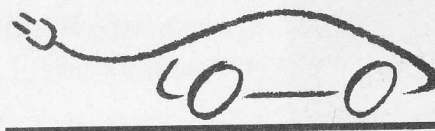


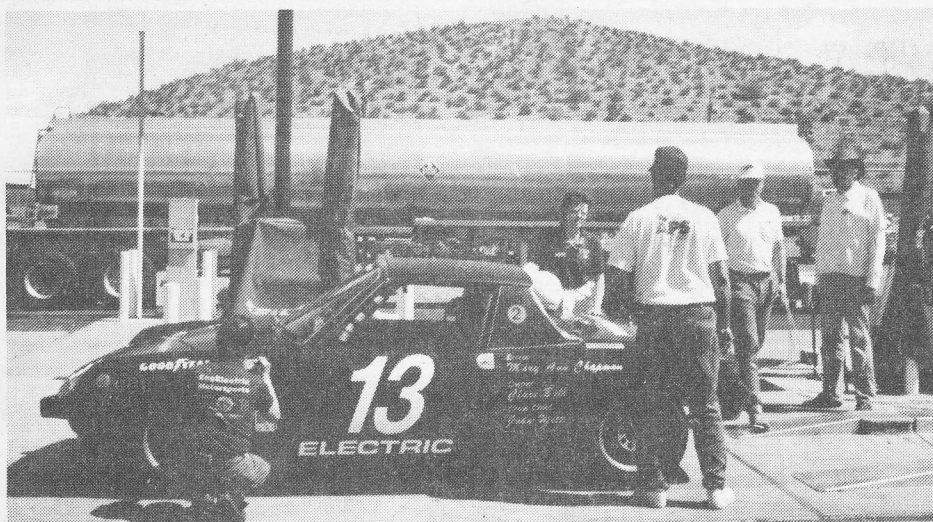
# CURRENT EVENTS



APRIL 1995

PROMOTING THE USE OF ELECTRIC VEHICLES SINCE 1967

Vol. 27 No.4



## WE'RE-IT goes to Phoenix

WE'RE-IT, last year's Women's Electric Racing Team, didn't think they'd have a car for the 1995 race, but they have one now. Hopalong isn't running this year; the flag is being carried by "Chili Pepper", the WE'RE-IT 914 Porsche, otherwise known as #13. She'll still be carrying her same race number, but she's tricked out this year with some new advanced lead-acid batteries and, a set of Michelin low rolling resistance tires.

The women of WE'RE-IT and EAA pulled together to get #13 ready for the heat and enduro races. EAA guys plunged in to help too, since CE's editor, who kicked off the project, decided that a Y-chromosome should not exclude anyone who believes in supporting and encouraging women. Involved in the race effort this year are: Clare Bell, #13's owner and project instigator/leader, Marianne Walpert, WE'RE-IT's founder and team captain last year, Mike Slominski, of Mike's Auto Care, a believer and a real can-do guy, Mike's son Adam, Scott and Anna Cornell, Allaire Paterson, Mary Ann Chapman and John Witt of Eco-Electric, Kathy Watson and Lanette Racine, our hosts in Chandler, AZ. and a cast of thousands, as they say in the movies. Why "Chili Pepper"? Well, she's a hot little number and if you don't look out, she'll come up and bite 'ya.

### Hold the Press!—100 Km Endura Race Results

1st	Tom Sneva	#90 SRP Ford Probe
2nd	Gary Jackson	#44 Little Guy Geo Metro
3rd	Rick Doran	#40 Cloud Colt
4th	Mary Ann Chapman	#13 WE'RE-IT 914 Porsche

### A Two-Week Diary - Part 2

## Impact Adventures

By KATHY WATSON

Saturday, Oct. 15. - I had almost completely lost my voice from answering questions and doing my spontaneous sales pitch. It was pouring down rain, very wet, but the GM Impact handled very well. We couldn't accelerate off the stop as we do on dry pavement. In Arizona, rainy streets are slicker than in other cities since we seldom have enough rain to wash the oil build-up away. The low rolling resistance tires also had something to do with it. But really, that was nothing to complain about. I have the same problem with any car I drive in the rain.

### Sunday, Oct. 16

My parents hosted an EV party so that friends and neighbors could have a first-hand look at the hot wheels of the future (EVs!). Lanette, my mother and I were hyped and ready to start knocking on doors. My voice started out OK in the morning, but I knew it would soon start to crack under the pressure. By now Lanette was getting more vocal and boy did she know her stuff!

