Electric Auto Association 1-800-537-2882

CURRENT EVENTS

November '95 Promoting the use of electric vehicles since 1967 Vol 27 No. 11

Classics as Electrics

Electric Mayflower Takes British Show

British car buffs gathered in Palo Alto on September 10 to celebrate "wind in the hair and oil in the driveway" during the 18th Annual British Car Meet. This year's winner, however, had zip without drips and class without gas. An electrified 1953 Triumph Mayflower owned by EAA member Peter Panagotacos M.D. of San Francisco whizzed away with the People's Choice Award for niftiest car in the show.

The car might have won because Panagotacos' 8-year-old son kept polishing it car throughout the 3 days of the show, but whatever the reason, the little Mayflower sailed away with the prize before the owners of 600 pampered and polished English classics.

The win startled Panagotacos, who owns seven 1953 Mayflowers. He expected one of his other cars, a little jewel once owned by Eleanor Funk (of Funk and Wagnall's Dictionary) and a one-time resident of the Ford Museum in Detroit, to take top honors.

Panagotacos thinks that the British car afficionados could see beyond the Mayflower's paste-wax shine and not-one-dust-speck elegance. The electric drivetrain obviously upped the car's niftiness factor in the minds of many show-goers enough to put it over the top. Brit car buffs care about driving clean? This says they do.

To use Triumph's 1953 ad slogan, a quote from a British peeress upon her first sight of the original Mayflower (which was deliberately styled after the Rolls-Royce), "Oh, how bloody marvelous!"

Perhaps they could also appreciate how the electric drivetrain enhanced the Mayflower's performance and reliability. Triumph made no secret about copying the Rolls body, but the engine was another matter. Since the stock engine could barely scuttle the car along at 55 mph, driving on California freeways engendered major panic reactions. The aluminum flathead design led to frequent blown head gaskets and warped heads.

The car was a wedding present in 1961 and driven on extensive round trips to Oregon and Washinton D.C., but the upkeep involved was too much for the young medical student. "I rebuilt the motor twice, changed head gaskets four times and the head once before finally giving up," he said during an interview with CE.

After the car sat for 25 years in his mother's San Francisco garage, Panagotacos decided to resurrect it with a later-vintage Triumph motor. When that engine proved too large, and a growing interest in EVs made him aware of the conversion option, he solved the problems by transforming the car into an electric.

Mike Slominski, of Mike's Auto Care in San Mateo, consulted on the conversion and Bill Eck of Auto Cellular in Half Moon Bay did most of the hands-on wrench work. After restoring four cars in five years, Dr. Panagotacos needed a rest from Mayflower mechanicking.

Continued on page 4

Editorial by Clare Bell

CA DMV DOES IT AGAIN -EVaporating "E"s

California Department of Motor Vehicles' recent installation of a new computer system has resulted in registration woes for owners of EVs. Local DMV offices can no longer enter the "E" (for electric) mode of propulsion into their terminals; the system won't recognize or accept it. On a recent visit to Capitola DMV to get tags on a new conversion, CE's editor spent about 2 hours working with a DMV Capitola (Santa Cruz) clerk to to get the car properly registered. Although the clerk was sympathetic to the cause of EVs and savvy in the workings of the DMV, the system repeatedly frustrated her attempts to get the "E" designation into the car's record.

This may only be a problem for in-person registrations, although CE has heard that recent registration cards for EVs have had the "E" designator replaced with gas or diesel, which means DMV thinks the car must be smogged. My own mail-in registration for an electric VW came back OK, with the "E" in place.

Whatever the source of this "improvement", it puts another obstacle in the way of EV owners and drivers, one we definitely do not need. C'mon, DMV! You've given us hassles enough. Please give us a break. We're trying to clean up the air that YOU breathe.

For the sake of clean air and sanity, please write to the Office of the Director, Department of Motor Vehicles, P.O. Box 932328, Sacramento, CA 94232-3280. DMV assumes that there is no demand for the "E" mode of propulsion to be accessed in local offices. Tell the Director that assumption is flat-out wrong! Local DMV offices DO need to access the "E" mode of propulsion. There is demand for it and that demand will grow.

Here's the letter I wrote. Hopefully I'll get some sort of reply.

Again, it would help if EV drivers wrote in. Don't just let your registration expire without renewing. The hassle of keeping the car registered is worth it. Don't give them an excuse to take your EV off the road. – CB

9/14/95

Office of the Director
Department of Motor Vehicles
P.O. Box 932328
Sacramento, CA 94232-3280

Dear sir;

I am writing you out of concern that the recent changes in DMV's updating program have it difficult to register electric vehicles.

When I went down to the Capitola DMV to register a newly converted electric Porsche 914, I discovered that the clerk who assisted me could not enter the "E" (for electric) mode of propulsion. This was not due to any inadequacy on her part; the system simply refused to accept the entry. She struggled with this for the better part of an hour, consulting superiors and manuals. Finally she put in a request to the central office in Sacramento to enter the "E" designation. ***(They can do that. They call it a "suspense".)***

She issued registration tags along with a temporary operating permit, so that if I was stopped, and the car showed up as incompletely registered, I'd be OK. However, it took her, and me, much longer than normal to sort this out. I might add that she gave me excellent service, going beyond the call of duty to get me what I needed.

There is definitely a current demand for the "E" designator and that the California ZEV mandate will make this demand grow. Local DMV offices should be able to assign a car to "E" as easily as they do to "G" (gas), "D" (diesel) or P (propane). There are already at least 3,000 road-legal EVs in California and more are being added each month. Many of them are owned and driven by Electric Auto Association members.

These individuals who are forward-thinking enough to want to drive an EV should be rewarded, not made subject to new hassles! For the sake of clean air and the sanity of electric car drivers, please let me know what changes DMV intends to make so that registering EVs is as easy as registering any other vehicle.

Clare Bell, Managing Editor
Current EVents

Photo Credit /Cover
Owner Peter Paragotacos, M.D., builder Bill Eck and winning Mayflower.

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Article Submissions
The deadline for articles is the 1st of the month. Articles submitted after the 1st of each month will be retained for future issues of Current EVents. Contact Clare Bell, Managing Editor for further information. If you would like to submit an article for Current EVents, the preferred format is on a floppy disk, along with a printed copy of the article. Include camera-ready photos or graphics in TIFF or EPS.Please specify PC or MAC and identify software and version number.

Advertisements
If you would like to submit an ad, refer to Advertising Rate Sheet on back page of CE or contact contact Susan Hollis, Advertising Mgr. at (408) 374-8605.

Membership/Address Changes
For information on new membership or change of address, please send your requests to:
EAA Membership
2710 St. Giles Lane
Mountain View, CA 94040

Letters

This item came over the EV discussion list from Dave Erb, a previous CEcontributor. His email addresses are derb@cc.weber.edu orDERB@staff.etb.weber.edu. Response to editorial comments on ev crash safetyFri, 29 Apr 1994 15:51:48

Dear Editor:

I read your editorial in the May issue of Current EVents with great appreciation and hearty concurrence. If anything, you're understating your case when you refer to 10-g crash loads. A few comments on crash safety design:

1) a good solid pothole will apply about a 4-g vertical load to anything rigidly mounted to a car's unibody (hence, isolated from road shock to the maximum extent of the suspension's capability). If the suspension bottoms out, it will be worse than that.

2) 40 g's is the limit of human tolerance, so there's little incentive to design structure that will withstand any greater load. Crop duster aircraft frames are, however, designed right on that limit, and that's the value we used in designing the battery box for Weber State's hybrid electric vehicle.

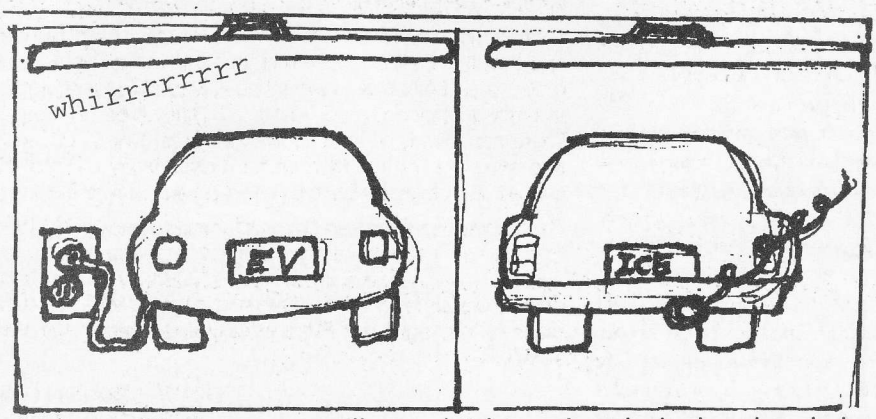
3) The unibody structure in a car is designed to progressively deform during a crash, so as to soak up crash energy in a controlled fashion. Design is thus very case-specific. I'm not particularly expert in all the nuances here, but have heard the (very rough) rule of thumb of 28 g's as an appropriate design level.

4) Seat belt mounts are designed for appropriate load levels, with a "standard" passenger mass of 80 kg (176 lbs) as a typical assumption. With appropriate tie-in structure to ALL of the rear seat seat belt mounts, converters of cars like Metros and Rabbits should be able to provide adequate restraint for 160 kg of battery pack with very little difficulty. It's the remaining battery/battery box mass that requires the bulk of the creativity! Integrity of the box itself is also an important (and often overlooked) concern. I hope this note is useful.

Dave Erb, Weber State University, Hybrid Electric Vehicle Faculty Advisor

Inside this issue

SHORT CIRCUITS BY SPARKZ



And now, Mr. Lave, you will spend 3 hours in a locked and sealed garage with a running vehicle. Which one will you choose?

Electric Mayflower (cont'd from pg 1)

Christopher and PJ Panatotacos, M.D. (in EAA shirts) show their Electric Mayflower.

Now cranky motors and blown head gaskets are all in the past and Panagotacos can easily keep up with freeway traffic, cruising the lanes at 70. Now he has a classic that is a practical vehicle and he doesn't even need the smog exemption! Two look brand new after major restoration."

