th. They also note that the GM-Ovonic joint venture to produce NiMH batteries has installed the first module of production equipment.

Future Drive, the Argonne Lab Newsletter that reports on the Future Car Challenge Program, in their Winter 96-97 issue reports this year's Challenge will be held in Warren, MI on June 3-11. This is the second year of the event that will evaluate improvement in the cars that participated last year. The Future Car Challenge is sponsored by DOE and the United States Council for Automotive Research (A consortium of Chrysler, Ford, and GM). The goals parallel work by PNGV. University students apply creative engineering for adaptations of Chevy Lumina, Dodge Intrepid, and Ford Taurus vehicles to maximize mileage. Twelve universities participated last year. Ten vehicles used hybrid-electric systems. Additional information on the program can be obtained from Scott Sluder at Argonnne, (630) 252-6489, FAX (630) 252-3443, or e-mail Scott_Sluder@qmgate.anl.gov.

FVEAA MAY MEETING LOCATION CHANGED

The FVEAA Nissan, a 14-month conversion project by members, is winding down. The last step in will be the auction **TO AN FVEAA MEMBER** at the June meeting. This will honor the original commitment made to persons who bought Participation Shares to finance the effort.

The May meeting will be at Ed Meyer's place, 216 Sunshine Drive in Bolingbrook. It will give members an opportunity to examine the car, drive it, and ask questions. A cookout will begin in the hangar at 7:00 PM. There should enough daylight to allow a test-drive schedule. **BRING YOUR OWN FOLDING CHAIR.** There will be a $3 per person charge for refreshments.

NISSAN AUCTION REQUIREMENTS

A. The following auction requirements were approved at the April meeting.

1. Only FVEAA members as of 4/11/1997 are eligible to submit bids.

2. The minimum acceptable bid of $ 5566.21 is equal to the amount spent on the project for material and contract labor. It includes $ 773 for components owned by the FVEAA and used for the project; Master relay, Circuit breaker, Pot-Box, Auxiliary batteries, and Electrical meters.

3. Written bids submitted by mail must be received by FVEAA President Ken Woods by 4 PM Friday, June 13. Write NISSAN BID on the envelope.

4. Bids may also be given to President Woods at the June 13 meeting by 7:30 PM.

5. Bids will be opened at the meeting, announced to members attending, and discussed. The winning bid will be for highest amount over the minimum acceptable $ 5566.21. Members present will discuss and evaluate the bids received and authorize a sale or reject all bids.

6. Any changes to the auction procedure outlined above made at the May 16 meeting will be published in the June Newsletter and will govern.

B. The Car

Some items have not yet been completed. These will be the responsibility of the new owner:

1. Thirty sealed gel cells, each a 12-volt unit, now make up the 120-volt battery system. The car was designed for a 96-volt system using sixteen 6-volt Type GC-2, golf cart style, flooded cells. The car's performance using the present battery system was impressive so a decision was made to sell the car with the present system. In 4-6 years, it is anticipated the gel cells will require replacement. To keep a 120-volt system, fifteen 8-volt batteries may be used.