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## Guest Editorial



### Corporate Rights and the Environment

BY DAVID SMERNOFF

THIS PIECE IMPRESSED ME SO MUCH THAT I DECIDED TO RUN IT IN MY REGULAR EDITORIAL SLOT. I THINK IT IS APPROPRIATE IN LIGHT OF RECENT POLITICAL DEVELOPMENTS. —CB

**A**s a grassroots environmental activist, I am often on the frontlines, fighting ancient forest ecosystem destruction or staring Nevada test-site guards in the face. One consequence is that I witness, and personally experience, burnout among the "green troops." From this, I have come to the conclusion that it is too late to battle environmental destruction chemical-by-chemical, forest-by-forest, river-by-river, corporate-disaster-by corporate disaster. I am convinced that our goals can only be attained by taking the struggle to a higher level. Instead of putting band-aids on the wounds, it is time to attack the disease which is the source of environmental injury.

In 1886, the US Supreme Court decreed that corporations are persons under the law. This grants them the same rights and Constitutional protections as individuals, without any of the corresponding responsibilities. To understand the environmental implications of this, we must first look at what a corporation is. A corporation is a legal fiction created by law to engage in business for the purpose of returning a percentage on investors' capital. This narrow financial purpose strictly limits the range of decisions possible within the corporate culture and strongly favors decisions which are short-term in nature. Such decisions are ultimately the cause of most environmental destruction because they do not value public trust resources such as watersheds or forest ecosystems. In the words of former Reagan economist Robert Monks, "...the corporation as an entity became so powerful that it quickly outstripped the limits of accountability and became something of an externalizing machine, in the same way that a shark is a killing machine. — no malevolence, no intentional harm, just something designed with sublime efficiency for self-preservation, which it accomplishes without any capacity to factor in the consequences to others."

To further enhance the destructive power of the corporation, individual investors and managers are legally protected from liability for the corporation's actions. Thus we find ourselves confronted with a non-living entity, empowered with the same rights as humans, but without the same ethical constraints. You can think of a corporation as a smiling giant that has perpetual life, cannot feel pain, must constantly grow larger, must deposit its excreta in public places and do everything it can to make its neighbors and compatriots pay all its costs of living. How then do we begin to alter this societal institution so that corporations can include ethical constraints into their daily profit-making decisions?

Two key changes to the legal framework of corporations would offer real medicine to the corporate-spawned disease of environmental destruction. First, we must

*Continued on page 3*

**Front cover photo:** "One Hot Tamale—Chili Pepper Porsche gets prepped for Phoenix."

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### Article Submissions

If you would like to submit an article for Current EEvents—the preferred form is on a floppy disk, formatted for DOS (Ascii Format) along with a printed copy of the article. Also include camera-ready photos or graphics or include TIFF formatted files with your copy.

Articles and graphics or line art may also be submitted for the MAC. Please specify PC or MAC and identify software used. Please include a hard copy.

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 EEvents. Contact Clare Bell, Managing Editor for further information.

### Advertisements

If you would like to submit an ad, refer to Advertising Rate Sheet 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

Hal & June Munro  
2710 St. Giles Lane  
Mountain View, CA 94040



# Open Letter to EAA Members & EV Owners

BY BOB MUELLER

I just volunteered to be the new VP of the San Jose Chapter of the EAA. My dedication to EV's started only last year when I saw smog at the Grand Canyon. I eventually found the EAA, and recently bought Mike Slominski's '82 Renault Le Car. I was ecstatic to find such a depth of EV knowledge and experience and I am gratefully surprised at the years of commitment I see in this community. I just wasn't aware of you.

I know that to some, EV's are a satisfying manifestation of engineering efficiency. To others, I suspect, they're a way to express their individuality. To me, massive replacement of ICE vehicles with EV's means a significant reduction in air pollution. And, subsequently, a significant increase in healthy people. I am a socially aware athlete, and I want as much clean air as can be acquired. Both for my own lungs, and for everyone else's.

I want to populate the Bay Area with EV's. I want this part of the country to be the EV mecca of the world. Right now, EV's are nearly as uncommon as UFO's! I want every Bay Area driver to experience four (4) 'EV sighting's every month. (One EV a week, that's all we ask!) I think that most of you share the same desire, at least to some degree. To accomplish this propagation we need to raise the popular consciousness about the current practicality of EV technology. Too many people have bought the line that we need a battery breakthrough before EV's are of any use to a large segment of drivers. We know this is not true. We know that for a large portion of our population, EV's can satisfy 90% of their driving needs; that EV's are practical NOW!