Unlikely though it seems when one studies the aristocratic lines of this mini-Rolls, Triumph built the original Mayflower in the early 1950s to compete with the proletarian VW Beetle. Envisioning a flood of aristocratic but fuel-efficient cars overseas to the US, the British manufacturer dubbed their creation "Mayflower". Alas, the invasion foundered, sunk by the overstressed motor and the utilitarian preferences of American small-car buyers. Triumph built 37,000 Mayflowers from 1950 to 1953, then gave up in disgust at the colonials' obvious lack of taste —VWs swarmed into the US, but only only 1,000 Mayflowers ever landed.

Spurned by the States, Mayflowers ended up in Australia, New Zealand, Britain and other Commonwealth countries. An estimated 600 remain on the road worldwide. It is interesting to note that one of the popular aftermarket modifications for VWs is the addition of a Rolls-Royce snoot. Could that, perhaps, be an unconscious tribute to the Mayflower?

As shown by his choice of EVs, Dr. Panagotacos is a man of unusual interests. Known as a world-wide authority on hair transplantation, he is an individual whose dedication and concern for others has taken him to the top in his chosen field of dermatology. He collects African art and is involved in "Save the Pygmies", an organization dedicated to preserving the oldest living human culture.

The British Car Meet is the foremost British motorcar event in California. To have an EV take the top prize must have caused some interesting and perhaps radical attitude alterations in the crowd of car connoisseurs. Certainly an original way to spread the word. CE welcomes Dr. Panagotacos' 1953 electric Mayflower into the ranks of EV ambassadors to the public. Maybe we'll see more electric Mayflowers from the good doctor's stable. How bloody marvelous! —CB

For more information on the Mayflower,

Tech Specs

Donor car: 1953 Triumph Mayflower
Controller: Curtis 1221B
Charger: K and W BC-20 onboard
DC/DC: Converter - Sevcon
Curb weight : 3,000 lb

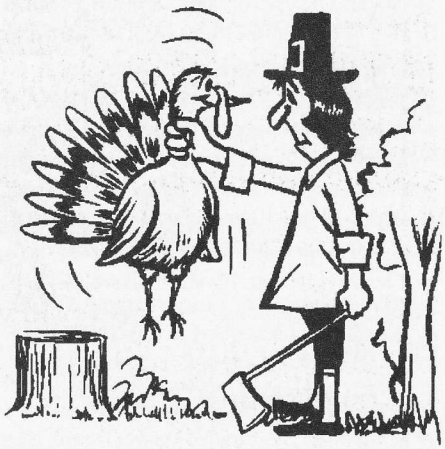
Slick New Media Blitz

by Dennis Merrit
email DC.SYSD30@TS3.TEALE.CA.GOV/
ham WB6UHQ @
KE6LW.#NOCA.CA.USA.NOAM

Have other parts of the country been blitzed by the American Automobile Manufacturers Association and anti-Zev radio smear campaign? It is a widely-layed spot involving an analogy between California's ZEV program and the invention and commercialization of the light bulb. They point out that the original inventor was unable to build a practical model. After the dialog, a commentator steps in and compares it to government's desire to legislate to EVs. The ad concludes by giving a 1-800-EVS1998 telephone number to call and advise your government of your desire to NOT have EVs legislated.

ReEVgards — DM

(Not, yet, but as soon as CE is done, I will. Maybe we can drown them out in a PRO-EV return blitz. Let the bums know we're onto 'em. Thanks for the info, Dennis! —CB



Count your blessings this Thanksgiving Day.

Increase Performance: Upgrade to144 Volts

by Ken Koch, KTA Services Inc. (Reprinted with permission from EVOSC News)

About 5 to 7 years ago the average on-road EV had a Prestolite or General Electric 20 HP (1-hr thermal rating) series motor, a Curtis-PMC, Russco or G. E. motor controller, and a 96-volt battery pack made up of 16 six-volt golf car batteries. Battery chargers were either Lester or home-brew. Typical performance consisted of a top speed of 65 or 70 mph, acceleration, 0-50 mph in 18-20 seconds. The working range was about 35-40 miles maximum. At the time, this performance was acceptable to most EVers. It was also the practical limit of the hardware. What's happened since then?

Thirsty for more power

The average on-road EV being built 3-4 years ago had either an 7-inch or 9-inch Advanced DC motor, a Curtis PMC 1221B-7401 controller and a K and W Engineering BC-20 charger. Pack voltage was 108, made up of 18 6-volt batteries. Typical performance: 75 mph top, 0-50 in 18-20 seconds with working range increased to 40-60 miles.

The average on-road EV being built 1-2 years ago, had either a 7-inch or 9-inch advanced DC motor, although most had the 9-inch. The Curtis-PMC 1221B-7401 was still the controller of choice, while the K and W BC-20 with LB-20 booster charged battery packs that typically reached 120 volts. Vehicles such as pickup trucks were the only ones that could stand up to the weight of 20 6-volt golf car batteries (1300 lbs). Others used 10 ea. 12-volt batteries. By now the word was finally out that 12-volt RV/marine types would not last beyond 3000 miles in an EV, so users turned to 10 ea. Trojan #5SHPs or U.S. Battery 1450s (850 lbs). Top speed now reached 80 mph, but range and acceleration depended on the type of battery used: 20 ea 6-volts yielded 40-65 miles max. with slower acceleration while the 5SHP's and 1450's gave 30-40 miles with better acceleration.

Performance = Acceleration

We can see a clear trend developing. New EV builders expected better performance while older EVs got upgraded with more batteries or lager motors. Of course, lead acid batteries didn't gain anything in energy density, so range was sacrificed to a higher top end speed if the system was driven to full capacity. Since 65 or 75 is plenty for most parts of the US, the insatiable thirst for performance mainly means improved acceleration.

What factors affect acceleration?

Vehicle weight and motor torque, which is directly proportional to motor current. Motor speed is directly proportional to motor voltage. So, acceleration can be improved primarily by lightening the vehicle and/or developing more torque by using a higher-current controller. Increased pack voltage lets a motor develop higher torque over a broader speed range as well as raising the top speed. increasing battery voltage improves acceleration — but only if no battery weight is added to the vehicle.

With the newly-available Curtis PMC 1231-8601 controller, higher motor current and pack voltage are now possible. The 1231c-8601 is rated at 96-144 volts with a 500 amp current limit. A vehicle that already has an Advanced DC 9-inch is well-positioned for an upgrade. Going from a 1221B-7401 to a 1231C-8601 increases max. torque from 86 ft. lb. to 113 ft. lb., an increase of 31% The Advanced DC 8-inch, rated at 120V can actually run at 144 — with caution. The 8-inch, with its highest RPM per volt characteristic, it runs the greatest risk of being oversped if unloaded. Never use it above 120 V without a rev-limiting device such as the K and W Engineering TD-100 Tach Drive Rev Limiter. Upgrading the 8-inch motor's max torque from 64 ft lb to 85 ft lb, an increase of 33 %.

What about the 144-volt battery pack?

With 24 ea. 6-volt golf car batteries (1560 lb.) would crush anything less than a mid-size pickup or minivan. Adding 2 more 12-volt batteries to a pack of 10 holds some promise, if there's room.

But the slickest 144-volt upgrade is by using Trojan Battery's new T-875. This 8-volt battery is rated at 165 A-hr at the 20 hr rate. It wieghs 63 lbs and is exactly the same size as a golf car battery. 18 ea. 8-volt batteries = 144 volts. Since many existing EVs have slots for 18 ea. 6 volt batteries, the natural upgrade is from 108 volts to 144 without modifications to battery trays. 20-battery EVs can downsize to 18 while shedding some weight. Most 16-battery EVs can upsize to 18 with only minor modifications.

Performance?

Top speed increases to 90 mph. Acceleration from 0-50 improves from 18-20 to 13-15 sec. Range? If the upgrade replaces 18 ea. Trojan T-105's or US Battery 2200s with 18 ea. Trojan T-875s, range should remain the same. The T-105s and 2200s both have an energy density of 31.4 watt-hrs/kg. The T-875 is almost identical at 30.7 watt-hrs/kg. To illustrate further, a typical 108-volt subcompact needs 125 amps x 108 volts = 13.5 kW to sustain 55 mph on the level. At 144V, 13.3 kW/144V = (approx.) 94 A. By examining battery discharge curves, we see that the T-105s and 2200s can sustain 125 A for about 60 min; the T-875s can sustain 94 A for about 55 minutes. 55 mph for 60 min. isabout 55 miles range. 55 mph for 55 min is about 51 miles range; virtually the same.

What about charging?

KTA is happy to report that the good old K and W Engineering BC-20 now has a new booster transformer unit that enables the BC-20 to charge 144V. The new transformer unit, model LB120/144 is a bolt-in replacement for the LB-20 line booster, which originally upped the BC20's capacity from 96 to 120V. The BC-20 will also need a different programming resistor. The LB120/144 has twice the power rating of the LB-20. From 120 V VAC lines of 15, 20, or 30 A, respectively, the charger-booster combo can deliver 8, 10, or 15 A into a 144 V pack. A 120 VAC 30 A receptacle can be tapped from half of a 240 clothes dryer or electric range plug. Use 10-gauge wire.

EVers owe a big thanks to Trojan for making the T-875 available to conversion hobbyists. It isn't available to golf-car battery distributors other than Club Car, Inc, for whom it was initially designed. Price per bat-

Technicorner (cont'd from pg 6)

tery is about $90 ea. from Wil-Power, F.O.B their warehouse, after the end of May 1995. Or check with the Trojan distributor on you locale. Other upgrade components are available from KTA Services. —KK

(Ken Koch is a member of the EAA Board of Directors and belongs to the Electric Vehicle Association of Southern California.)