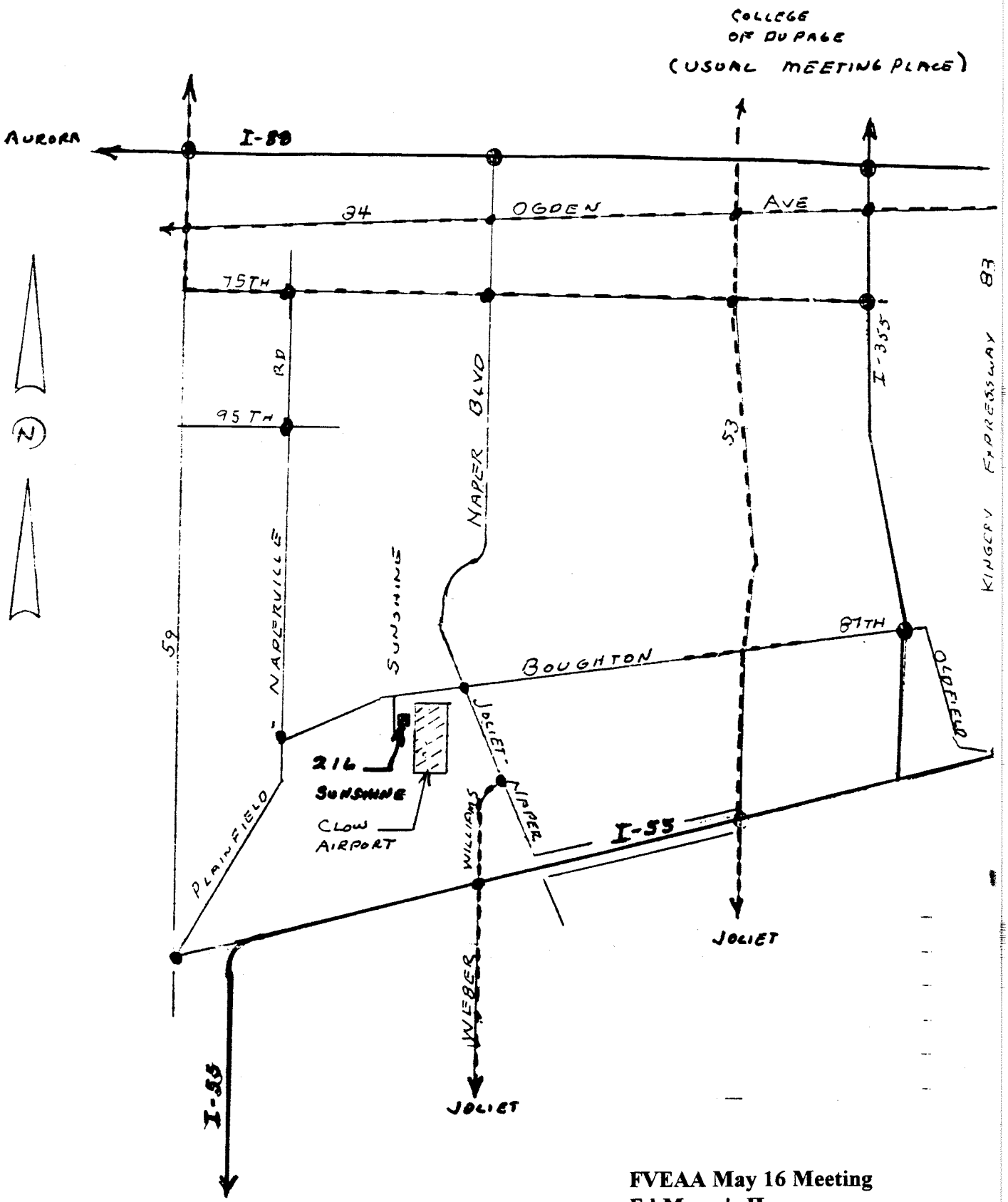
2. The rear springs should be replaced to accommodate the additional weight of batteries located in the trunk. Dimensionally equivalent front springs for a Nissan could be used or the rear units could be customed-applied by Joliet Spring Co. Estimated cost for this work is $ 150.

3. No heater is provided in the present car. A 120-volt nichrome element could be installed in the heater box and wired to the propulsion battery. Estimated cost is $ 50.

4. The brake pads should be replaced and wheels aligned. Estimated cost is $ 125.

5. A new set of tires will probably be needed.

William H. Shafer
May 8, 1997



LEGEND

- INTERSTATE OR EXPWAY
- 4-LANE
- OTHER MAIN ROAD
- INTERCHANGE OR

FVEAA May 16 Meeting
Ed Meyer's Hangar
216 Sunshine Drive
Bolingbrook
Just West of Clow Airport

5/8/1997
W. H. Shafer