

# FOX VALLEY ELECTRIC AUTO ASSOCIATION NEWSLETTER FOR AUGUST 2000

**NEXT MEETING: Friday, August 18 at 7:30 PM, Ed Meyer's Hangar at 216 Sunshine Drive in Bolingbrook,**

**DISCUSSION TOPICS: 1. Picnic 2. Triton Project Update. 3. Web Status 4. Member projects.**

## MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the FVEAA. The cost for a full year's dues is \$ 20 which will entitle members to receive our monthly Newsletter that contains useful information about electric car conversions, construction, news, policies, and events. Membership is not required to attend our meetings. Dues for NEW members joining in September will be \$ 4.

**To obtain info about the FVEAA you may contact either Past-President Ken Woods or President Shafer**

Past President Ken Woods  
1264 Harvest Court  
Naperville, IL 60564-8956  
(630) 420-1118  
E-Mail: CasaZeus2@aol.com

President and Newsletter Editor Bill Shafer  
1522 Clinton Place  
River Forest, IL 60305-1208  
(708) 771-5202  
E-Mail: Assessorbill@cs.com

**OR LOG ON TO OUR WEBSITE [WWW.FVEAA.ORG](http://WWW.FVEAA.ORG)**

## AUGUST, 2000 PRESSEZ

At the last meeting members asked if we could have a picnic at the August meeting in Ed Meyer's hangar. Ed agreed so bring your lawn chairs, mosquito repellent and be prepared to enjoy this annual event. There will be a nominal \$ 5 per person charge to those attending to cover the cost of the food that Ed will buy. Directions to Ed's place is included in this Newsletter

I have sent the updated Triton Project schedule for additional discussion. Ray Listina has agreed to schedule a meeting to discuss and prepare a document that can be presented to the FVEAA and Triton Board for a final OK. The Fall semester at Triton starts on August 28<sup>th</sup>.

The website has been open for four months. We have received a couple inquiries about membership.

If any members have ideas of how we can become better known for our activities in the Chicago area please let me know by e-mail. Converting a car to electric power is presently a well-kept secret way of avoiding gasoline supply and price uncertainties.

.BILL

## MINUTES OF JULY 21<sup>ST</sup> MEETING

The meeting was called at Triton College was called to order by President Shafer at 7:40 PM. Eleven members and three guests attended. Apollo Gama, a previous guest joined and Rob Bohnivert renewed his membership. Two guests from IIT were encouraged to attend by IIT Professor Lycos.

Rob offered a few comments about his uncle, Jerry Mitchell who died in May. Rob is now the owner of Jerry's to conversions. He is seeking a source for a vacuum pump to add power for the brakes on one of these. He was advised to contact Member Dave Stensland who had success finding this device on the Internet.

The June meeting minutes were approved as published. Treasurer Corel reported \$ 2310.84 in the checking account and \$ 2,481.06 in the savings account. His report was accepted.

The Triton Project revised work schedule has been sent to Triton for comments and review. Ray Listina has agreed to a second conference to prepare a final document that can be submitted to Triton and the FVEAA for approval. Vice President Munroe and Ray Oviyach will participate along with President Shafer in this meeting.

The Riverside Parade consisted chiefly of a LOT of fire engines and emergency vehicles sounding their sirens and Corvette vehicles. Community organizations also participated. Fred Kitch's Ranger and Bill Shafer's Mazda ended the parade in silence and received applause.

After the parade vehicles were exhibited for three hours. The revised handout and new Declaration of Energy Independence was distributed.

Member George Gladic is searching for a suitable pickup truck for a conversion. It is not easy to find a vehicle with a suitable body condition. There was a general discussion of pickup truck conversions. George noted he spent a lot of time doing bodywork and now that he has retired doesn't want to repeat this work on his conversion.

The FVEAA web page was discussed. A suggestion that the web address be added to the cover page of our newsletter will be implemented.

President Shafer noted that exchange newsletters with the Australian EV Organization and the Electric Grand Prix Corporation in New York have been replaced with web page mutual access. This is welcomed by the aussies because first class postage for their newsletter is particularly expensive. He also announced that Dr. Richard Weeks at Argonne Lab is retiring and will be dropped from the complimentary mailing list. Dr. Weeks stated he has enjoyed reading the information found in the FVEAA Newsletter.

After the break there was a general discussion of controllers. John Emde brought a T-Rex controller he will use on his Ranger conversion to the meeting. The Unit manufactured by DCP. The case includes a ventilating fan. The unit is rated at 600 amps, 96-336 volts. It uses an IGBT power element which has high efficiency. The unit uses an inductive type of chopper control. It sells for about \$ 1900.