Access
Wil-Power Battery, 1924 First St.,
San Fernando, CA 91340, 1-800/429-5797
Trojan Battery Company, 12380, Clark St.
Santa Fe Springs, CA 90670, 1-800/423-6569

KTA Services, Inc. 944 W. 21st St., Upland, CA 91784, 909/949-7914. Curtis-PMC #1231C-8601 —$1095. K and W #BC-20 — $ 575, #TC100 — $219. An 80-180 VDC meter, 500 amp fuse and 144 volt 'fuel' gauge are also available.

GM Impact Shows EV Potential

Excerpt from "California Focus", a column by Thomas D. Elias, from Santa Monica, CA. Appeared in the San Mateo Times, 9/2/94

First and last paragraphs

"The shape and feel of what CA's electric car mandate has wrought stands in pleasant and surprising contrast to the moaning of carmakers who didn't want to build anything really different from what they sell today."

"Whatever marketing tactics GM and the power companies work out, one thing is now very clear: electric cars can perform more than adequately and there is no reason to believe they won't quickly become a heavy-demand item."

We can't agree more! —CB

(Thanks to John Newell)

No-odor, no noise, no pollution...

Agencies Dedicate E-Buses

Yosemite National Park , Calif., Sept. 22 — A dedication ceremony for two new electric-powered shuttle buses was jointly hosted today at the Valley Visitor Center in Yosemite National Park by the National Park Service, the California Energy Commission, the California Department of Transportation (Caltrans), Pacific Gas and Electric Company (PG&E), and Yosemite Concession Services Corporation.

Master of ceremonies was Energy Commission Chairman Charles Imbrecht, and the keynote speaker was U. S. Department of the Interior Deputy Secretary John Garamendi. Other speakers included Yosemite's Superintendent B. J. Griffin, CalEPA Secretary Jim Strock, Caltrans District 6 Planning Division Chief D. Alan McCuen, PG&E Yosemite Division Manager Steve Rath and Yosemite Concession Services President Gary Fraker.

"This project is a perfect example of government and the private sector working together to accomplish major goals," said Energy Commission Chairman Charles R. Imbrecht. "Hopefully, some of the millions of Yosemite visitors who will ride these buses will convince decision-makers in their home towns to use electric buses, and they'll choose California electric bus makers — like APS Systems and Specialty Vehicles — to provide those buses."

Hear the Waterfalls

"No odors, no noise, no pollution ... no loss of jobs, and a new industry for California," Deputy Secretary of the Interior John Caramendi said as he dedicated the two new electric buses that will be used to move visitors around the floor of the world's most famous valley. "President Clinton said that protecting the environment was good for jobs and this proves it. These buses are manufactured in California and I believe a new industry will grow up here while we use this technology to clean up our nation's air."

"Visitors are not blasted by noise and fumes when these vehicles pass by. You will actually hear the waterfalls," Garamendi continued. "I'd like to see electric buses on the Mall in Washington and in every national park where auto and bus traffic is a problem."

The electric buses are a demonstration project involving new technology in air pollution control and alternative fuel vehicles. The buses will be used as shuttles to carry park visitors throughout Yosemite Valley, thereby reducing tailpipe emissions.

After an initial testing period, the National Park Service may order mor e electric buses for Yosemite and other national parks. Yosemite hopes t o eventually replace older diesel fuel buses with clean, quiet electric shuttles.

The electric buses at Yosemite will help acquire needed data regarding t he operation of electric vehicles in public and private fleets. The purpose is to evaluate electric vehicle technologies in real life applications and to assist in the determination of electric vehicle infrastructure needs. The buses will also be used to gather needed information about wintertime performance in snow and, below-freezing temperatures.

"This project is an excellent opportunity for us to gather more information about the recharging needs of electric vehicles under a wide variety of conditions," said Steve Rath, PG&E Yosemite Division Manager. "As electric vehicles become more a part of everyday life for our customers, PG&E will use this information to extend quality service to them so that recharging is convenient, safe and mak es the most efficient use of electricity."

Diesel buses in Yosemite currently travel three routes and carry more th an 3.5 million people annually. The Valley Floor route — where the elec tric buses will be used — receives the most vehicle demand and passenger use (93.9 percent), with more buses being dispatched into service during seasonal peak periods.

"Transportation is a vital issue in Yosemite," said Superintendent B.J. Griffin. "The addition of these two non-polluting buses to our fleet is a significant step forward in protecting and preserving Yosemite's natural resources, reducing noise and improving air quality for the park, as well as for the state of California"

Public/Private Partnership

In 1992, agreements were reached between Yosemite National Park, PG&E and the Energy Commission for the purchase of a five- passenger Electric G-Van for use in sup-

(cont'd on pg 15)

Rally Time in NEW MEXICO

by Joan Wolf

Albuquerque Chapter EAA members were up and running on August 26. As hosts for the Albuquerque Clean Cities Rally For the Environment, members scrambled to erect awnings, set up tables, post signs, and rope off a Ride and Drive area by the 9 a.m. starting time.

The four months of planning and day of the event hustle paid off. "The Rally was a marvelous event", said Mary Ford of the New Mexico Energy Department. Attendance was estimated at 300, an excellent turnout for a first-time event. Thirty-five alternative fuel vehicles (AFVs) were displayed and demonstrated: 9 electric, 10 propane, and 16 compressed natural gas (CNG) vehicles. Two solar cars, ZAP electric bicycles, and several exhibitors rounded out the displays.

The purpose of the Rally was to raise awareness about the availability and benefits of non- gasoline vehicles. Organizers also sought to strengthen the coalition of AFV supporters in New Mexico. Funding was provided by the "fuel neutral" U.S. Department of Energy Clean Cities program and the NM Energy Department.

Fifteen vehicles competed in a Scavenger Hunt, travelling off-the-beaten-path in Albuquerque. Drivers and navigators had to keep their minds and eyes open in order to follow the route. One husband-wife team suggested the name "Divorce Rally."

The winner, Tino Pestalozzi from Santa Fe, drove his 1983 electric Ford Ranger and was navigated by EAA member Marlene Brown. Second place went to a Gas Company of NM employee driving a 1994 CNG Ford Taurus. Third place was claimed by Kent Salazar, driver of the City of Albuquerque's electric 1982 S-10.

Dignitaries included New Mexico Lt. Gov. Walter Bradley and US DOE official William Jernigan. Both men appreciated the large showing of AFVs and the networking opportunities for AFV supporters.

Out-of-state participants were EAA Board Member Mike Slominski from San Mateo CA and Gene Cosmano from Phoenix. Gene displayed his propane-powered pickup and drove his electric Spectrum in the Scavenger Hunt. Other EV entrants were from Las Cruces, Farmington, Santa Fe, and Albuquerque. Dick Bassett even managed to bring an Electrica from Sandia National Labs.

Tino Pestalozzi shown above in his 1983 Electric Ford Ranger was1st Place winner in Albuquerque's Rally for the Environment on August 26, 1995.

This fun and informative Rally was the brainchild of Albuquerque EAA President Dale Riddle. Dale comments, "I've been to so many EVents in California, Arizona, and other places. It was my dream to have a gathering here in Albuquerque." Dale and other organizers did such an outstanding job that his dream may recur annually.

Joan Wolf works in the City of Albuquerque's Alternative Fuels Program and is a member of Albuquerque EAA, ph. (505) 768-5300.

Albuquerque Clean Cities Rally for the Environment

Parcipating EV	Name	Company/Organization
1987 Ford Escort	Paul Basore	Albuquerque EAA
1982 Jet Electrica	Dick Bassett	Sandia Laboratories
1989 Chevy Spectrum	Gene Cosmano	Phoenix Arizona EAA
1983 Chevy S-10 Truck	Matt Eldridge	Albuquerque EAA
1982 Toyota Pickup	Guy Floyd	Las Cruces Electric Car Club
1983 Ford Ranger	Tino Pestalozzi	Auto Logics, Inc.
1982 Ford Fairmont	Dale Riddle	Current Technology
1972 CommutaCar	Dale Riddle	Current Technology
1984 Izuzu Pickup	Dale Riddle	Current Technology
1985 Mitsubishi P/U	Marshall Sausedo	Farmington High School
1982 Chevy S-10 P/U	Joan Wolf	City of Albuquerque
Sunrayce Solar Car	Ian Aeby	No. New Mexico Comm. College
Sunrayce Solar Car	Fabian Lopez	Albuquerque TVA

Q: Where Can I Get Technical Answers?
A: Right Here. Ask Mike Brown.

EV Q&A. You have questions. Each month, Mike will answer them here in Current EVents. Questions not printed will receive personal replies. Want to know how to do something? Or why? Or why not to do something? Ask Mike.

Project Review. If you would like an in-depth review of your conversion project, order the Electro Automotive catalog and use the Project Review Service. Fill out the form with your info and questions, and return it with $60.00. You will receive a detailed analysis, with recommended solutions to any problems, and a $60.00 credit toward purchases in the next 60 days.

Custom Design Work. Need help with battery rack and box designs? Using his Computer Assisted Design & Drafting system, Mike Brown can design an efficient battery layout and give you professional dimensioned prints for your welder. Rates vary by project.

Free Tech Support With Kit Purchase. If you buy an Electro Automotive kit, Mike Brown is available to answer your questions and guide you through the conversion. In addition, you receive up to 4 hours of custom design work on your battery pack at no extra charge.

Send your questions to Mike Brown's EV Q&A, POB 1113, Felton, CA 95018 or fax (408) 429-1907. Include address for reply. Mike Brown has 28 years of professional automotive experience, & 16 years of professional conversion experience. His book, "Convert It", is available for $30.00 postpaid in the U.S. & Canada.

MIKE BROWN'S EV Q&A

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Electric Vehicles of America, Inc.

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(508) 897-9393 Fax (508) 897-6740

Committed to Quality and Safety

Chevy S10 conversion by EVA

23rd Electric Auto Rally

Silicon Valley Rally

by Bob Murray

Silicon Valley Chapter's 23rd Electric Auto Rally attracted over thirty electric vehicles and several hundred spectators, who came to see and ride. Seventeen cars were entered in the acceleration and distance-driven contests, while the balance were on display by owners and dealers. The spectators certainly had a wide variety of cars to consider, ranging in age from Chuck Olson's '61 Saab to Rich Hilleman's new Porsche Spyder replica, both in the rally, and Mary Ann Chapman's (EcoElectric) S-10 "Desert Lightning" pickup truck, on display.

