FVEAA NEWSLETTER

August 1995

NEXT MEETING - August 18 at 7:30 PM

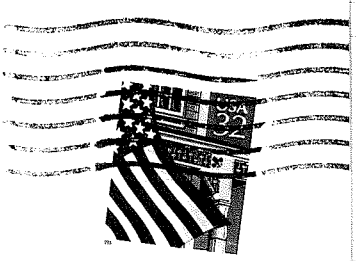
Will be in Room 1046 in the Student Resource Center at the College of DuPage, southeast corner of 22nd Street & Lambert Road

DISCUSSION TOPIC - Member Dana Mock will report and show a videotape of the Cleveland EV Race that he attended. Member John Emde will lead a design discussion of the COOP conversion of our 1990 Nissan Sentra.

MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the FVEAA. The cost for a full year's dues is $15 which will entitle the member to receive our monthly Newsletter which contains useful information about electric car components, construction, policies, and events. Dues for new members joining in August will be $ 5.75.

FOX VALLEY ELECTRIC AUTO ASSOCIATION
308 South East Avenue
Oak Park, Illinois 60302-3512



First Class

John Emde
6542 Fairmount Avenue
Downers Grove IL 60516 -2919

ADDRESS CORRECTION REQUESTED

PRESEZ

The management chart outlined by our speaker last month on the nation's advanced battery development program is a classic example of management by committee. In my opinion it is a prescription for failure. Funding is on a two year basis and each of the big three contributing to the program has an equal voice. Add an administrative bureaucracy to the mix and you have an organization that even the most dedicated and creative scientists will have difficulty following.

Member Dana Mock videotaped the race of electric race cars last month in Cleveland as well as interviews with the college teams that participated in the race. Dana indicates that the batteries can be changed in 18 seconds. These are race cars with identical chassis. cars with restrictions placed on the college participants as to modifications that can be made. The winning team requires ingenuity in design and careful energy management.

The August meeting will include a showing of Dana's videotape and Member Emde will lead a design discussion of the COOP project

Ken

MINUTES OF JULY 21ST MEETING

The meeting at the College of DuPage was called to order by President Woods at 7:41PM. Twelve members and three guests attended. Treasurer Corel reported $ 3100 in the COOP Project, $ 807.88 in the checking and $2186.76 in the savings accounts.

President Woods reported a call from ComEd about the availability of the ECOSTAR van for an FVEAA test. No one volunteered so he will act as project manager to schedule members for their test turn and develop a log sheet and other material the FVEAA proposed for the test as published in the March 94 Newsletter and approved.

Gary Hendrickson from Argonne Lab presented an update on the battery development program including history, testing methods, objectives, funding, and a review of battery types and parameters. He also briefly discussed hybrid fuel cell/ battery developments for bus use.

Funding for 1995 is $ 90-million; 29 to USABC, 23 to fuel cell work, and 38 for battery development. Commercial lead acid batteries have 35 wh/lb of energy storage. The Horizon battery is slightly higher. Sodium sulfur is up to 80.

There was a discussion concerning approval to purchase a 1990 Nissan Sentra for the COOP Project from Member Corel. Curb weight is 2200 pounds. The car runs after repairs to the fuel pump and is good condition for conversion. It was agreed that Member Oviyach would inspect the car and if he finds it ok, authorization to purchase for $550 will be requested at the next meeting.

The meeting was adjourned at 10:33PM

Dave Aarvold

COOP PROJECT LATE NEWS

Member Oviyach inspected the 1990 Sentra and found the car meets FVEAA requirements for the COOP Project. Approval to proceed will be asked at the August meeting. We now need a worksite.

SPORTS

Smokin' Buckeye takes "Silent Thunder"

by Len Fisher
(FVEAA Member)

CLEVELAND - *The 1995 Cleveland Electric Formula Classic (AKA "SILENT THUNDER")* was held as part of the 1995 Medic Drug Grand Prix of Cleveland.

Shortly after 12:30 p.m. on Saturday, July 22, the fastest electric vehicle Grand Prix in the world got under way with a resounding "Gentlemen flip your switches." Seven cars, all of which had a standard Indy car type chassis, took part in the 13 lap, 30 mile race. The pace car was a General Motors' Impact.