Shafer stated the Curtis controller failure report for his unit noted there were loose parts in the case, rust on cap screws, and failure of the of the MOSFET power element and reverse diode. John Emde noted there have been seven failures Curtis controllers in cars owned by FVEAA members. The FVEAA website reported failures might be caused by moist air entering the "sealed" controller as it heats up. Rusty cap bolts support this thesis. Loose parts were found in both George Krajanovich and Bill Shafer's units.

There was a general discussion about new electric and hybrid cars. The Toyota Prius will join Honda's Insight as commercially available hybrids. Detroit will have no competing units for at least two years. One member noted the Big 3 pitch seems to promise an even better hybrid in about two years.

(The old proverb states that a bird in the hand is worth two in the bush.) Ed Meyer noted his Insight has the 12 volt battery backed up by a dc-dc inverter off the power battery.

The meeting adjourned at 10:35 PM.

Submitted by  
Secretary Dick Ness

## RECENT ARTICLES AFFECTING ELECTRIC VEHICLES

It seems the gasoline price crisis is over. The Federal Trade Commission issued a preliminary report on its investigation. The report states that the crisis cause was a combination of the factors discussed in the last FVEAA Newsletter. Their final report will require another three months to search for evidence of a conspiracy by oil companies. (Just after the Election)

The price rise didn't last long enough for the FVEAA and other electric car clubs to exploit renewed interest in converted electric cars as a way of avoiding gasoline supply and price fluctuations. Automakers seem to be headed in the direction of high-mileage hybrids in the next three years. Look for a lot of these "concept cars" to be on display at the next round of auto shows.

**Cycling with A Boost. Machine Design June 15, 2000, Page 46** had a comprehensive article on e-bikes. The first e-bike appeared in Europe more than a century ago. Modern e-bikes were introduced in 1974 when Yamaha introduced its power-assist system in Japan. Zapworld in Sebastol CA began offering e-bikes a few months later. E-bikes have two types of control systems; a simple on-off switch and *pedelecs* (pedal electric) that synchronizes motor speed with pedal effort. Both types have a \$ 20 sealed lead-acid battery that will give a 20-mile range with pedaling.

There are several drive systems. The simplest is a friction drive on the wheel. These may experience difficulty with slipping when the roadway is wet. Direct drives are more complex. Most connect to the rear axle sprocket with a chain. Other use a wheel hub motor. Currie Technology and EV Global Motors use a Kollmorgen ServoDisc brushless dc motor. The armature does not contain slots or iron and the motor is 90% efficient.

Ford Motors TH! NK Division this year introduced the *Traveler*, a compact, foldable frame and the *FUN*, a rigid frame model. The motor in each is rated 400 watts, 24-volts.

Yamaha uses a sensor in the drive unit that continually feeds pedaling force applied into the motor control system. The harder the rider pedals the more the motor torque is provided.

The Currie system has a chain drive to the rear wheel and has a patented control system that has been licensed to Schwinn. There is a one-way coast clutch that allows the rider to pedal with the motor off. The Currie system can be used to convert an ordinary bicycle.

All e-bike manufacturers have units that are treated as conventional bicycles that require no special registration or driver certification.

In a related article Machine Design's Associate Editor asks if e-bikes are the wave of the future. The Japanese bought 250,000 units in 1998. There are estimates that 1 million e-bikes will be sold annually by next year. By 2003 the estimate is 6-million e-bikes will be in operation. Interest in the United States has so far been lukewarm.

You can find out more information about U. S. bike suppliers at the following websites:

EV Global Motors	<a href="http://www.e-bike.com">www.e-bike.com</a>
ZAPWORLD	<a href="http://www.zapworld.com">www.zapworld.com</a>
ETC Express	<a href="http://www.etcbikes.com">www.etcbikes.com</a>
LAFREE	<a href="http://www.lafree.com">www.lafree.com</a>
U.S. Pro-drive	<a href="http://www.currietechnology.com">www.currietechnology.com</a>

## RECENT ARTICLES AFFECTING ELECTRIC VEHICLES - Concluded

**Hybrids hold key to electric cars. Chicago Sun-Times June 18, Page 61.** The article states that future electric cars will use fuel cells powered by hydrogen. Gore-Tex, the company that makes the fabric used in outdoor clothing, is poised to benefit from this shift because the product is used in fuel cells.

Hybrids will be a market test for electric cars because if they are not accepted it will signal a public resistance to paying higher prices for hybrids and cleaner air. Last Year Honda scrapped its EV Plus in favor of the hybrid *Insight*.

The trouble with the hydrogen scenario is how to produce hydrogen, how to transport it, how to store it, and probable extra cost. In the meantime hybrids using gasoline fuel will nurture future developments.