The Winner's Circle

First prize was won in the rally by Bob Westman who drove his 850 Fiat Spyder 98.4 miles. In second place, Rich Hilleman's MendoMotive Porsche Spyder with 92.1 miles. Third place went to Clare Bell with 82.0 miles in her ElectroAutomotive VoltsPorsche 914. The fastest 100 yard dash, 9.43. was achieved by Bob Schneeveis in his Fiat X1-9.A complete list of rally participants, car numbers, miles run and dash times is shown below.

Seven of the participants elected to drive their cars to the rally and were given credit for the total miles driven on one charge. The rally committee favors this rule because it does put electric cars on the road and in public view. However, it does mean that a number of cars needed recharging immediatley after the rally.

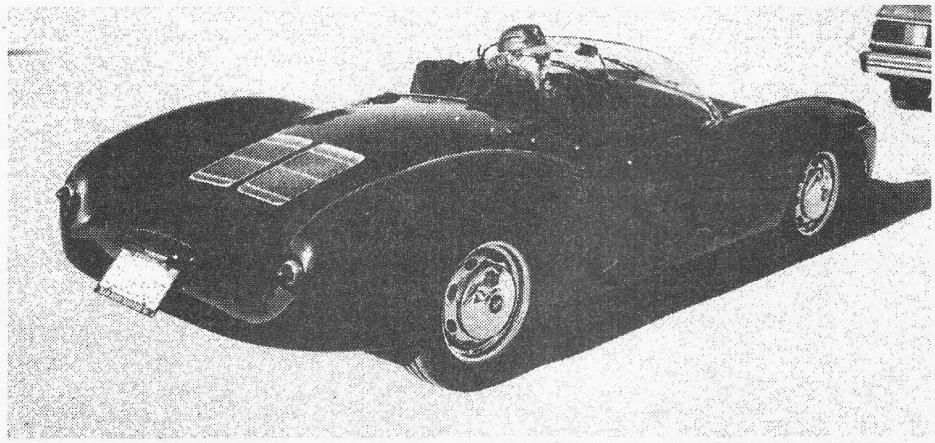
Special thanks go to Bob Wheeler for supplying the 10 KW equipment needed.

Thanks ...

It takes a lot of workers to run a rally, beginning months before the actual day. Leading the effort was Lee Hemstreet, who hosted and directed the committee meetings, prepared much of the written publicity and mailings, and did many other jobs. Pat Hardage dealt with the city of Sunnyvale, ordered the banner, registered the drivers and even provided the HQ vehicle. Chuck Olson ordered the plaques and worked on publicity. Bob Murray and Dennis Buhtz handled setup and cleanup, respectivel. Doug Spotten was

cont'd on page 13

1st place winner by Fiat. Bob Westman's 850 Spyder convertible - 98 miles.



Along came another Spyder – 2nd place winner Rich Hillerman and his Mendo Motive Posche Spyder replica.

914 Porsche Party. Front and back Porsches. Third place winner, Electro Automotive Volts Porsche, "Black Magic" nudges Don Gillis' spiffed up 914 sprinter.

1995 EAA Rally Winners

* First Prize - Bob Westman - Fiat 850 Spyder
* 2nd Prize - Rich Hilleman - Porsche Spyder replica
* 3rd Prize - Clare Bell - Porsche 914 conversion

Results - 100 yard dash (conducted by Pete Mokris)

Car #	Name	Car Description	Time in seconds			
			Run 1	Run 2	Run 3	Best Time
1	Beckett, Will	Chevy S-10 Blazer	11.80	11.94	12.04	11.80
2	Barnes, Peter	VW Rabbit pickup	11.14	10.89	10.65	10.65
3	Westman, Bob	Fiat 850 convert	10.3	10.27	10.47	10.27
4	Kuehl	Fiero, white	12.77	14.74	14.00	12.77
5	Hemstreet, Lee	VW Bug,white	11.10			11.10
6	Olson, Chuck	Saab, white	13.01	13.10	12.85	12.85
7	Gillis, Don	Porsche 914, blue	10.97	11.12	11.34	10.97
8	Wing, Bob	MG-A convert, red	12.83	11.87	12.10	11.87
9	Nalbandian, W	VW Rabbit pickup	10.84	10.90	10.79	10.79
11	Schneeveis, R	Fiat X1-9, yellow	9.43	11.37	12.28	9.43
12	Bell, Paul	Jet Escort, cherry	12.17			12.17
13	Bell, Clare	Porsche 914, black	10.17	11.42	10.60	10.17
15	Newell, John	Jet Escort, brown	12.87			12.87
16	Cornell, Scott	Karmann Ghia, red	10.48	9.97	10.54	9.97
17	Brown, Mike	Aztec, burgundy	10.58	10.15	10.10	10.10
18	R. Hilleman	Porsche Spyder	11.66	10.15	10.10	10.10

Rally Results

Car#	Name	Miles to Rally	Total Miles	100 Yd Dash
3	Bob Westman	0	98.4	10.27
18	Rich Hilleman	6	92.1	10.10
13	Clare Bell	0	82.0	10.17
1	Will Beckett	7.4	77.1	11.8
6	Chuck Olson	0	73.8	12.85
4	Wm Kuehl	15	72.4	12.77
12	Paul Bell	10.2	67.6	12.17
2	Peter Barnes	45	65.5	10.65
5	Lee Hemstreet	11	60.2	11.10
9	Bill Nalbandian	0	57.4	10.79
11	Bob Schneeveis	0	57.4	9.43
14	ElectroAuto. Rabbit	0	49.2	
17	Mike Brown	0	45.1	9.87
7	Don Gillis	0	36.9	10.97
15	John Newell	18	22.1	12.87
9	Bob Wing	0	16.4	11.87
17	Scott Cornell	0	12.3	9.97

EAA Rally - Media Blitz!

by Bruce Parmenter

Preparations for this EVent had been intense, as instead they had been in the past, and a few of us associated EAA Chapter members jumped in to make the EVent one step better! With Peter Barnes of the EAA SF Chapter doing the majority of the outlining, and layout, and with Will Beckett and myself assisting with filler, and task handling, we as a group, were able to contact the media (making our EVent widely known), and being ready with press kits for the media that attended. My thanks to Peter and Will :->.

Pre-EVent Jitters

With Mary Ann Chapman already on her way to tour up California, (hitting as many EAA/EV Associations as she could, to see her new 'Desert Lightning' EV before it was to be sold to the City of Watsonville), I had secured a place to store her EV for a few days while she was here after the Silicon Valley Rally EVent, here at the Sunnyvale HP Site (since this doesn't happen to often, our security was quite cool about the idea. My thanks to Larry Marconi :->).

The jitters were seeping in on Friday as the time grew nearer to the day of the EVent (Sat 9/16). A tired Mary Ann voice was on the phone, as she had stopped from her onward trip from Sacramento, to my work site (it's a long drive, towing a trailer with a MaxiVan). Mary Ann rolled in, and we parked it ready to go for Saturday. We both saying our good-night's as we needed to recharge for the EVent on the morrow.

A bright fresh day, had me prepared with a EV Blazer primed with EV literature I would hand out at the Rally, and waiting for Mary Ann to show so we could go together to the EVent. We were about on time, and positioned 'Desert Lightning' into the area for the higher caliber EV conversions were to be displayed. Electro Automotive's booth was up and ready, as Mike Brown was readying his EV for the rally run, and Shari Prange was doing the finishing touches of setting up the booth.

I got busy setting up my literature, and securing what details I could on the Event tasks I was to handle. As I was networking (which you do a lot of at these EVents), our local newspaper had printed an item about that day's EVent (my media blitz to all the TV, Radio, and newspapers, paid off. My thanks for the use of Lee Hemstreet's media source listing to start with).I downloaded it:

Electric Car Rally in Sunnyvale

Electric car rally today in Sunnyvale The Silicon Valley Chapter of the Electric Auto Association will host its 23rd annual Electric Car Rally from 9:30 a.m. to 4 p.m. today in Sunnyvale. The day-long event will feature about 20 electric cars, and visitors will have a chance to talk to electric-car owners, builders and dealers. Rally participants will offer free rides to visitors around the 4.2-mile rally route, and a rally will be staged to see which car goes farthest on a single charge. The event takes place at 1184 N. Mathilda Ave., between Fifth and Sixth avenues. By law, beginning in 1998, 2 percent of the cars sold in California must be zero-emission vehicles.

From Mercury News Staff and Wire Reports. Published 9/16/95 in the San Jose Mercury News.

As it had turned out, there were many that had attended that had only known of the EVent from this media source.

But all were happy when the rally run began as the public were lined up to get rides in all the EVents running (all types, trucks, sedans, sports cars like Clare Bell's Porsche, and Will Beckett's Blazer.

Will asked me if I was to going to run as well, but we both knew he question was more of a tease since he had the better Blazer with the better range. I decided to let Will get the Rally Glory, and I would be there for the public as a static display.

As the day went on, everyone was commenting of how many notable people of the EV List were at attendance (it was nice to put a face with the POSTs :->).

Thanks to all the came it was good to meet you! We did have two media source that came to do a report.

Ready for Reporters

Channel 11 TV was video taping many EVs, and we were attempting to usher them to make sure they got to see all the converters that were there (EcoElectric, Electro Automotive, and a private owner of one of Mendo Motive's Porsche Spyder replicas. Don Bright must have been busy, as he was there to show off the Tropica or the ZAP bikes, but we were ready with both front showcase spots and power for the ZAP bikes to give rides. Too bad :-\ ).

Blitzers and Blazer. Bruce Paramenter and Will Beckett discuss media-handling. Left - Bruce's literature-equipped Blazer.

Teamwork (cont'd from pg 12)

Later the San Jose Mercury News had sent a reporter to do a piece. Again, we loaded her up with more EV info than she probably ever thought there was out there. But, I was hoping for a good spread of EV company coverage of all the EVs that were there that day, and recognition of all the daily use privately owned EVs in support of the EV cause.

