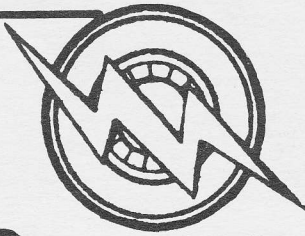


# Electric Auto



# NEWS

OCTOBER 1984

Association

VOL. XVI NO. 10



**SUN. SEPT. 2 SAIED HEADS FOR CAL  
EXPO, 147 MILES IN 2&1/2 HOURS !!  
SAT. SEPT. 8 SAIED DRIVES 215 MILES  
IN RALLY, 2 WORLD RECORDS 1 WEEK**

100+ MILERS 1984

BILL WILLIAMS 123

RUSS KAUFMANN 127  
OAKLAND

MAX ROSENSTEIN 101.5

SEATTLE

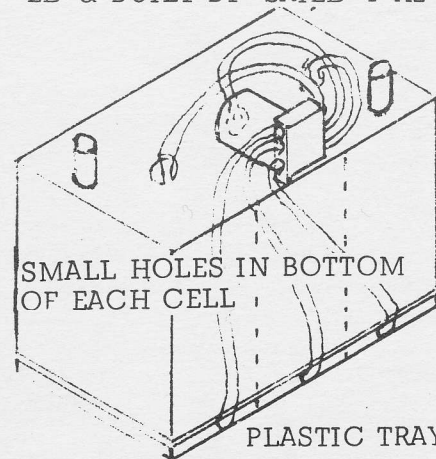
RAY NADREAU 105

NORRIS SAARI 100.8

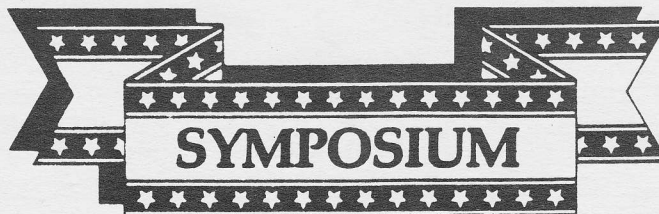
Recirculation adds  
30 to 40% Range &  
cuts charging time  
in half. 500 miles  
in 14 hours !!!!!

## ACID RECIRCULATION SYSTEM

3 CELL MINI PUMP, DESIGN-  
ED & BUILT BY SAIED 1"X2"



1984



1984

REPORTED BY JOHN NEWELL

WITH SPECIAL THANKS TO OUR MODERATOR DAVE HALL

If you failed to get to the Rally and Symposium you missed more than usual, this year. There were more exhibits and they were much improved. The Rally exceeded expectations by increasing the record by 25% to 215 miles per charge.

At the Symposium Mr. John Anderson from Alco Battery Co. threw down a challenge to us. He said we are using a Golf Cart battery, as we all know. He pointed out that the car people and the battery people have not gotten together on how to improve our batteries. He wants to see information on how we use their batteries, how often, how deep we discharge, and how we charge. This is just the kind of questions our "Battery Life and Usage Survey" is endeavoring to collect from you the user, so keep the data coming.

John suggested we use a tapered charge, Lestronic #2 or equivalent seems best. He stated that a rule of thumb is to equalize the cells by charging 3 to 6 hours or more at 5 amperes twice a year. He cautioned that overheating a battery is the most destructive condition it encounters.

Resently Alco started producing a battery which is 5 lbs. heavier, with same physical measurements, but with 20% more amperes. This battery requires 25 break in cycles.

General Electric/Intersil, Inc. of Cupertino, CA sent Ms. Margo Minnium to tell us about A/D converters. She answered questions admirably about Dual Slope Meter Technology and "Building a Battery Operated Auto Ranging DVM with the IC L7106."

Lawrence Livermore National Lab. sent Mr. Art Maimoni to tell us about their Aluminum/Air Battery. He showed us all the hardware from a cell understood to produce 300 Amps at 1 1/2 volts. This battery will cost you about 8.5 cents per mile. A 30 kilowatt unit will weigh 500 lbs. This means a full-performance electric car with a range of several thousand miles. This will certainly change our Rallies!