The 2.3 mile Grand Prix course was set up at Cleveland's Burke Lakefront Airport which features beautiful Lake Erie as a backdrop. All teams were required to make at least one pit stop during the race- to change batteries.

Teams in the race included entries from Case Western University(#12), Indiana University/Purdue University at Indianapolis (#25), Ohio State University(#3), Wright State University (#8), Bowling Green State University (#4), Northern Arizona University(#5), and the University of Oklahoma(#31).

In spite of a spin out in lap one, Craig Taylor, who was driving Ohio State's "Smokin' Buckeye" passed Chuck Shultz in the IUPUI car at the end of the tenth lap and went on to win the very exciting race.

The "Smokin' Buckeye" hit a maximum speed of 143 MPH. It, like the majority of the cars, was powered by an AC motor which received current from lead acid batteries. Current is converted to AC by means of an inverter. The lead acid batteries were configured to provide about 380 volts. One of Ohio State's "secret" weapons was it's use of dry ice to help keep it's batteries cool.

The auto electric, Chicago Tribune 7/9/95 (Letters to the Editor by M William Brier (Edison Electric Institute) Steven Chapman isn't dreaming, he is living in the past. EV technology is much further advanced than his letter indicates. The Solectria went 288 miles on a single charge and could sell for under $ 20,000. The Impact goes 0-60 in 8.5 seconds. Each gasoline car has a battery and there are 100-million of them in the US.

Recharging standard planned for electric cars, Chicago Tribune 12/11/94. Seven automakers have proposed a standard system for EV recharging. A universal standard is required to make EVs acceptable. Two systems are proposed: the first is covers the usual plug-in devices. The second applies to inductive charging systems developed by GM. The proposal has been forwarded to the SAE and Japans Electric Vehicle Association for review.

Electric Car Owner Refuses to Pay Tax For State Highways. Sunday World-Herald 7/9/95 Paul Wood of Lincoln (Nebraska) has refused to pay $56.25 alternative fuel tax bill from the state for driving his electric car. He has been driving his converted Plymouth Horizon about 3000 miles per year for the past five years in trips around Lincoln. It is the only electric car registered in the State that passed Bill 182 this year to collect taxes on solar and electric powered cars. The annual feel is $75 with a rebate for low mileage driven.

The German Postal Service Electrified. Mother Earth News June/July 95, P-15. Electricity is expected to be powering at least 50 EVs in a test to see if they can be used to deliver the mail. The van type EV uses a zinc-air battery system furnished by the Israeli company, Electric Fuel. Battery weight is 1666 pounds, 22% of the curb weight. The van can carry 2500 pounds and has a top speed of 75 mph. One van ran at a constant 40 mph for 10 hours in a test.