I didn't hear what had been broadcast on Channel 11 TV, but in the following days, the San Jose Mercury News did put out an article. Too bad the media, picks and chooses what they want, rather than delivering all the information (selling papers Is there business):

("Drivers urged to go electric — rally plugs virtues of eco-friendly car by Julie A. Galvan, Mercury News Staff Writer).

Public attendance was quite good, as the word of the EVent was given out by the media (I also understand from my partner Paul, that many radio stations were announcing the EVent as well), and all the fliers that had been placed by EAA members (A special Thanks to Will Beckett, for following up and pursuing his media contacts).

Bob Schneeveis had brought the 'Snow White" race car to the EVent, which stole the show for the media, when he laid rubber in the display area, (Channel 11 KNTV VidCamming it all the while. I guess the media is attracted to FLASH, not facts.

With the public munching on the food and drink at the SF Chapter's Refreshment booth, looking over of the EVs on static display, asking questions between bites, and getting rides from the EVs in the Rally, making the 4.5 mile city speed loop around Moffett Industrial Park, pretty much most aspects of the EV experience were being covered. A pleasant time for all, as weather was just right for this EVent.

Next Year

Lee Hemstreet says, "Watch out for me next year. I'll have new batteries in my Hawaiian racing turtle." If the winner had been determined by passenger-miles, Will Beckett's Blazer EV would have hauled off the prize. Each time around, he hauled 5-7 folks.

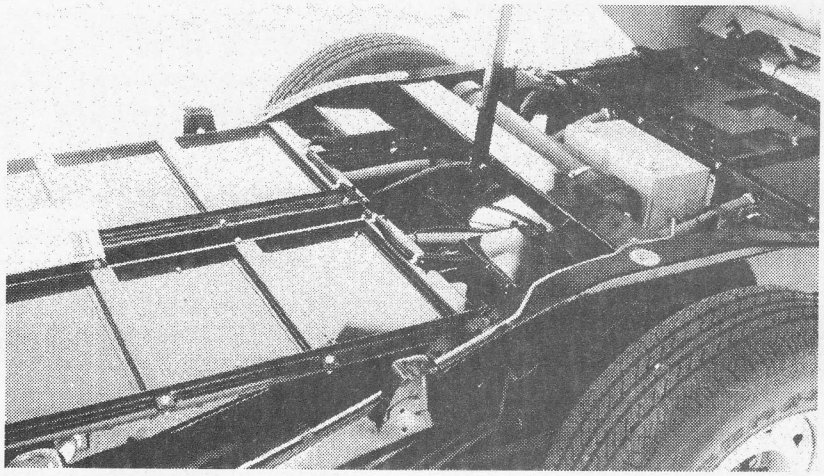
Silicon Valley Rally (cont'd from pg 10)

chief judge and Alan Downs acted as rally master. Pete Mokris ran the 100 yard acceleration test. Thanks to the radio hams George Hopkins (KF6GL) and Tom Scherf (K6JBR), we had commuications and thanks to members from Peninsula (SF) chapter for the food booth.

One of the hoped-for-results from a rally is increased public awareness of the electric option for transportation. To get this increased awareness, we need publicity both before and during the EVent. Prior publicity is especially important when the rally is located where there is little "drop-in" attendance. Evidently we did a fair job of publicity, based on the attendance. Thanks also to Will Beckett, Bruce Parmenter and Peter Barnes for organizing and conducting the press conference during the noon break. The amount of TV coverage was disappointing, but publicity has a continuing effect.

Everyone had a good time, enjoyed the perfect weather, breathed less exhaust than usual and learned something. Good work, gang! — BM

(Publicity IS having a continued effect. Shortly after the Rally, KGO TV Channel 7 got in contact with several EAA members. They want to interview EV commuters. Really good job, gang! —CB)



In the words of EcoElectric's John Witt, "Them batteries ain't-a-going nowhere.

Desert Lightning - ready to strike Eco-Electric's extraordinarily well-built S-10 conversion.

Do It Yourself

8-Volters Power Porsche

by Tony Cygan, Sacramento Chapter

Many EVers have wondered if there is a middle road between the 6-volts (high capacity and durable, but heavy) and the 12 volt lightweights (more pep, but easily drained and easier to damage). Well, now there is. Trojan released their 8-volt T-875s just in time for me to use them in my recent 1973 Porsche 914 conversion.

Year-Long Project

The project started in September 1994 and finished in September 1995, working the odd weekends. It involved not only electrifying the car itself, but upgrading many of the mechanical components. My baby went on the road 9/8/95 with a pack voltage of 120 V from fifteen 8-volt Trojans. At 63 lbs apiece, that's 945 lbs. When I finish shaking the car down, that will go up to 18 batteries at 144 volts with a pack weight of 1134 lbs.

For comparison, a 120 V pack of 6-volt batteries is roughly 1200-1300 lbs and can give driving distances of 80-90 miles in a 914 conversion. A 12-volt pack can range from 500-800 depending on the type, and give driving distance of 25-50 miles. The new 8-volt cells reduce some weight and increase performance while extending range — a nice compromise.

Driveability

At present, 95% of my driving is less than 35 miles per day (my commute distance is 7 miles one way). Since my odometer broke at 110,00 miles, I don't know my actual miles per charge, but I've gone around 35 miles with no noticeable change in driveability, and expect to get around 50-60 miles of normal driving range (I have a lead foot, pun intended) when I'm at my expected voltage of 144. As of 9/29/95, the Porsche has 300+ electric miles. I plan to use it as my only vehicle in future.

The 914 is my first EV and the first conversion I've done alone. Since I had no previous EV conversion experience before tackling this, I decided to attend an EV conversion course that was given by Electro Automotive and the good folks at Solar Energy International in Carbondale, Colorado. We used one of EA's Rabbit kits and got the car on the road in one week. I then supplemented my knowledge by assisting Bob Rickard and Roderick Wild of Wilde EVolutions in getting their cars ready for the APS Phoenix Electrics last March. We upgraded their Mazda RX-7 and Four Taurus, then built, from the ground up, a 1935 Ford Roadster kit car which was designed to be electric. The Wilde EVolutions roadster was a dream to work on compared to the usual process of converting a car.

> I encourage anyone out there who is thinking of doing a conversion to just go ahead and do it.

Opportunity Charging

Now that I'm driving my Porsche 914 EV, I'm trying to locate and use many of the EV charge spots that are located around the Sacramento area. Our local utility (Sacramento Municipal Utility District or SMUD)is a leader in promoting Evs. Putting in opportunity charging spots is a big goal for them. The City of Sacramento even lets EVs park and charge for free in the city garages.

I encourage anyone out there who is thinking of doing a conversion to just go ahead and do it. Take a class, read some of the recent excellent books, and talk to people who have cars. (EAA chapters are good places to hook up with EV owners!)

Doing a conversion isn't as hard as it may seem. There are some headaches, such as designing and building the battery boxes, but overall, it is a fairly straightforward task. I didn't have a lot of vehicle experience to draw on, and none with Evs before deciding to do this project, but I'm certainly glad I did. What you can't figure out, someone else can. If you feel confident about doing everything yourself, do what you can and farm the other stuff out. It will cost some additional money, but better safe than sorry. And better on the road driving electric than being a gas-hog and polluting our air. —TC

(Good job Tony! And not just because its a 914. Your work with the new Trojan 8-volters offers EVers an alternative to the traditional 6-volt lunkers without spending a ton of money. Keep in touch.) — CE would like to know how the new Trojans pan out. And could you or someone in Sacramento send a city map with charging station sites marked out? I'll run it in CE. Both out-of-town EVers as well as the locals would find that mighty handy. With SMUD and the very active members in Sacramento Chapter,

Get juiced here! Charging station by Bob Wheeler, placard by Sacramento Chapter.

Buses (cont'd from pg 7)

port of the Yosemite Transportation System. The El ectric G-Van was purchased and began operation in the spring of 1993.

In 1993, Caltrans joined the "partnership" with the other agencies and the joint commission began planning the acquisition of three to four medium duty electric buses which would become part of the Yosemite Transportation System. "It's time to apply alternative energy sources to transportation in air quality sensitive areas like here in the Yosemite Valley," said Caltrans District 6 Planning Division Chief, D. Alan McCuen.

Specialty Vehicle, of Downey, California, built a 30-foot bus, which seats 25 people and has additional space for 10 people to stand. APS Systems, of Oxnard, California, built a 35-foot bus, which seats 35 passengers with additional space for 15 people to stand.

"Yosemite Concession Services is delighted to have an opportunity to participate in this experiment," said Gary Fraker, President, Yosemite Conc essions Services Corporation. "We use electric vehicles successfully for routine company business and believe they prove daily that electric transportation is a viable alternative."

In addition to the two electric buses and the electric G-Van, Yosemite Concession Services also has two electric mail/delivery trucks and two electric pickups in use. Electric vehicles have zero emissions. Regulation s by the California Air Resources Board will require that two percent of vehicles offered for sale by auto companies in 1998 be zero emission vehicles. In the year 2003, the req uirement will be increased to ten percent. Electric vehicles are seen as a way to meet state and federal air quality standards and to help diversify transportation fuel supplies.

"Through the leadership of Governor Wilson, California is blazing the trail for innovations in clean air transportation — including zero-emitting vehicles such as those which will quietly carry visitors through the valley floor of one of the world's great natural cathedrals," Secretary for Environmental Protection James M.Strock said.

For more information contact:

Lisa Dapprich of the National Park Service, 209-372-0662

Karen Poch of Caltrans, 209-488-4001

Bob Aldrich of the California Energy Commission, 916-654-4989 Internet E-mail: boba@energy.ca.gov

Please visit our Internet Sites.Web Site:http://www.energy.ca.gov/energy/homepage.htmlGopher:gopher://energy.ca.gov

EAA welcome the newest EAA Chapter — North Texas!