Inductran Corp, of Berkeley, Ca. sent Mr. Jack Bolger to tell us about two methods for inducing energy into our vehicles. One was a static, automatic charger that your front bumper contacts as you park your vehicle. This way you may get several opportunities to charge during the day and no plugging in to remember. The second method was an induction device that enables us to both charge our batteries and propel our electric while traveling down the freeways. Jack spent some time showing us how this system can contribute toward doubling the capacity of our highways. Highway engineers are you listening?

An Aerospace consultant, Mr. Erwin Ulbrich of Whittier, Ca., told us about some battery testing equipment that simulates driving from Whittier to Long Beach with three stops per mile. He is testing lead-acid, gel-cells, and Zinc Chloride batteries. We understood that the gel-cells are showing 20,000 miles of life.

Mr. Stephen Pertusiello of the Electric Power Research Institute in Palo Alto, Ca., sent a paper by their Mr. Fritz Kalhammer to be read. Their conclusions are: "The development of EV technology in the U.S. is at a critical crossroad. Many promising advances in the technology have recently emerged which increase the feasibility of EV's as a viable transportation alternative. EPRI's Electric Transportation Program is striving to exploit this opportunity to further the readiness and therefore the introduction of EVs through R&D projects which build upon and complement the work being supported by the Dept. Of Energy, manufacturers, and suppliers. Working together with these organizations and The EVDC, EPRI hopes to reduce the technical and market uncertainties which have impeded progress in what otherwise promises to be an attractive and desirable transportation alternative--electric vehicles."



## THEY MADE IT HAPPEN

BY

*Shari Prange*

With all the attention on cars and numbers, we sometimes forget some of the people who make our rallies what they are. There are, of course, the drivers. This year we had two long distance entries: Ray Nadreau, who brought his Fiat from Seattle for the rally, and Vic Schisler, who participated with his Aztec, from Los Angeles. Angus MacDonald put in a valiant 15 laps in his 3-wheel electric Shopper in the hot sun.

The physical and logistical preparations for the rally were ably handled by Dave Nonis and Al Hardage. During the rally, Pat Hardage, Betty Ellers, and Shari Prange directed the registration table, while Paul Brasch and Mike Brown directed the traffic.

Swede Swenson and the Palo Alto Amateur Radio Association provided much appreciated communications all along the rally route with the judges: Jack Reingpack, Dan & Pat Wilson, Gene Fowler, Steve Hammett, Dave Nonis, John Wasylina, and Mr. & Mrs. Chuck Olson.

Bob Wheeler recorded the event on film for our archives.

The speakers for the symposium were contacted by Clarence Ellers and John & Lydia Newell.

Pat Hardage, busy lady that she is, arranged for the Saturday night dinner at Pacific Fresh, a hospitality suite for spouses during the symposium, and the abundant and tasty brunch at the Sheraton on Sunday.

A special thanks should be extended to Richard Stiebel and Steve Hammett, the judges who rode with Saied from his home in the morning, and long after the other drivers had packed it in, to authenticate his 215.7 mile record.

In his own, unorthodox way, Bill Williams struck another blow for the practicality of the electric car. After completing 30 laps in his Honda to win the stock car class, he used his "depleted" battery pack to jump start his gas Oldsmobile. (This is the same electric Honda in which he received a speeding ticket some months ago.) His methods are odd, but he makes his point.

THANKS TO WILLIAM KUEHL  
LOS VEGAS, NEVADA FOR  
PUTTING US IN THE 3 STATE  
CATEGORY

## DOE signs contract with Eaton Corp.

The U.S. Department of Energy's Nevada Operations Office has signed a contract with Eaton Corporation, Southfield, MI, for the development of advanced, dual-shaft electric propulsion system technology to be used in electric vehicles.

The project is a major element of DOE's Electric and Hybrid Vehicle Program. Work under the four-year, \$7,775,494 cost-shared contract will be performed at Eaton's Engineering and Research

Center in Southfield, MI. DOE will provide 95 percent of the contract funding. The balance will be provided by Eaton.

Pat Collins, under secretary of energy, commenting on the importance of this project to the national interest, said, "This project is an important research effort to advance the technologies critical to the establishment of electric vehicles as an alternative to petroleum-based vehicles. The project is in concert with the goal of our National Energy Policy to foster an adequate supply of energy at reasonable costs, which requires a flexible energy system that avoids undue dependence on any single source of supply."