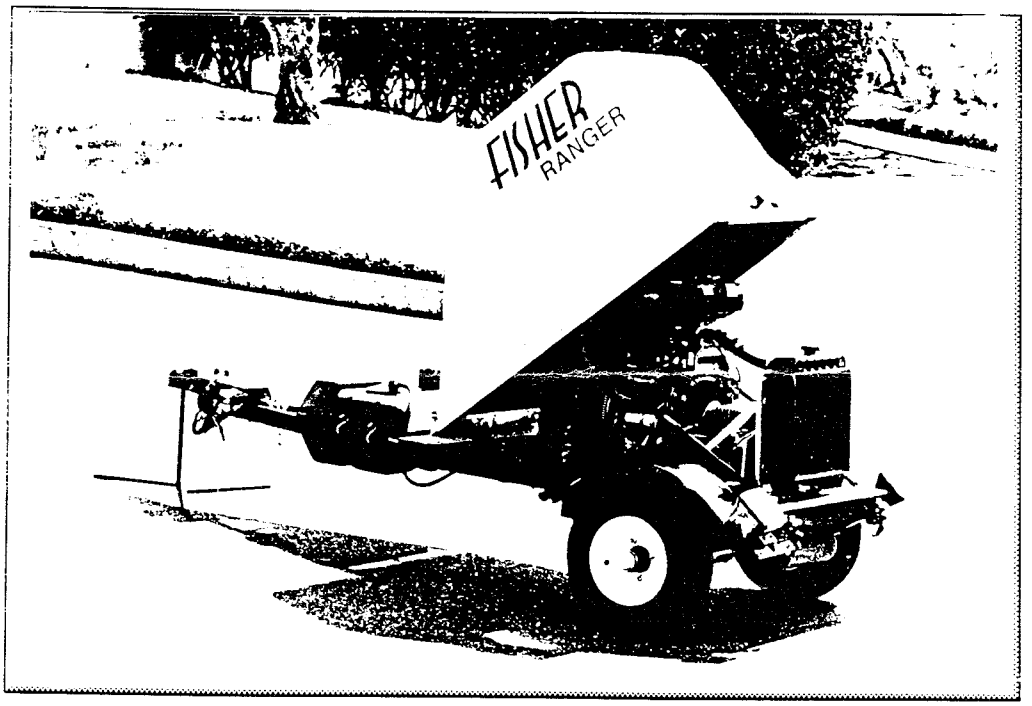
The Electric Tropica. A Preview Test by Car & Driver Magazine available on America Online (Car & Driver). This car has some unusual features to hold down its selling price. The driver's seat is fixed but the pedals are adjustable. Steering is cable-actuated. The body is an welded aluminum monocoque type. The car weighs 2200 lbs.

There are 12 six-volt batteries mounted on a slide-out tray that goes down the car center. There are two DC motors, one on each wheel that eliminates the need for a differential, mounted on trailing arms in back providing a peak power of 24.5 hp (18 Kw).

The car goes 0-30 in 5.2 seconds. Top speed is 57 mph. It achieved a range of 35 miles in mixed urban and highway driving. Electricity cost is between 1-2 cents per mile. Car & Driver estimates another four cents/mile for battery amortization + another 1 cent mile for maintenance making the average cost about 6.4 cents/mile. (Depreciation not included) The car will sell through a Florida dealer network for $ 12,500. A 10% Federal tax credit will lower the price to $ 11,250. Renaissance Cars, 2300 Commerce Park Blvd, Suite 1, Palm Bay Florida 32905, Phone (407) 676-2229 was founded by Bob Beaumont, the man responsible for production of the well know Citi-Car.

Car and Driver's final judgement: "It provides an alternate mode of fun transport.... is styled and priced right, and will likely satisfy its sunshine-state owners. Will it replace your gas car any time soon? Nope. When it comes to four-season electro-motoring, we're still Electric Car Skeptics Quarterly."

Fisher Electric Motor Technology in a press release announced a trailer-mounted hybrid power unit for electric cars. The trailer package contains a 20 hp water cooled engine with a gasoline tank, a 13.5 kw alternator, AC - DC converter, and controls. They call the unit the Ranger. For information, contact Jerry Mirsky, Project Engineer at (813) 572-9328 or FAX (813) 572-8470.