North Texas - New EAA Chapter

by Charles K Wilson

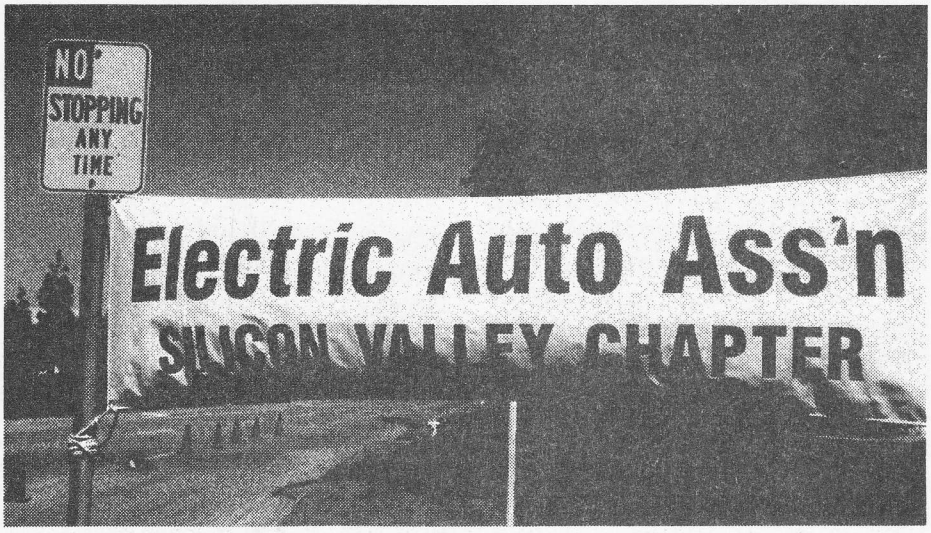
We have now organized the North Texas Electric Auto Association. Our first meeting was held on Thursday September 28th. We had 14 people attending our initial meeting, The following persons were elected as officers:

President: Charles Wilson – 214-393-0719 E-Mail CNCN66A@prodigy.com
Vice-President: Jon Eidson E-Mail eidson,&Unix4.is.tcu.edu
Secretary/Treasurer: Richard Carnes E-Mail Rbcarnes@AOL,com

Chapter meetings will be held bimonthly on the fourth Thursday of the month in odd-numbered months. Among the items under consideration will be a chapter newsletter, a press release announcing the chapter, a permanent meeting place, an Internet listserver, and corporate contact & sponsorship. Our next meeting is scheduled for November 16th.

Charley Wilson

(Thanks also to Bruce Brooks and Bruce Parmenter)



NO STOPPING ANY TIME! Electric Auto Association - Silicon Valley Chapter!

ZEV Info Sharing Team - Fax List

The Planning and Conservation League (who sent out ZEV Activist Network inserts in a previous CE issue) has put together an information sharing team to counter the anti-ZEV disinformation blitz. The PCL contact is Jamie Phillips, 916/444-8726, fax 916/448-1789. A list of other team member is given below.

Their latest target is an-about to be released study from the Rand Corporation. They advise pro-ZEV activists how most effectively counter the effect of such studies in the media

RAND Study — time to send out a "study-a-month" caution to your press contacts, encouraging them to check with other options. Here are some points to make when contacting media.

The following points should be emphasized to your media contacts with regard to the RAND study:

Be aware that there is going to be a flood of new studies released this month. Review these with caution. Is the study credible or is it rehashing previously discredited data/information. Is the information pertinent to the present debate on EVs or ared herry, deflecting attention from the real issues.

Look to see who paid for the information to be produced. Don't automatically believe what you read is unbiased. Chances are that whoever is paying for the study is influencing the final product. This makes credibility questionable.

Check other sources for additional/competing information/opinions. Don't rely on a single source for your information. There are other sides to an issue. Check/use as many diverse sources as possible for balanced analysis of studies.

We have people who can respond to media inquiries regarding the Rand study and others. Call us for information.

We have people who can respond to media inquiries regarding the Rand study and others. Contact us for information.

ZEV Info-Sharing Team - Fax List

- Coalition for Clean Air - Linda Wade 310/260-4474, Tim Carmichael 310/452-1420
- SMUD
- Winston Ashizawa 916/732-8862 - Michael Wirsch 916/ 732-6839, D. Udris, S. McCorkle 916/732-8185
- LA Dept of Water and Power - Tom Doughty, C. Zidonis 213/367-0210, Mindy Berman 213/367-1434
- The Gas Company - George Minter 213/244-4997
- Pacific Gas and Electric - Bill Sessa 916/446-7315
- CALSTART - Mike Gage, Bill Van Amburg 818/565-5610
- Project California - John Steams 714/442-7831, 408/971-7355, John Griffin 614-224-3350
- San Diego Gas and Electric - Howard Levin 619/654-1117, Tom Murhane, Ed van Herik 619/698-2792
- Cal JCA - Megan Taylor 916/731-5864
- Southern California Edison - Tom Higgins 818/302-6262, W. James, M. Savage 818/302-1328, C. Basham Tommy Ross 916/441-4047
- Environmental Coalition - Maureen Anderson 415/546-5196
- ZEV Environmental Coalition - Joe Caves 916/1518
- Union of Concerned Scientists - Michelle Robinson 510/843-3786
- Planning and Conservation League - Jamie Phillips, Gary Patton 916/448-1789
- Amerigon, Inc. - A. Liberman 818/932-1220
- California League of Conservation Voters - Bill Waller 415/896-5880, Candace Inagl, David Allgood 310/441-1585
- National Resource Defense Council - Veronica Kun 213-934-1210
- Laufer Assoc./Proj. California - Jessica Laufer, S. Jackson 310/826-8441
- Cal ETC - Dave Modiseth, Cece Martin 916/552-7076
- White and Associates - John White 916/447-2940
- American Lung Association - Paul Knepprath 916/4428585

Anti ZEV Campaign Backfires in Santa Cruz

Four Santa Cruz Supervisors received so many mailings from the anti-ZEV campaign that they passed a pro-ZEV resolution.

Board Chair Fred Keeley of the 5th District, and three other Supervisors became annoyed because they were receiving 2-3 anti ZEV-mailings a week from the California Manufacturers Association. In response, they passed Resolution 367-95, "In Support of the California Air Resources Board Mandate for Zero Emission Vehicles" Mandate". Supervisor Mardi Wormhoudt of the 3rd District motioned to propose the resolution. Supervisors voting for the resolution were 1st District, Janet K. Beautz, 2nd District, Walter J. Symons and 3rd, Mardi Wormhaoudt.

Members of the electric vehicle community are requested to write short letters in support of the Santa Cruz action and fax them to 408/454-3262 (Board of Supervisors fax line). Or telephone 408/454-2200. We need to reward and reinforce the Santa Cruz Supervisors for their courageous and enlightened stand. And encourage other county boards to pass similar resolutions. Wouldn't it be neat if there was a California-wide grassroots pro-ZEV support campaign at the county supervisor level?

The text of the resolution follows:

Before The Board of Supervisors Of the County of Santa Cruz, State of California

Resolution No 367-95

On the motion of Supervisor Wormhoudt, duly seconded by Supervisor Belgard the following resolution is adopted:

Resolution in Support of the California Air Resources Board Mandate for Zero Emission Vehicles

WHEREAS, every urban area is struggling to meet federal Clean Air Act standards and frequently fails to meet these standards; and

WHEREAS, over 75 percent of air pollution is caused by petroleum burning vehicles; and

WHEREAS, the County of Santa Cruz experiences ozone levels just below the State standard each summer; and

WHEREAS, oil is a finite resource which will be exhausted in 40 years at current levels of consumption and 99 percent of California's transportation is fueled by oil; and

WHEREAS, in an attempt to reduce air pollution caused by the burning of fossil fuels, the California Air Resources Board has mandated that the 2 percent of all vehicles sold in California be zero emission vehicles by the year 1998; and

WHEREAS, a concerted effort has been made by the petroleum and auto industry to fight the mandate by disseminating information that is untrue and misleading; and

WHEREAS, California's energy policy—supported and signed by Governor Pete Wilson—clearly states that transportation alternatives, i.e. fuels, vehicle efficiency technology and modes, be "aggressively pursued"; and

WHEREAS, research and development and consequent production of zero emission vehicles will createand already is creating high-tech, high wage jobs needed by the State of California and its people; and

WHEREAS, the State of California has a unique opportunity to lead the nation toward clean transportation technology, reduced air pollution and lowering its dependence on a finite resource, while at the same time capturing the economic opportunities that arise from new technology; and

WHEREAS, increased use of electric vehicles reduces the threat of offshore oil exploration and development, thus providing additional protections to the Monterey Bay National Marine Sanctuary, and encourages the development of non-polluting and renewable energy sources.

NOW, THEREFORE, BE IT RESOLVED that the Santa Cruz County Board of Supervisors hereby supports and endorses a zero emission mandate and encourages the California Air Resources Board to stand by its 2 percent mandate.

BE IT FURTHER RESOLVED that the Santa Cruz County Board of Supervisors strongly urges the Governor of the State of California, Pete Wilson, to support the California Air Resources Board in said determination.

PASSED AND ADOPTED by the Board of Supervisors of the County of Santa Cruz, State of California, this 19th day of September, 1995, by the following vote:

Ayes: SUPERVISORS Beautz, Symons, Wormhoudt and Keeley

Noes: SUPERVISORS Belgard Absent: SUPERVISORS None

(signed) Fred Keely, Chair, Board of Supervisors

DISTRIBUTION:
California Air Resources Board
Governor Pete Wilson
Mendocino Country Board of Supervisors
Senator Henry Mello
Assembly Member Bruce McPherson
Assembly Member Peter Frusetta

(Entered as received from the clerk of the Board. Any typos are mine. - CB)

Environmental Information Network

News In Brief . . .

Compiled by Ruth Shipley

News in Brief... is compiled by Ruth M. Shipley from information provided by Environmental Information Networks. If reprinted, please credit CE and Ruth Shipley.

