

# F.V.E.A.A. NEWSLETTER

September 1991

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Newsletter items should be submitted to the Editor by the first Friday of the month.

Nonmembers are always welcome

**Next Meeting**

September 20th 7:30 P.M. 'Sharp' Room 157; doors open @ 7:00 Use northeast entrance of Building K, College of DuPage 22nd & Lambert, Glen Ellyn

## The PREZSEZ

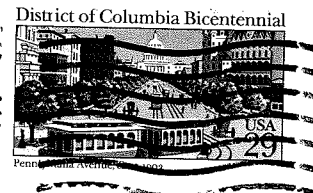
At our September meeting, I would like to continue the discussion we began in August on the inhibiting factors to the new starts of car conversion projects. We didn't have time to completely wrap up the subject last time. I believe this is important for the future direction and activities of the FVEAA.

If any of you are unable to make the September meeting and want to send me your thoughts and ideas on the subject, they will be incorporated in the next issue of our Newsletter.

*Bill*

## Fox Valley Electric Auto Association

1018 Jackson Street  
Aurora, IL 60505



FIRST CLASS

ADDRESS  
CORRECTION  
REQUESTED

John Emde  
6542 Fairmount Avenue  
Downers Grove, IL 60516

MINUTES OF FVEAA MEETING ON AUGUST 19, 1991

The meeting was convened by President Shafer at 7:35 PM. There were 14 members present and 1 guest attending for the first time.

Treasurer Vana reported a balance of \$ 960.09 in the savings account and \$ 2057.75 in the checking account. He also reported receiving 3 VCR and 3 audio tapes from Robert Wheeler of the California Association. These include one tape of a session on flywheels, one on the lithium-polymer battery, and one on the general session. Each tape runs about 1-hour and is available for checkout by members.

Vice-President Woods provided further information on Naperville's Labor Day event which the FVEAA intended to participate. A major disappointment is the lack of an opportunity to display and discuss our cars and club after the Parade. President Shafer will attempt to make this arrangement. If unsuccessful, we may not participate this year.

Member Emde, who is fabricating a motor adapter plate and coupling to the existing 5-speed transmission for Member Shafer's Mazda described the work necessary accomplish this task. A short discussion followed.

The meeting's general discussion examined why there has been a lack of new conversion project starts this year. Inhibiting factors mentioned include:

1. Conversion project cost of \$ 3,500-4,000.
2. Lack of garage space for conversion work, parking for charging and use, and winter storage
3. Lack of knowledge about some aspect of the work, including electrical circuits, parts required and where to get them.
4. Individual uncertainty about ability to complete a project once started.
5. Members who might wish to start a project were not exactly certain where they might go for help in case they got stuck on some part of a conversion. It was observed that FVEAA members have a wide variety of expertise they are willing to share. Discussion of a problem with members at a meeting is a good way to get assistance.

Submitted by

*Bill Shafer*

William H Shafer  
For Secretary Harris  
who was in Florida.

# Automotive Newsfront

Edited by DAN McCOSH

## Electric-car start-ups

The race by major auto makers to develop a practical electric car is gaining more participants, including a small but significant number of independents anxious to demonstrate their technology in the regional electric-car races that sprang up this past summer all over the country.

Entries from one such company, Solectria Corp., headed by 24-year-old Massachusetts Institute of Technology graduate James Worden, won both first and second place in the commuter-car category in the five-day 250-mile electric-car race from Albany, N.Y., to Plymouth, Mass. The race was organized by the Northeast Sustainable Energy Association of Greenfield Mass. The winner was an innovative three-wheel commuter car dubbed Flash, while second went to a Geo Metro converted to electric power.

The three-wheel Flash was powered by a 20-horsepower brushless direct-current motor developed by Solectria. The motor uses high-strength permanent magnets attached to the drive shaft, surrounded by a fixed, circular coil. Current is fed sequentially to sections of the coil by six high-amperage semiconducting switches that are spaced around the coil like numbers on the face of a clock. The motor is similar in concept to the brushless direct-current motors donated by Unique Mobility Corp. to many entries in last summer's trans-United States solar car race, but is slightly heavier at 34 pounds. Worden claims

the motor is much less expensive and wants to use it in a series of electric cars that will cost about \$30,000.

The DC-brushless-motor concept has considerable promise and has driven a number of experimental electric cars, both battery and solar powered. So far, however, the concentration has been on alternating-current induction motors—also brushless—that run through inverters that convert the DC from the batteries to AC. Both types of motors require high-amperage high-efficiency semiconductors to operate, but the AC motors have been proved reliable, with a long track record as industrial drive units and in commercial electric vehicles.

The gull-winged Flash prototype weighs only 860 pounds, including about 400 pounds of nickel-cadmium batteries. The body is made with a glass fiber and Kevlar-aramid-fiber composite that is strong yet light—a necessity in electric-car design.

Less sophisticated, but eminently producible, are two versions of a Geo Metro-based electric car that also use the brushless-DC-motor design, but employ less costly lead-acid batteries. Solectria removes the gasoline-engine drive train from a base Metro and replaces it with an electric motor and batteries. One model is a four-seat car, while the other trades two seats for additional driving range. With a curb weight of 2,370 pounds, the \$25,000 four-seater has a claimed travel range of 60 to 80 miles at 40 mph; but at 2,142 pounds, the \$29,000 two-seater can maintain that same speed for up to 120 miles. Worden says he is already delivering the vehicles to customers and

claims that the cars' cost per mile of operation, including electricity and replacement of batteries every four years, is about two-thirds that of running a conventional gasoline-powered Metro.

That puts him ahead of General Motors, which now has delayed its Impact electric-car project, citing problems developing suitable batteries ["Electric Vehicles Only," May]. Worden has, however, limited production capacity and currently builds only two to three cars per month. That puts Solectria on the same scale as several other independent electric car manufacturers that have been offering kit and assembled vehicles.

The California air-quality standards that have renewed commercial interest in electric car development call for hundreds of thousands of electric cars to be built and sold annually ["Commanding California's War on Smog," Sept. '90]. Whether that leaves room for independently financed manufacturers to compete with the likes of GM, Ford, Chrysler, Mitsubishi, and Nissan—which have all announced electric-car programs—remains to be seen.—Mark Fischetti



The three-wheel Flash electric commuter car weighs in at less than 900 pounds.

SAM OGDEN

## SPECIAL PURCHASE OPPORTUNITY

Member Jack Nikolich has available a fibreglass rolling chassis suitable for a purpose-designed electric vehicle project. It is the sixth (& last) of a series developed as a 2-passenger kit car utilizing an 18 HP Briggs & Stratton engine. The project was a casualty of a corporate merger. The chassis major features are:

1. A weight of 120 pounds.
2. 12" wheels with suspension and steering.
3. A Continuously-Variable Transmission (CVT).
4. Cog-belt drive to each rear wheel.
5. A foam body mold utilizing an Escort windshield.
6. Many other miscellaneous parts for the original project.

A Xerox copy of one of the original developmental cars is shown below. It looks like a combination of a Fiero and RX-7.

The chassis appears to be particularly suitable for an electric car that includes solar panels because of its light weight.

Jack must dispose of the chassis by the end of September. His price is \$1,000. After that, it must go to the scrap heap because he needs the space at home.

Call Jack if you are interested and want additional information. His phone # is (708) 537-6069. His address is 370 South Jeanne Terrace in Wheeling, IL, 60090.