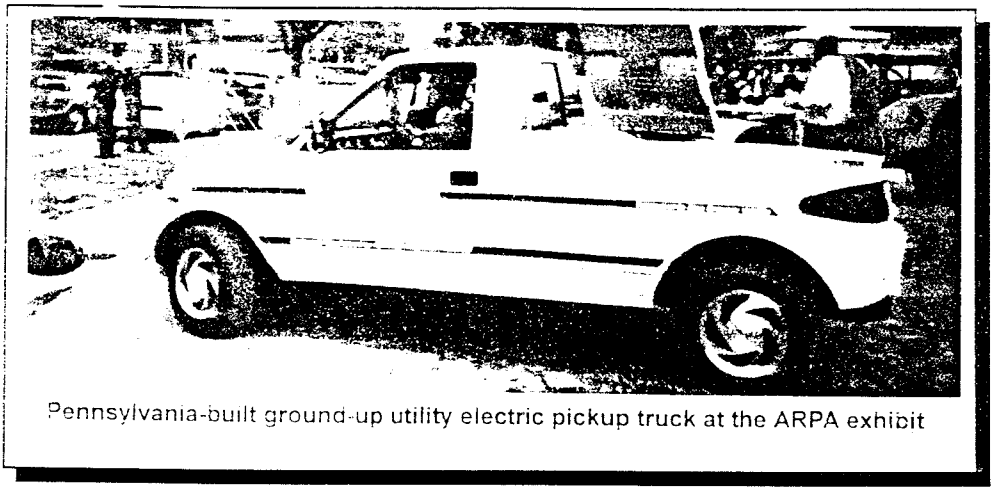


A Hybrid Car May Be the Bridge to a Fully Electric Auto. NY Times (Patents) 7/3/95, Page 22. A hybrid car that uses a nickel-hydroxide-hydrogen reaction that has been used in space satellite batteries for the past two decades may be applicable for electric cars. Ergenics, a Ringwood NJ Company, has patented a cell that cycles hydrogen out of the battery and stores it separately as a hydride. The unit would be discharged for the power needed during acceleration and recharged by an engine-driven generator during other operation.

Plan Could Again Delay the Electric Car. NY Times (National) 7/4/95 by Matthew Wald. Massachusetts is reviewing its decision to adopt the California 2% ZEV mandate had offered a compromise to Detroit auto manufacturers. The state has proposed to delay the requirement until two years after any auto company, anywhere in the world, builds an EV that meets a set of criteria on performance and price. The auto companies relentless opposition plus technical uncertainties present political problems. Some arrangements to count hybrids is a possibility.

FROM OTHER EV NEWSLETTERS

EEVC (The Eastern Association) in their July Newsletter featured a story of Member Ray Carr's completion of his 39-day drive from Astoria, Oregon to Atlantic City, NJ in a restored (and modified) 1912 Baker Electric. The FVEAA wishes to add our congratulations to Ray for his accomplishment. The 3400 mile trip was made in daily segments of an average 89.5 miles. The twelve 6-volt Exide batteries performed well and didn't even require watering. There were problems with an on-line generator and the Curtis controller functioned well after additional heat-sinking was added.



Pennsylvania-built ground-up utility electric pickup truck at the ARPA exhibit

Another article reported on a Utility Electric Vehicle (UEV) built by a consortium of Pennsylvania utilities and exhibited at an EV Expo in Reading. The pickup truck has a composite body and chassis. The 216-volt electrical system is powered by batteries that run down the vehicle centerline accounts for 40-50% of the vehicle's 2250 pound curb weight. A 75 HP Advanced DC motor give a 0-60 acceleration in 15 seconds and a top speed of 75mph. Range is 100 miles (summer).

EVCO (The Ottawa group) had several EVs for sale in their May/June Newsletter. Included is a 1988 Jetta having a 70 mph top speed, A range of 52 miles, and a curb weight of 3200 lbs and a 96-volt system; a SKODA (Czech import) pickup for $ 10235 (Cdn) and a 4-door sedan for $ 18,650; a VW Beetle-based car with a CHIMO fiberglass body whose owner was disabled by a stoke while conversion was in progress for a bargain $2000; a 1977 Renault conversion by U S Electricar for $ 7900.

GLEAN (The Great Lakes-based group) had 44 pages in their July issue. It is not possible for the FVEAA to summarize all the information in the document. Larry Dussalt provides the FVEAA with a Library Copy for those who would like to look it over, or for $ 40 an individual can join GLEAA and get his own copy for one year. There is one article, **You Don't Have To Be Rich To Own An Electric Car,** written by Al Sawyer that deserves mention. He observes that EV prices being quoted by the Big 3 are so ridiculously high that they scare people away. Even the prices quoted by converters are scary. He states that for about $7000 an individual can do his own conversion and have a car that will meet most transportation trip requirement. Electricore is now on the Internet with EV info. Their Home Page is http://www.engr.iupui.edu/ev.

(Editor's note) Usually this feature requires at least two pages. Either I lost some of the exchange newsletters while preparing my house for realtor's showing (We are downsizing) or the EV Organizations are busy with their summer activities. I will try to catch up in a succeeding issue.