This propulsion system technology project will advance the state-of-the-art of battery and powertrain technology. The nickel-iron battery technology offers the potential for long cycle life, hence low life cycle costs, as well as a high energy-to-weight ratio for long range between charging, good specific power for acceleration and hill climbing, and mechanical and electrical ruggedness.

# Results

# INTERNATIONAL

# Rally

| CAR NO.                | OWNER'S NAME  | CAR TYPE    | GROSS WT. | BTRY NO. | BTRY MFR   | MIN. | MILES |
|------------------------|---------------|-------------|-----------|----------|------------|------|-------|
| <b>ANTIQUE CLASS</b>   |               |             |           |          |            |      |       |
| 1                      | B. Palmer     | 1904 Olds   | 1300      | 6        | EV1000     | 135  | 4.1   |
| <b>CUSTOM CLASS</b>    |               |             |           |          |            |      |       |
| 1                      | S. Motael     | Fiat        | 3500      | 32       | ALCO       | 105  | 215   |
| 11                     | R. Kaufmann   | VW          | 2500      | 18       | ALCO       | 105  | 127   |
| 15                     | D. Gillis     | VW          | 3120      | 16       | ALCO       | 105  | 86    |
| 16                     | S. Skokan     | 78 Subaru   | 3250      | 18       | ALCO       | 105  | 82    |
| 6                      | A. Hardage    | 81 Aquila   | 2490      | 12       | ALCO       | 105  | 65.6  |
| 20                     | B. Steinfeld  | Ground Up   | 2000      | 12       | Trojan     | 135  | 65.6  |
| 24                     | C. Ellers     | Aztec       | 3200      | 16       | ALCO       | 105  | 37    |
| 9                      | V. Schisler   | VW Pan      | 2900      | 16       | ALCO       | 105  | 8.2   |
| <b>STOCK CLASS</b>     |               |             |           |          |            |      |       |
| 3                      | B. Williams   | Honda       | 3250      | 18       | Trojan     | 105  | 123   |
| 22                     | L. Wenzel     | Honda       | 3000      | 18       | Pwr +      | 105  | 90.2  |
| 8                      | S. Cornell    | Vega        | 3900      | 18       | ALCO       | 105  | 86.1  |
| 18                     | M. Rosenstein | Honda       | 2640      | 16       | ALCO       | 105  | 82    |
| 28                     | L. Macmillen  | VW Wagon    | 3300      | 16       | ALCO       | 105  | 65.6  |
| 21                     | B. McCaskie   | VW          | 3250      | 16       | Trojan     | 135  | 61.5  |
| 25                     | E. Schanz     | King Midget | 2160      | 12       | ALCO       | 105  | 57.4  |
| 34                     | L. Goodell    | Pinto       | 3650      | 16       | Trojan     | 135  | 57.4  |
| 29                     | L. Henstreet  | VW          | 2660      | 12       | ALCO       | 105  | 53.3  |
| 31                     | I. Tillin     | Honda       | 2550      | 14       | ALCO       | 105  | 53.3  |
| 4                      | R. Nadreau    | Fiat 850    | 2800      | 18       | Exide      | 105  | 49.2  |
| 26                     | W. Kuehl      | Pinto       | 3200      | 16       | Trojan     | 105  | 45    |
| 13                     | E. Peterson   | VW Bug      | 2644      | 12       | PWR +      | 105  | 41    |
| 17                     | J. Newell     | Fiat        | 2500      | 12       | ALCO       | 105  | 36.9  |
| 32                     | M. Milton     | Datsun      | 3600      | 16       | Trojan     | 135  | 36.9  |
| 2                      | G. Izuno      | Fiat        | 2580      | 12       | Marine     | ?    | 28.7  |
| 35                     | F. Fortune    | Toyota      | 3300      | 18       | ALCO       | 105  | 28.7  |
| 23                     | C. Ellers     | Datsun PU   | 3800      | 14       | Trojan     | 105  | 24.6  |
| 33                     | B. Jackson    | Ground Up   | 3000      | 12       | ?          | 105  | 24.6  |
| 19                     | P. Mauch      | Nsu-Audi    | 2255      | 8        | Trojan     | 135  | 16.4  |
| 7                      | C. Olson      | Nash Metro  | 3460      | 18       | Pico       | 105  | 12.3  |
| 5                      | A. Hardage    | Fiat 850    | 2487      | 12       | EV1000     | 105  | 4.1   |
| 30                     | B. Palmer     | Vega        | 3300      | 12       | Trojan     | 135  | 4.1   |
| 27                     | J. Herbner    | Vega        | 3700      | 12       | Trojan     | 135  | 4.1   |
| 37                     | J. Bolger     | Chrysler    | 3900      | 20       | US         | 105  | 4.1   |
| <b>2/3 WHEEL CLASS</b> |               |             |           |          |            |      |       |
| 14                     | A. MacDonald  | El. Shopper | 900       | 4        | Trojan     | 105  | 61.5  |
| 10                     | B. Fulton     | Ground Up   | 435       | 2        | Interstate | 105  | 24.6  |
| 12                     | R. Paulson    | Ground Up   | 385       | 2        | Gould      | 105  | 16.4  |