Boston Testers Like Solectria EVs

Boston commuters participating in the Massachusetts EV Demonstration Program have rated EVs manufactured by Solectria very highly, according to The Massachusetts Division of Energy. Drivers consistently rated the cars an 8 out of a maximum 10 points in monthly surveys. They often cited "ease of operation" and "high reliability" as benefits of the vehicles. Many of the drivers have renewed their leases for a second year. The cars have a top speed of 72 mph, an average range of about 40 miles and a cabin pre-heat system that turns the car's heater on 15 to 20 minutes before the operator arrives at the vehicle
(SOLECTRIA RELEASE: 8/30)

NMH Batteries Not Ready

The widespread use of nickel-metal hydride batteries is still several years away, according to the 1994 annual report from the U.S. Department of Energy (DOE) on its electric and hybrid vehicles program. In the report, DOE said the mid-term criterion for a life of at least 600 cycles has not been reached by Ovonic or SAFT. Additionally, the projected battery selling price still exceeds the mid-term goal of $150 per kilowatt hour. Copies of "Electric and Hybrid Vehicles Program - 18th Annual Report to Congress for Fiscal Year 1994," are available from the U.S. Department of Commerce at 703-487-4650.
(CLEAN/EV NEWS: SEPTEMBER 1995,)

GM PrEView Comes to San Diego

Fifty San Diego drivers will each get the chance to drive the Impact for two weeks beginning September 1995. GM will receive data about the consumer market for EVs, while San Diego Gas & Electric will collect information about battery charging requirements and necessary EV infrastructure support systems. The program will run through February 1996. "SDG&E is gearing up to help support the more than 5,000 EVs that we expect will be on the roads in our service area by the year 2000," said John Laun, SDG&E vice president of marketing. More than 800 test drivers in 12 U.S. cities will have tested the Impact by the time the program is complete in late 1996.
(PR NEWSWIRE: 9/7)

Oil Industry Lobbies Against Evs

The oil industry has received billions of dollars in tax breaks, government funding, and indirect subsidies while spending millions to squelch California's growing EV industry, according to two recent reports. The Union of Concerned Scientists reports that preferential tax treatment amounts to $2 billion in federal corporate income tax benefits per year for the oil industry. A study by the California Public Interest Research Group found that oil companies spent $27.5 million fighting the EV mandate from 1991 to 1995. California Governor Pete Wilson has been a recipient of industry donations. "It's time for the oil industry to come clean and abandon their multi-million dollar campaign against electric and alternative fuel vehicles," said UCS' Michelle Robinson.
(UCS, CALPIRG, SIERRA CLUB RELEASE: 9/12)

But It Isn't Working

A nationwide poll conducted by the Edison Electric Institute (EEI) indicates that the "multi-million dollar [automaker] campaign to smear EVs is failing" according to EEI President Thomas Kuhn. Seventy-three percent of those polled think the government should foster EV development and 60% said they would be willing to pay up to $4 extra on their monthly electric bill to support the development of infrastructure. Many respondents would accept an EV with a 75-mile range but wanted fast charging. They also wanted cheaper rates for overnight charging and tax credits for purchasing an EV. "The public has spoken and they want electric vehicles," said Kuhn.
(THE ENERGY REPORT: 9/11)

Amerigon May Move to Alameda

Amerigon Inc., a designer and manufacturer of automotive and EV products, may be the first tenant in CALSTART's Advanced Transportation Incubator, which the consortium wants to locate at the Alameda Naval Air Station in San Francisco Bay. Amerigon has received $3 million in federal grants to support the design and initial production of EVs and recently added $1.3 million to its initial commercial production order for EVs. "We are delighted that Amerigon will locate its electric vehicle manufacturing operation at a facility that will soon house natural gas, electric and hybrid technology companies," said Michael Gage, CALSTART president. For more information, contact John Hamman at Amerigon, Inc. at 818-932-2080.
BUSINESS WIRE: 9/11)

Hatchery Company Develops EV Motor

A new multiphase bipolar brushless (MPB) direct-current (DC) motor is just one of the revolutionary electric motor technologies being developed by CALSTART Project Hatchery tenant, IWon Motronics. The high-torque, constant-power motor is cheaper than AC motor-controller packages and more efficient than other DC motors, says Neil Garcia-Sinclair, company vice president. Despite its variety of projects, Garcia-Sinclair pointed out that the company's prime target is variable-speed motors. "For commercialization of electric cars, you want to make the electric drive as inexpensive as possible," he said. "Our MPB motor is an ideal EV propulsion system."
(CALSTART CONNECTION: Vol. 3, Issue 2.)

Opponents Blast California EV Mandate

Public officials, fleet operators and representatives of state taxpayer organizations denounced California's EV mandate as a waste of taxpayer money at a public hearing recently in Southern California. "When vital services such as firefighting, police protection and health care are suffering from budget cuts, the last thing we need to spend our money on is costly cars that perform at substandard levels," said Larry Glenn, mayor of Glendora, CA. Glenn believes the state should focus on other methods to curb auto pollution, such as scrapping old cars and using remote pollution sensors and reformulated gasoline.
(BUSINESS WIRE: 9/13)

Cross-Country Trip Stops at White House

Alan Cocconi and Joseph Baker stopped at the White House in September to participate in an EV symposium hosted by Vice President Al Gore. The men were on their way across the country in a converted Honda Civic pulling a motorcycle trailer equipped with a Briggs & Stratton RV generator. "We were the only people at the symposium who actually drove an electric vehicle to Washington, D.C.," Baker said. "Most electric vehicles were towed there with symposium participants following in chase cars. But not us." Cocconi designed electric components for the GM Impact and designed GM's Sunraycer, which won Australia's 1,867-mile World Solar Challenge in 1987.
(PR NEWSWIRE: 9/13)

GM's Purcell Targets EV Mandate

Bob Purcell, General Motors' executive director for electric vehicles, says his mission is to convince California politicians to "trust the marketplace, not regulations, to put electric vehicles on the road." Purcell's major task is bringing the Impact to market and to do that he is convinced that California's 1998 EV mandate must be eliminated. "Its much harder for GM to make a business case [for the Impact] when we know that six other manufacturers will be crowding into the market at the same time, all competing on price," said Purcell. "We're all for clean air, but (zero emission vehicles) don't do the environment any good if they are sitting on dealer lots."
(AUTOMOTIVE NEWS: 9/18))

Kansas May House EV Plant

Kansas could become a leading producer of EVs if TDM Co. of Redford, MI follows through with plans to build a $10 million plant in Manhattan, KS. TDM plans to produce electric Ford Ranger XL pickups, powered by a 100-horsepower AC electric drivetrain and conventional lead-acid batteries. Ford will provide TDM with engineless gliders. Beginning in March 1996, the company expects to sell at least 1,700 electric Rangers in the first two years to fleet owners, such as utilities and municipalities. Each vehicle will cost around $26,000 although tax incentives could cut the price by $6,000. A five-passenger electric sedan with a range of 100 miles is also in the works.
(AUTOMOTIVE NEWS: 9/18, p.8)

EVs Not Just for the City

The assumption that EVs would not be appropriate for rural areas because of the greater driving distances may not be valid, according to a survey sponsored by Rural Electric Research. On the day of the survey, about 45% of the EVs in both urban and rural locations were not driven. Of those that were, the rural vehicles were driven only 16% more miles on average than city EVs. In both locations, 57% of the vehicles were driven fewer than 30 miles. Distance demand was lowest in the most sparsely populated rural areas of fewer than 100 people per square mile.
(SCATRAX: 9/1, p.1)

Cheaper Ways to Clean the Air

The American Petroleum Institute (API) believes there are cheaper ways to eliminate air pollution than the widespread use of EVs. The think tank Resources for the Future estimates that it will cost anywhere between $29,000 and $108,000 to eliminate one ton of hydrocarbon emissions using EVs. API estimates vehicle scrappage programs could eliminate a ton of hydrocarbons for $4,000 to $6,000 and that reformulated gasoline can do the job for $1,400 to $5,100. Call Susan L. Hahn for details at 202-682-8118.
(API NEWSTIPS: SEPTEMBER 1995)

EV Assessment Points Out Problems

The cost of EVs, their limited range and the lack of infrastructure are some of the impediments to the widespread use of EVs, according to a report recently released by the New York State Energy Research and Development Authority. "ZEV costs will continue to be 25 percent or more higher than their gasoline counterparts through 2004," according to the report. "The higher vehicle purchasing price and the cost of battery replacement are likely to be of much greater significance than savings in their reduced energy and maintenance costs."
(ENERGY REPORT: 9/18, p.754, 755)

Trees for the Future

Plant Trees to Offset EV's Gases

by Steve McCrea

One complaint lodged against EVs is the creation of carbon dioxide. Some researchers even claim that more C02 is generated by EVs compared to cars driven the same distance. Suppose EVs (and all utility vehicles, even those powered by gasoline and diesel) were turned into "global cooling machines"?

CALCULATION of C02 produced by a typical EV

- 365 days x 25 miles = 9125 miles
- Assume -that the typical EV covers 10,000 miles (most go less, but let's select a high mileage number).
- Assume 2 miles per kilowatt-hour (many vehicles are more efficient than this, but let's keep it conservative) Electricity consumption: 5000 kW-hr/yearNationwide average: 1. 9 pounds of C02 per kw-hr
- A typical EV emits indirectly 5000 x 1.9 = 9500 pounds of CO, per year.
- Number of years in service: 15 years (again, probably high)
- Lifetime emissions: 9500 x 15 = 142,500 pounds of CO, or about 71 tons
- If the vehicle operates on 10 years
- S: 9500 x 10 = 95,000 lbs., or 47.5 tons.

A tree that absorbs 50 pounds of C02 a year soaks up one ton per lifetime (assuming 40 years, even though many trees last longer).

Conclusion

71 trees per vehicle need to be planted for a 15-year vehicle, 47.5 trees for a ten-year vehicle. At 13 cents per tree, the cost per "global cooling EV" is $6.18 (ten years) or $9.23 (15 years).