EVents

June 20 - Sunrayce 95 winner was built by MIT. This was the first time a Michigan car was not the winner. Sixty five cars were registered but forty made it past the pre-race inspection.

August 11-13 - Renewable Energy Development Institute (REDI) Conference in Willits, CA. Panel discussions on utility restructuring, the Clean Air Act and ZEV Mandates, the role of National Laboratories, and a ZEV showcase - Ride and Drive. For info contact REDI at 733 Main St # 234, Willits CA 95490, Phone (707) 459-1256, FAX (708) 459-0366.

September 12-14 - Electroexpo hosted by Virginia Power in Richmond VA. Vehicle exhibits, discussion of supporting technologies, and an "open House" forum the last day. Registration fee $250. Contact Virginia Power, PO Box 2666, Richmond, VA 23216 Attention Cindy Dickerson, 6th floor, FAX (804) 771-3365.

November 13-15 - S/EV 95 at the Rhode Island Convention Center organized by the Northeast Sustainable Energy Association (NESEA) . This is the seventh annual renewal of an event that features electric car development discussions, workshops, and exhibits. Over 1000 persons are expected to attend. Individual registration $ 395. For info by mail from NESEA, 50 Miles Street, Greenfield MA 01301. Phone (417) 774-6051, FAX(413) 774-6053.

December 12-14- North American EV and Infrastructure Conference in Atlanta, GA organized by the Electric Vehicle Association of the Americas. Exhibits and discussions. For Conference info, call Pam Turner at (415) 855-2010 or write to SHO, Inc, 444 Castro Street, Suite 1015, Mountain View, CA 94041.

February 26-28, 1996 - Design of Hybrid Electric Vehicles in Troy MI. Sponsored by the SAE. This seminar is for the individual that is serious about the technical aspects of design. Course fee is $1045 ($945 for SAE Members). For info contact the SAE Professional Development Division, 400 Commonwealth Drive, Warrendale, PA 15096-0001 for call (412) 772-7148.

ED AHERN WANTS TO SELL HIS 1974 FIAT

The car was owned by his uncle and former member (now deceased), John Ahern. It is a 1974 Fiat that was converted in 1980 with a 12hp, 36-volt system. The car has two parallel battery banks that energize a transistorized controller. Batteries are 2 years old. The car is in good shape. It would be good for someone that would like to upgrade the system for better performance. The main problem is finding replacement parts for the non-electrical components. Ed is asking $ 1900 and is willing to negotiate. Call him at (708) 260-3712 between 4-8PM.

THE COOP PROJECT

The long search for a car to be used for the COOP Conversion Project is finally over. Member Dale Corel located an inoperative 1990 Nissan Sentra that was in good shape. Dale repaired the car's fuel pump and restored it to operating condition. When he had time he planned a conversion that would replace his CitiCar . Dale envisioned a 40hp switched reluctance motor with a sophisticated controller. Fortunately for the FVEAA, Dale's job situation does not now provide that time. He offered to sell the Sentra to the FVEAA for what he paid. Thanks Dale. When you have some off-duty time I expect that later you will convert a car.

Member Ray Oviyach, professor emeritus of automotive technology at Triton College, inspected the car and pronounced it suitable for the FVEAA COOP project. There is only one small ding and rust spot, and the front seat upholstery has one minor tear.

The project will begin at our August meeting when Member John Emde will lead a discussion of the design parameters for the conversion. After car procurement, this is the first step in any conversion project. Members who attend should get valuable information about the design process.

Project Manager, Bob Munroe, has stated that we now have to find a worksite for the conversion. President Woods is working on this aspect. Bob will be working on organizing the effort. He could probably use some help in setting up a schedule, accounting system, and time sheet forms. We hope to complete the project before winter arrives. When it is finished The FVEAA should have a car with an acceptable acceleration and range suitable for most urban driving missions that we can take pride in . The new owner will join about 2500 persons and companies in the US who now own an electric car.

The FVEAA does not have full funding for the project. Some members have delayed their Participation Share contribution until the base vehicle was selected. He urges those who do not have a share now to join the venture.