Now extensive surveys in Europe and the UK reveal a rapidly-developing future demand for battery-powered ground equipment in those areas for an economical solution to soaring fuel costs.

The running-cost benefit of airport EVs is emerging as the big plus for battery-electrics. This has been given a big boost by recently available figures from a long investigation by Eastern Airlines in the US.

## ONE HALF OPERATING COST CONFIRMED AGAIN

These show that taking a cross section of their vehicles, for every dollar's worth of petrol consumed, only 2.6 cent's worth of electric charge was needed: a staggering difference!

### The benefits

These benefits help further explain why the choice for airport ground vehicle support is racing in favour of EVs.

**Low maintenance costs** come from the EV inherent simplicity and few moving parts. The same Eastern Airlines survey referred to above found it costs only half as much to service their EVs as it does to similarly maintain their internal combustion-engined models.



# SEATTLE

## Results of 1984 SEVA Long Distance Rally

Media coverage was fantastic! This year's demonstration of the ideal commuter vehicle was covered by all three of Seattle's major television stations, for a combined total of 16 minutes' air time. Also attending the rally were observers from the State House of Representatives, the Battelle Institute and Portland General Electric.

From CALIF.  
CLARENCE ELLERS  
AL HARDAGE  
From OREGON  
JOHN WAYLAND

It was also history-making. The number of electric wheelchair users tripled over last year, and \$400 in prize money was awarded to the skillful, the powerful, and the lucky.

Next year we hope to have a new rally location and an even larger prize purse. For a detailed report of entrants and results, see the accompanying chart.

| Name            | Type          | Wt.  | Btry No. | Miles   |
|-----------------|---------------|------|----------|---------|
| Ray Nadreau     | Fiat Spyder   | 2400 | - 18     | 105.0   |
| Norris Saari    | VW Bug        | 2240 | - 20     | 100.8   |
| Steve Lough     | VW kit        | 2720 | - 20     | 75.6    |
| Don Cheesman    | K. Ghia       | 2500 | - 12     | 65.1    |
| Al Hardage      | VW kit        | 2200 | - 12     | 60.9    |
| John Wayland    | Datsun        | 2000 | - 8      | 54.6    |
| Clarence Ellers | Aztec         | 3000 | - 16     | 52.5    |
| Vern Frese      | Vega          | 3400 | - 10     | 46.2    |
| Lu Griggs       | Ferrari       | 2200 | - 12     | 46.2    |
| Bruce McFarland | VW sqback     | 2700 | - 12     | 42.0    |
| Lough Motors    | Leopard red   | 2600 | - 16     | 33.6    |
| Lough Motors    | Leopard wht   | 2600 | - 16     | 21.0    |
| Ray McLease     | Jet Electrica | 3100 | - 16     | 25.0 UO |