Suggestion

Count up the number of electric vehicles that your club members own, multiply by either $6.18 or $9.23 and send that many dollars (to pay for tree planting) to Trees for the Future.

Then issue a press release stating that "Electric Car Association becomes global cooling." Remember to add the C02 generated by your member's travel to the club meetings! If you have questions about any of these calculations, fax them to me.

Steve McCrea, 2314 Desota Drive, Ft. Lauderdale, FL 33301. Tele: 305-463-0158. Fax: 305-462 4423.

EVents Calendar

by Anna Cornell

Oct. 21 EVAOSC (Electric Vehicle Association of Southern California) Annual October Rally and 1995 Electric Vehicle Tour of Riverside. Starts at Inland Empire Foods, 5420 Via Ricardo, Riverside, CA. Register vehicles between 8:00-8:30 am. EVOSC -President Kitty Rodden, 818/355-2927

Nov. 7-9 1995 West Coast Electronics Convention and Trade Show (WESCON '95). Moscone Center, San Francisco, CA. Two free EV sessions on Nov. 8, EV Batteries at 9:30-11:30 am and Hybrid EVs, 3-5 pm. Advance registration, free, $20 at the door. For more info or registration form, send a request to wescon@ieee.org. Or contact Stan Skokan 415/366-0643.

Nov. 13-15 7th annual Sustainable Transportation S/EV 95 at Rhode Island Convention Center.The Washington Times calls this the biggest covocation of EV scholars in the country". Includes breakout sessions on fuel cells, EV techonology, business opportunities, an EV tutorial and trade show. Organized by Northeast Sustainable Energy Association (NESEA), 50 Miles St., Greenfield, MA 01301, tel. 413-774-6051

Nov. 16-18 Texas Renewables '95 in El Paso, TX 512/345-5446.

Nov. 29 Dec. 1 Global Electric Vehicle Conference focuses on EVs aand their impact on international business, and the global environment. Crystal Gate Marriot, Arlington, VA Presented by Intertec publications. Contact Janne Romanek 610/566-7080 or Betsy Norberg at (913)-967-1865.

Dec. 12- 14 1995 North American EV and Infrastructure Conference, held in Atlanta GA at the Stouffer Renaissance Hotel. International EV Synosium and Exposition combined with EPRI's National INfrastructure. Exhibitor info: (415) 855-2050, conference info: (415) 855-2010.

1996

Jan 22-23 ENV '96, Hyatt Regency, Dearborn, MI 313/995-4440

Mar 1-3 '96 APS Electrics at Firebird International Raceway. For info, contact EVTC at 602-256-2599

May 25 - June 8 ENER*RUN4. Starts from Hardy, AR and goes all over. Stay tuned for details.

July 31 - Aug. 5 Scandinavian Electric Car Rally from Gothenburg Sweden to Oslo, Norway. Tour the fjords in your green machine. Sanctioned by Federation Internationale de l'Automobile (FIA). Begins with a seminar on July 31, then the rally. Submit abstracts of papers to SECR '95. Travel and hotel compensation available to presenters (confirm directly with them first). Contavt SECR '95 Box 53, 401 20 Gotenburg, Sweden. Tel. +46 31-62 60 61, fax. +46 31-62 60 66.

Calendar info should go to Anna Cornell, (510) 685-7580.

For Members only

EV Want Ads

For Sale

For Sale: '72 Porsche 914. 108V, Advanced DC 8" motor, K&W on-board charger, DC-DC converter, US 2300 batteries, Curtis 1221 controller, Polypropylene battery boxes, suspension and brake upgrades. Buy a completed car for less than the car, conversion kit and batteries. $9800. Call Phil Durbin @ (510) 455-1183.

For Sale: '82 Renault "Le Car Electrique". 40-50 MP Charge, 70 mph, 2 seats, 220 off-board charger, 16 6-v batteries, 96V, 400 amp controller. Clean. Make offer. Call Bob @ (408) 923-6757.

For Sale: '79 Voltsrabbit. 7000 EV miles. Built with Electro Automotive Voltsrabbit kit: Advanced DC 8" motor, Curtis controller, Sevcon DC/DC, K&W charger, 96V, power brake pump. Turnkey EV for cost of kit & donor. Runs fine, batteries 3 yrs. old. $8000/as is or $9,000 with new batteries installed. Call Mike Brown at (408) 429-1989.

For Sale: '81 Jet 007. 20,000 freeway miles rebuit with PMC controller, DC/DC charger, extra rims/tires. $5995. Call (510) 837-7086.

For Sale: '84 Escort. 2300 miles on chassis, PMC controller, on-board K&W charger. Only 1,000 miles on 120 V Trojan 5SH(P)'s. Runs great. $8,500. Call (205) 883-6872.

For Sale: '82 Vanagon Conversion. 20 Trojan T-145s 9" Advanced DC motor, Curtis controller. Built in '93. 45-miles range, SEER Rally winner, 1200 pounds payload capacity. Can upgrade to 144 V and regen. Best reasonable offer. Call (707) 964-1331 or (707) 937-0338.

For Sale: '76 VW Rabbit. Winner, '93 Phoenix SE500 Stock B and street legal . 120V, 9" ADC motor, K&W charger, etc. Many extras. Asking $5700.
Call (619) 748-3487 (evenings) or http://www.electriciti.com/~jeremy.

Wanted

Wanted: EV with the following: 50-70 mile range; 6-passenger seating; on-board charger; quality conversion (or new); safe; good documentation. Contact James (408) 741-0954 or FAX: (408) 867-6100.

Want Ad information

$7 for the first 25 words. Each additional word, 25 cents. Want Ads are available to EAA members for the sale of electric vehicles, equipment and parts only. Please see advertising rates on next page for commercial products.

Print clearly or submit typed copy of your ad with your name, address, and phone number. The EAA is not responsible for the accuracy of ads. Want ads must be received before the 1st of each month and must include payment to run in the next issue of CE.

If you want to run your ad in more than one issue, please specify and include payment for each issue requested.

Send check payable to
EAA Want Ads
18297 Baylor Avenue
Saratoga, CA 95070

CE Advertising Rates

Full page	7.25" x 9.25"
1 ad	$400 ea
3 ads	$300 ea
12 ads	$250 ea

1/2 page	7.25" x 4.50"
1 ad	$200 ea
3 ads	$150 ea
12 ads	$100 ea

1/4 page	3.50" x 4.50"
1 ad	$150 ea
3 ads	$100 ea
12 ads	$ 75 ea

1/8 page	2.0" x 3.5"
1 ad	$100 ea
3 ads	$75 ea
12 ads	$50 ea

Ads may be placed for 1, 3 or 12 months. Camera-ready copy for each ad must be submitted along with payment. Ads may be submitted on diskette in TIF or EPS format on the PC or MAC. For 12 ads, an invoice will be billed quarterly. A minimum of 3 ads need to be prepaid per quarter.

Ad Deadline
The Deadline for camera-ready copy is the **1st of the month**. Copy received after the 1st will be run in the next issue. Ads will be placed in the priority received. Prepaid ads will receive 1st priority.

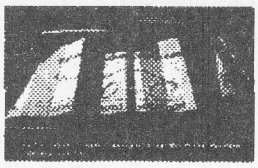
Advertising Manager
Susan Hollis, AdvertisingManager
Office: (408) 374-8605
FAX (408) 374-8750

Address
Make check payable to EAA. Camera-ready copy and payment for the ad should be sent to: **Electric Auto Association**
18297 Baylor Avenue
Saratoga, CA 95070

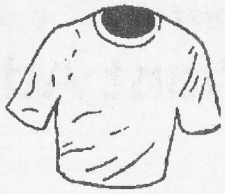
CE Advertisers

EAA Reprints Order Form

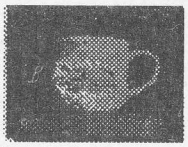
100% Cotton Cap Forest Green "Charging into the Future" EAA Logo
CAP001.....$6.50



Auto SunShade
SS001.....$8.00



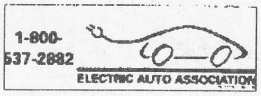
T-Shirt with EAA Logo
TS001 .....$14.50



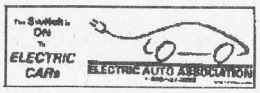
Porcelain Mug with "The Switch is on" and EAA Logo
MUG001 .....$5.00

Thermal Auto Mug
MUG002 .....$6.00

Window decal "The Switch is on to Electric Cars" Black and Red printing. 3 x 9 inches
DC001.....$3.00



Bumper sticker 3.75 x 15 inches
BS800.....$2.50



Bumper sticker 3.75 x 15 inches
BS002.....$2.50

EAA Key Chain , actual shape may vary
KC001.....$1.50

Printed materials

CE	Selected Current EVents ***(specify specific issue)***	$3.00 each issue
CEFY	Current EVents - Full year ***(specify specific year)***	$20.00 each year
PB001	Discovered:The Perfect EV Battery	$ 2.00
FW001	Flywheel Energy Storage	$ 5.00
BG1995	1995 Buyer's Guide to Electric Vehicles (Feb 95 issue CE)	$ 2.95
TT001	Team Tucson Land Speed Record Plans	$ 5.00
IDX001	EAA Current Events Index - 10 Years!	$ 4.00
XA100	EAA XA-100 Hybrid	$ 5.00

Other EV Items

CS001	Current Solutions/Motor Show Video Tape (14 minute runtime)	$14.00
WL001	Window Literature Holder (fits pages 8.5 x 11 inch)	$22.00
PARK01	"EV Parking Only" Sign (18"x12") green icon on white background	$22.00

Electric Auto Association **Reprint** Order Form
Send order to: EAA Reprints
5820 Herma St., San Jose, CA 95123-3410

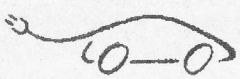
Name _____
Address _____
City,St,Zip _____

Item#	Size	Quantity	Item Description	Unit Cost	Amount

Subtotal	
Postage +10% for USA*	
Handling	$2.00
Total	

Make check payable to: **EAA** (US dollars)

* for Canada add 15% or for other foreign destination add 25%



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