FVEAA MAY PRESENT AN EV SEMINAR AT ARGONNE LAB

Argonne Lab personnel are involved with many aspects of electric vehicle development. We have proposed to conduct a seminar that would include the following topics:

1. The conversion process, a slide presentation that illustrates the steps involved in converting a 1980 Mazda RX-7.

2. FVEAA members' experience in using their electric cars, including energy consumption and operating costs.

3. A marketing program for EVs that does not rely on mandates. (Infrastructure Entry)

RESULTS: NESEA's 1995 American Tour de Sol

* see "Footnotes to results"

Standing[1]	NESEA Prizes[2]	DOE student Prizes[3]	Range miles[4]	Efficiency[5] miles/kwh	NESEA Energy Challenge[6] equiv mpg	Tour Miles Total[7]	VEHICLE # and NAME	TEAM NAME	TOWN, STATE	Description: Car type / Battery mfg / chemistry
HYBRID CATEGORY										
1	J*	1	186**e	0.64	9.5	486	98 *Project e-*	Mt. Everett Project e-	Sheffield MA	Chevy S-10 pick-up / propane + solar
2			151	1.24*s	11.2	433	3 *Tempest*	Cornell HEV	Ithaca NY	2-person purpose built / lead acid+CNG Geo-Metro generator
3			73	1.65*r	41.8	-23	95 *Ecovox*	Dartmouth Solar Racing	Hanover NH	1-person purpose-built / lead acid + ethanol Honda generator
SOLAR RACING CATEGORY										
1	K*		na	25.3	na	215	85 *Photon*	Salisbury School	Salisbury CT	Tour de Sol racer / Sears / lead acid
2			na	na	90.6*a	69	83 *Sol Survivor III*	ConVal Solar Race Car Team	Dublin NH	Tour de Sol racer / GNB / lead acid
3			na	na	na	45	98 *Solar Flyer*	FHS Solar Car Team	Framingham MA	Tour de Sol racer / Deka Dominator/ lead acid
4			na	35.4*t	na	-117	84 *Suntech*	NHTI Solar Car Team	Concord NH	Tour de Sol racer / Trojan / lead acid
5			na	22.5	na	-139	08 *Mach .05, UVM*	UVM Mach .05 Racing Team	Burlington VT	Tour de Sol racer / Interstate / lead acid
1	L*		na	28.2*u	na	254	87 *Spirit of Massachusetts*	Univ. of Mass. Lowell	Lowell MA	Cross Continental racer / US Battery / lead acid
2			na	na	44.2	-16	37 *Ottawa Orange II*	OHHS Tech Prep Race Team	Grand Rapids MI	Cross Continetnal racer / Exide / lead acid
OPEN CATEGORY										
1	M*		81	22.8*w	245.5*d	256	49 *ERANGE*	Schiller Group	Germany	Pre-production prototype scooter / Electrosource Horizon / adv. lead
2			57	12.53	55.3	-75	89 *Envirocycle III*	CCSU Solar Electric Res	New Britain CT	Motorcycle/GNB/lead acid
3			57	1.64	na	-343	91 *Wild Cherry*	WE'RE It	Austin TX	Yamaha conversion 2 wheel / Electrosource Horizon / adv.lead acid
1	N*	1	73	11.32	89.5	247**f	92 *Sunpacer*	Cato-Meridian HS Tech Team	Cato NY	One-person purpose-built / Exide / lead acid
2			73	9.99	57.5	231**g	94 *Hopper EV*	Tom Hopper	Concord NH	One-person purpose-built / Deka Dominator/ lead acid
3			95**f	43.1*x	126.6*e	41	28 *TNE II*	Team New England	Nahant MA	Cross Continental racer/ Deka Dominator lead acid
4			17	na	11.1	-413	93 *Helios the Heron*	Riverside School	Lyndonville VT	Tour de Sol racer / Deka Dominator / Lead acid
GASOLINE CONTROL VEHICLE										
na			na	1.13	35.8*y	na	10 *Gasoline Control Car*	DOE / Argonne National Labs	Chicago IL	1995 Geo Metro sedan / gasoline powered

Editor's Note - This page was omitted from the July Newsletter by the Copy Center