To raise the social awareness of this fact, we need to dedicate ourselves to **SHOW AND TELL**.

## SHOW

We need to present attractive EV's to our audience. We want them to want one too. **DETAIL** your car as much and as often as possible. **MARK** your vehicle clearly so that even our large foreign-born population will have no doubt as to the power source of our clean-air chariots. ('ASK ME ABOUT MY EV' license plate frames and T-shirts. EAA emblazoned windshield shades, ...) **DRIVE** your EV as if it were your only car. The more it's on the road, the more people who will see it. Seek out crowded outdoor events that become mini-car shows when your clearly-marked EV is parked there. Hold our monthly EAA meetings where our EV's are parked together under an EV banner. How about spring through fall meetings being held in shopping center parking lots under canvas covers? **EXPOSURE!** Let's let the Bay Area know that we're here, and that batteries aren't just for golf-carts anymore!

## TELL

Keep copies of Bruce Parmenter's information packet in your car for handing out to interested people (read: 'potential EV buyers'). Keep a box of assorted EV articles and magazines handy as well. Display an information sheet about your car and the EAA in your windows whenever you park in public.

*More from Mr. Mueller next month. He should like a sharp dude with a lot of drive. Welcome to EAA! —CB*

## Editorial

*Continued from page 2*

*remove from corporations the Constitutional protections of a real person, for clearly they are not human. Legal historian Carl Mayor suggests a new amendment to the US Constitution. "This amendment enshrines the sanctity of the individual and establishes the presumption that individuals are entitled to a greater measure of constitutional protections than corporations. For the purposes of the foregoing amendments, corporations are not considered persons, nor are they entitled to the same Bill of Rights protections as individuals. Such protections may only be conferred by state legislatures or in popular referenda."*

*Second, we could resolve the corporate charters of those institutions which insist upon doing major harm. Individual criminals are incarcerated, yet no such option exists for corporations. After they grow to a certain size, no penalty or fine can effectively hurt a corporation; such costs are just passed on to the shareholders. The revocation of a corporate charter, the equivalent of a corporate death penalty, would provide a real incentive to for corporations to incorporate ethical behavior in [to] their daily decision-making. These changes would humanize and civilize the corporate form, which many agree has emerged as our most rogue and dangerous institution. In the absence of such reforms we will be constrained to putting band-aids and aloe on each wound, in perpetuity.*

*Acknowledgement: Much of this article is adapted from Rachel's Hazardous Waste News #388, The Corporation - Part I, by Peter Montague. David Smernoff is a Ph.D. of ecology and a co-founder of Bay Area Action.*

## Impact

*Continued from page 1*

Whew, what a relief. I slipped into the house for a much-needed drink of water, but I only got a few sips before my dad was tugging on my sleeve and whispering, "Can you give someone else a ride?"

This continued all afternoon. I must have given 16 rides. Between trips we used the 110 V convenience charger to give the car a little boost. I needed a recharge too; I was hyped and my voice was gone, but, of course I couldn't keep my mouth shut about the Impact. On our way home, we pulled up beside a 1994 Infinity Q45. Lanette was driving our car. The other driver asked, "Hey, is it electric? Is it fast?" "YES," I croaked back and Lanette hit the accelerator abruptly, slamming my head against the headrest and leaving our new friend behind.

At the next red light, the Infinity's driver was gasping as if he'd run all the way. "Damn, it IS fast! I had mine floored and you lost me."

We stopped by the home of Val, a friend of mine. After we stood in the driveway admiring the Impact, I took Val out for one of our now-famous rides.

She knew of a quiet road along a canal which looked more like a drag strip. I started out at the very end from a complete stop. It was a quarter-mile with a stop sign at the end. We almost caught air as we passed the stop (I plead the Fifth). Val let out a gasp and said something unmentionable. The blood rushed to my head and I felt just a little twinge of guilt. Thank God that the car, us, and everyone else survived my test driving!

### Monday, Oct. 17

I gave a few 'Disneyland' rides to co-workers nearly every day at lunch and today was no exception. I think we owe GM a set of tires now because I left so much rubber behind.

After work, Lanette and I used a friend's video camera to time the 0-60 acceleration. We think we got about 7.5 seconds, but are not sure. We sped up and down a quiet long street and I'm sure we caused a lot of people to wonder about our sanity. I'm also surprised that we never caught the attention of our local police.

When Lanette gave Christi, another of our friends, a ride, she stirred up the dust in a new housing development where Christi lives. Her neighbors gathered to check out the nifty "Star Trek" dash info display as we initialized the car for startup.