**The June 23d Naperville Sun** had an article written by a West Coast *Autowire* author reviewing his test of the Insight. His reaction was favorable. He noted the hybrid overcomes the EV problems with sluggish acceleration vs. reduced battery life, the inconvenience of recharging and lack of charging infrastructure. He concludes that with escalating gasoline prices the Insight could become the most influential and timeliest car to come along in years.

**Oil Money and Pollution. Forbes, May 15, P 97.** Commentator Peter Huber observes the ‘dematerializing’ of the economy via the *dot com* companies will not change the need for energy. Energy costs remain important. Most alternative energy sources harvest energy from the jungle or prairie at the front end of the energy cycle and, presumably, lessen pollution at the end. We used to harvest all of our energy from the planet’s surface. Now we extract most of it from deep underground.

Total energy consumption keeps rising with increased population and national wealth. Greater utilization efficiency is important but it only postpones the eventual rise in fossil fuel prices. Three decades ago electricity demand was growing at an annual 7% rate. Today it is about half that – but it still keeps increasing.

The “Greens” are concerned with pollution at the tail end of the energy cycle. They have a single-minded preoccupation with energy alternatives such as biomass, solar and wind sources. All renewable sources devour acres because they depend on sunlight that is delivered at about 1 kW per square meter on a cloudless mid-summer noon. Greens ignore the processes and costs to convert this into a useful energy source where and when it is needed.

## FROM OTHER EV NEWSLETTERS

I’m preparing the August Newsletter early and have only one exchange newsletter to review.

**EEVC, the group in Valley Forge NY**, in their July issue had a lead story about the need to balance series-connected batteries. Individual cells have different capacities and cycle to different levels. The usual treatment for this is a periodic overcharge (equalizing charge) to bring the weakest cells in the string to the condition of the strongest. If done incorrectly damage can result. PowerCheq is a bi-directional charge equalization device connected across pairs of series-connected batteries to prevent this action. The article has curves demonstrating the action during both charge and discharge cycles. If you want more information the address is Power Designers LLC, University Avenue # 154, Middletown, WI 53562. You can phone them at (608) 231-0450.

## NET GAIN ADVENTURES

This feature is added to the Newsletter. Net Gain Technologies (NGT) is a Joliet group that built raced and is improving an electric dragster, *Bad Amplitude*. Several members of NGT are also members of the FVEAA. This year they are competing in drag races. The NGT webpage is linked to [www.fveaa.org](http://www.fveaa.org). For those FVEAA members and others not having Internet access a description of their competition will be periodically appear in the FVEAA Newsletter. This account is edited from information provided by NGT member, Kevin Zak.

### Salem Ohio

The race crew arrived in Ohio in their new 5<sup>th</sup> wheel trailer and tow vehicle. They dropped off the trailer at the back end of pits and set up camp. A heavy storm blew in and they took shelter under the canopy only to find a gust blew in under the canopy and it went airborne. Kevin, Karl and John grabbed the frame and also went airborne. They ejected and the canopy returned to earth.

After cleaning up the site they went searching for a restaurant and a tour of the area. The following morning NHRA director had them move their setup to a very choice spot in front of the staging lines. This prestigious location allowed them to be seen by estimated 8000 persons each day. Comments were positive.

1100 vehicles competed in races that were interrupted about every two hours by rain. This required competition until 2 AM. The NGT first run was a disappointing 14 seconds. Other runs were also below expectations. The track officials were happy with their performance. NGT members are not. The launch area was asphalt. The wheels lost traction for about the first ½ of the track. They made a run with a double battery pack of Bolder batteries @ 240 volts. They believe performance will improve when they get their Warfield race motor.

### Martin Michigan

NGT made three exhibit runs. Karl Klien substituted for John Spooner as driver. The first run was 15.2 seconds, made in first gear because of a shifter problem (The CO2 bottle was empty and the gas was leaking from every connection). There were plenty of amps but insufficient voltage in the double string. After refilling the shifter bottle they made the second run in 13.5 seconds. The car was stranded at the end of the run by a suspected depleted 12-volt battery needed for the Godzilla controller. The last run was in the 12's.

Go to the Net Gain website at [www.go-ev.com](http://www.go-ev.com) If you want to see pictures of the events

## **ELECTRIC VEHICLE ASSOCIATION WEBSITES**

**Australian Electric Vehicle Association** [www.aeva.asn.au](http://www.aeva.asn.au)

**Electric Auto Association** [www.eaaev.org](http://www.eaaev.org)

**Electric Vehicle Council of Ottawa** [www.econogics.com](http://www.econogics.com)

**Electric Grand Prix Corp.** [www.electricgrandprix.org](http://www.electricgrandprix.org)

**Vancouver Electric Vehicle Association** [www.veva.bc.ca](http://www.veva.bc.ca)