# OAKLAND

## EAST BAY RALLY

| CAR NO. | OWNER, s NAME | CAR TYPE  | GROSS WT. | BTRY NO. | BTRY MFR | MIN. | MILES |
|---------|---------------|-----------|-----------|----------|----------|------|-------|
| 1       | Wenzel        | Honda     | 3000      | 18       | -        | 106  | 72.5  |
| 2       | Cornell       | Vega      | 3900      | 18       | -        | 105  | 87    |
| 3       | Schaeffer     | Renault   | 2465      | 8        | -        | 45   | 23.2  |
| 4       | Williams      | Honda     | 3240      | 18       | -        | 105  | 95.7  |
| 5       | Rosenstein    | Honda     | 2830      | 16       | -        | 105  | 101.5 |
| 6       | Ziegler       | Chev LUV  | 3600      | 16       | -        | 105  | 60.9  |
| 7       | MacDonald     | Shopper   | 900       | 4        | -        | 105  | 66.7  |
| 8       | Van Scyol     | Vanguard  | 1740      | 8        | -        | 106  | 29    |
| 9       | Tillin        | Honda     | 2750      | 14       | -        | 105  | 60.9  |
| 10      | Kaufmann      | Custom    | 2350      | 15       | -        | 105  | 84.1  |
| 11      | Callahan      | Ma-da     | 2800      | 12       | -        | 105  | 23.2  |
| 12      | Milton        | Datsun    | 3600      | 14       | -        | 140  | 34.8  |
| 13      | Ellers        | Datsun PU | 3600      | 14       | -        | 105  | 17.4  |

weather reliability, with cold starts. Not starts or damp starts all the same. With no wasteful warm-ups needed, the stop-start, short-range work required of most airport vehicles is ideal for EVs, and the lead-acid battery.

FOR SALE: J&H G-128 400 A motor \$100. Reconditioned Lestermatic charger 12/72 VDC, 115/230 VAC. New \$175. O.Tolleson  
5319 Ridgevale Way, Fair Oaks, Ca. 95628  
(916)961-1154

\*\*\*\*\*

# WIN AN EV

LOTTERY FEVER HITS EAA

STAN SKOKAN ELECTRIC VEHICLES INC.  
HAS DONATED A HONDA CIVIC 72VOLT AUTOMATIC TO BE RAFFLED AT  
OUR DEC. 15th MEETING ALL FUNDS TO BE USED FOR CLUB ACTIVITIES

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BE PICKED UP  
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DRAWING DEC.  
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ARE  
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\$10.00 PER TICKET

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CITY \_\_\_\_\_ STATE \_\_\_\_\_  
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HOLD THIS TICKET  
ELECTRIC AUTO ASSOCIATION  
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SUNNYVALE, CA 94089

PLEASE REPRINT AS NEEDED SEND 10.00 FOR EACH TICKET TO SCEAA % LEE  
HEMSTREET 787 Florales Dr. Palo Alto, CA 94306

ALUMINUM AIR POWER CELL  
Status: September 10, 1984

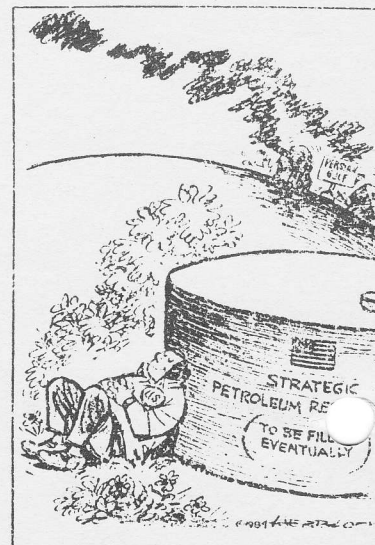
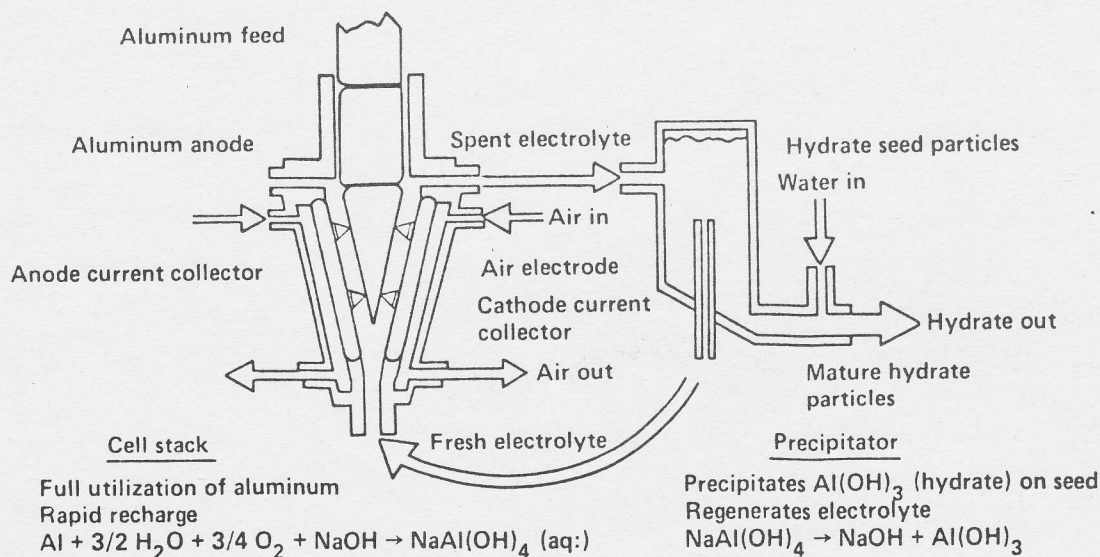
### OBJECTIVE