### Tuesday, Oct. 18

My parents were very proud that I had been selected to drive the Impact. You would have thought, that I'd told my father that I'd invented the electric car! My father drove the Impact for the first time that evening. He was gentler on the acceleration than my mother, but he gave the car's handling a good test. This was a role reversal for my parents, since my mother is usually the conservative driver and my father has the lead foot.

### Wednesday, Oct. 19

After work, Lanette and I went to pick up a pizza. While we were at the pizza place, a teenager watched us from his car. He was ready to pull out, but he intentionally delayed leaving until Lanette got out of the Impact in order to ask what kind of car we had.

When we answered, he said, "Wow...that's a cool-looking car!...How's it drive? Is it fast?" "YES" we said, as we must have done a hundred times by now.

It seems that men and teenagers, who are real car-watchers, really notice the Impact.

### Thursday, Oct. 20

We can't remember what we did, but I am sure that the Impact did not sit in the garage all night. Maybe we were abducted by space aliens?

### Friday, Oct. 21

Our two weeks were nearly over. I got a call from the PrEView program representative about when they would pick up the car. I tried to put it off. "How about 10 AM Monday?" I offered. "How about 7 AM?" she countered. "How about 8 AM?" "Okay," she agreed, with what sounded like a smile.

We went on a long drive today so that we could play with the coast-down feature. I'd been using it a lot, since it conserved battery energy. It also had the indirect effect of calming down a driver's wilder tendencies. If traffic was slowing down far ahead, I used the coast-down to gradually slow the EV. In this mode it felt as though it were a gas car with the clutch engaged, using the retarding force of the engine. If there was no need to accelerate, but no immediate need to brake, I would switch the coast-down off and just glide. This was great fun. It also made me wonder why I had always raced to red lights in my IC car.

I'm not sure whether this EV would tend to calm its drivers with its remarkably quiet, vibration-free ride or excite them with its acceleration and handling. It had both effects on me and I don't know which was stronger.

### Saturday, Oct. 22

Even though it is only Saturday, depression is already setting in at the thought of losing the Impact. We don't want to give the car back to GM on Monday. It seems so unfair. She's part of the family now; she's happy here with us.

Lanette lovingly washed the car for the last time. It was her way of saying



## Impact

*Continued from page 4*

goodbye and she didn't miss a spot. People stared and then took second glances, but we had no new visitors. All the locals had either seen the car or still hadn't figured out what she was.

### Sunday Oct. 23

While on an errand for my mother, I met two couples in a grocery store parking lot and ended up talking about the Impact and EV technology for 20 minutes. I almost feel as though it is my public duty to graciously show the GM Impact, even though the constant questions can be wearing. Turning people onto EVs is a job I could love. In the evening, Lanette got called back to work and I was left alone to mourn the impending loss of the GM Impact. I went out on my last adventure with her. When I got home, I cleaned her out, gave her a finger-air kiss on the nose on the dash, plugged her in one final time and said good-night.

### Monday, Oct. 24

I woke up today with an anticlimactic feeling that the instant stardom I experienced during the last two weeks had worn off. I ate breakfast, grabbed my camera for a few desperate last snaps, then opened the garage door and waited for the inevitable.

Shortly before 8 AM, SRP employee Stan Stellwagon arrived and we had a long talk about my experience with the car. Soon GM engineer Earl Heron pulled up with a van and car dolly. It was like watching a kidnapper. He greeted me pleasantly, but then he was all business. I handed over the keys and gave him the 5-digit startup code. I also returned a few pieces of plastic that a passenger accidentally removed from the seatbelt retainer cover.

Earl pulled the Impact out of the garage while Stan removed the wall-

mounted 220V Hughes charger. Before I even knew what hit me, the Impact was on the dolly and the two official EV abductors were standing in the street, deciding where to go for breakfast.

I stood there, feeling alone and distraught. After all, this was just a car, wasn't it?

That was it, then. I said thanked them, said good-bye, and closed the garage door. At 9 AM, my mother called to offer her condolences. Thanks, Mom.

But even though the Impact is gone now, I still remember that boy who described the Impact's performance in one short pithy phrase. During the test-drive we ran into him again, this time walking with his dad.