Arturo Maimoni  
Project Leader

Develop an aluminum air power cell as an energy source for general purpose electric vehicles, and evaluate its ability to provide vehicles with the range, acceleration performance, and rapid refueling capability of current internal combustion engines.

THE ALUMINUM-AIR POWER CELL GENERATES ELECTRICITY  
FROM ALUMINUM, WATER AND ATMOSPHERIC OXYGEN – AND  
PRODUCES A REUSABLE REACTION PRODUCT

COMPLETE TEXT  
NEXT MONTH



A cloud no bigger than a man's gas tank



## EV Marketplace

Direct-Factory Discount Price on the Original  
Bradley GT Charger!

This is the identical charger that was sold with every Bradley GT electric car. It is a dual-output charger, with a 96 volt charging capacity for traction batteries and a separate 12-volt DC lead for charging the battery that powers accessories.

The Model 9870 can use 115, 208 or 230 volt AC input, although only 208 or 230 volt service must be used to charge batteries overnight.

Batteries get fully and properly charged every time, without overcharge because of the patented electronic device that shuts the charger off automatically at the proper time. In addition when the charger is left plugged into the batteries after it shuts off, it will turn back on every two days and fully recharge the batteries. When the car is in storage, the batteries can be maintained at full charge to avoid deterioration.

The original price of the Model 9870 was well over \$700, but while present inventory lasts, you may buy one for \$395.00!

Contact:

Lester Electrical of Nebraska, Inc.  
625 W. A St.  
Lincoln, NE 68522  
(402)477-8988

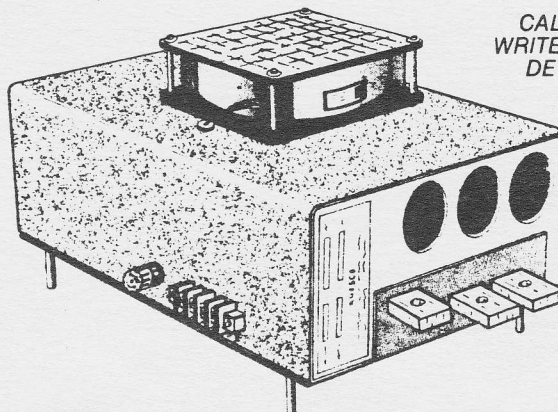
69 VW FASTBACK, Beige(few marks), heavy duty shocks, Radialace Hi-Steel tires, steel bed-pans for the twelve 6V Trojan Batteries and large 12V HD auxiliary power source; BALDOR 8 hp motor and Siskiyon Adaptor and clutch unit; Willey Model 8 Controller. All power cables are Double O Welding cable with firmly staked copper terminals. Standard Watt Meter precedes Lester Model 9545, 72V & 12V, off-board Charging unit. Our log Book is showing 1500 miles of city & inter city delivering, showing mileage per trip, power consumption and trip time and running time totalizer. Ignition Key actuates Power Contactors and alarm buzzer indicating that the brakes are on.

Why sell? Well, I'm 86 and have crawled around this little Gem all my poor old bones will allow and I have had my fun. Recently I made a pilot error, and it quit! Probably in the Accelerator Pot or in the Willey. But I don't have the moxie to tie into it! I have \$5000 (just in components) and it runs sweet. But make an Cash Offer deducting \$500 to come and get it, and something in case you feel it necessary to replace the controller. The name is M. Dale Newton, 460 Arnos Street, Talent, Oregon, 97540, 535-6098. Space 28, Talent Mobile estates.

## ELECTRIC VEHICLE CONTROLLER

# \$495

- 400 AMP
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- 4000 Hz EFFICIENCY
- FULLY PROTECTED
- FULL LINE OF ACCESSORIES AVAILABLE



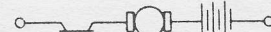
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"Auranthetic" Battery Cycle with built in  
charger. Recent battery \$400.  
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\*\*\*\*\*

FOR SALE: PMC controller, transistor,  
96v/350 A \$350, EVC controller transistor,  
96v/500 A \$250, 500 A shunt \$5. Roger  
(619)453-2231 or 277-3166.

\*\*\*\*\*

Karmen Ghia - Electric - 1965 conversion.  
PMC electronic controller, onboard Lester  
charger, 72 v. new paint job, new  
upholstery, new tires, air shocks. All  
electronic gear brand new, top quality.  
Capable of 55 mph. Good Acceleration.  
R.O.A. 52 miles. Asking \$4,000.00. Will  
sacrifice for any reasonable offer.  
Contact Dr. G. S. Rosenthal 5640 S. Wasatch  
Drive, Ogden, Utah 84405 (801) 479-8801.

ADS must be received with payment by the 10th. of the month, for the following month's  
issue. AD rate is min. 1 to 5 lines \$5.00, 1/4 Pg. \$15.00, full Pg. \$50.00, full Pg.  
2 sides \$80.00. Wanted, Trade, For Sale, etc. Mail to EAA 1249 Lane St. Belmont, CA.

94002

# WHATS HAP'N

## Peninsula

### SPECIAL HAPPENING

October 6, Saturday, San Bruno Library 10-12. You will hear Bob Stainfield and see his award winning car. This is a ground up lightweight test bed for Bob's many innovations and design ideas. Don't miss this one.

CALL: Lydia (415) 591-6698



7  
ELECTROCHEMICAL  
SOCIETY,  
NEW ORLEANS, LA

### Wind-Power Firm Moving to Milpitas

ESI Inc., which produces wind-powered electric generators, is moving its headquarters from Colorado to Milpitas because it expects the most rapid growth in wind-generated power to be centered on the West Coast. United Press reported that ESI is relocating its administrative, engineering and research and development managers to Milpitas. Its sales and marketing offices will remain in Boulder, Colo., while manufacturing will continue in Danville, Ill.

### EAA CHAPTERS

Call the contact person for meeting times and places.

ARIZONA: Phoenix Chapter

Greg Whitney 602 849-1872

ARKANSAS: Little Rock Chapter

B.S. Boykin 501 562-0252

CALIFORNIA:

Bakersfield Chapter

James Peters 805 393-1749

Concord: Contra Costa Chapter

Max Rosenstein 415 229-3469

Los Angeles: Burbank Chapter

Il. Weiss 213 849-7632

Oakland: East Bay Chapter

Jim Fahey 415 848-1468

Sacramento Chapter

Cliff Veiles (916) 966-9281.

San Bruno: Peninsula Chapter

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San Jose Chapter

Roy Paulson 408 269-7937

San Rafael: North Bay Chapter

Gordon Schaeffer 415 456-9653

Santa Clara Chapter

Lee Hemstreet 415 493-5892

DISTRICT OF COLUMBIA:

Washington: EVA/DC Chapter

Charles Dammers 301 439-1365

MARYLAND: Baltimore Chapter

D. Michalski 301 289-7896

NEW JERSEY: Moorestown Chapter

Sid Kreitsberg 609 829-2445

OKLAHOMA: Tulsa Chapter

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Keith Sherry 503 745-5607

Medford: Rogue River Chapter

George Holbrook 503 772-6856

Salem: Willamette Chapter

Lee Brundidge 503 390-3871

TEXAS: Houston Chapter

Robert Nixon 713 668-4214

WASHINGTON: Seattle Chapter

Steven Lough 206 325-2600

WISCONSIN: Milwaukee Chapter

David Perez 414 481-9655

EDITORS: - Walter Laski - John Newell - Bill Palmer - Paul Brasch - COMPILED AND  
PUBLISHED By Clarence Ellers. SEND IN YOUR PERSONAL AND CLUB NEWS AND COMING  
EVENTS. ARTICLES - COMMENTS etc. all correspondence to address below.

Electric

Auto



NEWS

Association

OCTOBER 1984

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Belmont, Ca.  
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