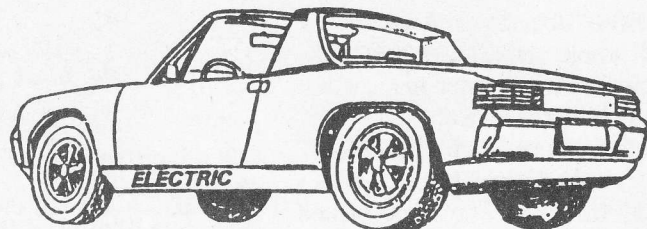
"You know that it's ELECTRIC," the father said to his son.

"I KNOW. I saw it last weekend, screamin' around. It KICKS BUTT!" - KW

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# EAA Board Meeting Notes

By ANNA CORNELL, SECRETARY

## Board Notes for Sept. 24, 1994

Location: 787 Florales, Palo Alto, CA.  
Time: 10:00 AM to 2:45 PM. Attendees: Lee Hemstreet, Anna Cornell, Michael Slominski, Stan Skokan, Harold Bell and Clare Bell. John Newell attended as a Technical Advisor. The meeting started at 10:15 and an informal acceptance of the agenda was made while waiting for Clare to arrive.

## Treasurer's Report

Treasurer Mike Slominski reports that he made rebate payments for July and August, since the amounts were small. There was a \$550 cost overrun for the special August CE issue, which was split between New Membership (60%) and Contingency (40%). Mike is also resolving the IRS claim that EAA owes \$830 for late filing. (He managed to get them to drop it — see Board meeting notes for Jan. 95.) Mike also reported on a computer BBS which is free to EAA members.

## Silicon Valley Rally

Lee Hemstreet described the Silicon Valley Rally, held on Sept. 17 1994. 22 cars participated with only 2 in the display-only class. There were 2 in the three-wheel class as well. SV feels they lost money on the EVent, but believed it was worth it.

## WESCON '94

Stan Skokan reported on WESCON 94, Sept. 27-29. 12 vehicles were to be there as well as several impressive technical sessions. Stan has requested that Ken Koch write an article about the show. Stan also mentioned that he thought the Oct. CE issue was the best one so far.

## East Bay Rally

Anna Cornell spoke briefly about the East Bay Rally and handed out results to those who hadn't already received them.

## CE Newsletter

Clare Bell discussed the newsletter and her plan to train an assistant editor as backup. Ruth Shipley was a possible candidate (she turned it down).

## EAA Elections Update

Cornell and Hemstreet mentioned that the election committee received one nomination from Irv Weiss in LA for the upcoming Board Election. Cornell will bring her records to the Board election meeting to make sure that those who vote are EAA members. She will also get a recent list from June Munro prior to the election. She is in charge of locating a site for the election and will call Clare, Lee, and Mike. It was suggested that next year's proxies have both printed and cursive signatures in order to make them easier to validate.

## EV Buyer's Guide

Stan Skokan reported on the joint EAA-Spirit Publications project to bring out the 1995 EV Buyers' Guide. EAA has met the commitment it made to 1) solicit advertising (more than 5K worth) and purchase 2000 copies for the members. The total print run will be about 700 issues. Stan also requested editing help in tightening up the text, a job that has to be completed in the next two weeks. Cornell motioned to give him the assistance and Lee Hemstreet seconded.

## EV News

Hemstreet passed out a draft of a letter from the Board to California Governor Pete Wilson, protesting the termination of CARB's pro-EV Chair, Jaqueline

Schaefer. Skokan passed out a Mobil article from Time Magazine and one from P.G and E. PG&E will charge a penalty for on-peak EV charging. He also reported that LA councilman Marvin Braude, who started legislation (Clean Air Act) now wants to bring in new legislation to make the car manufacturers actually become interested in building electric vehicles. Stan will meet with Braude to consult on the bill.

Paul Brasch items were tabled for now. Stan Skokan has arranged for pick-up of Paul's car, VOLTS, and is putting it up for bid. Hopefully it will go to someone qualified to do the restoration.

## Next Board Meeting

The next Board meeting will be held on Oct. 29, in conjunction with the Board election, the site to be determined by Anna Cornell.

(EAA decided to hold the election at EPRI in Palo Alto, 3412 Hillview Ave., Building 1 Auditorium.)

## Board Notes for Nov. 26, 1994, Including Election Results

The meeting was held at Stan's house on the 26th at 12 noon. All six Bay Area Directors were present. The minutes from last month will be sent with the Nov. 26 notes. The officers appointed each other into the same positions as last year. Everyone was happy with the performance each had given in their jobs during the past year. Clare nominated Michael Slominski as Treasurer and Lee seconded. Lee nominated Bruce Brooks as Vice-chair and was seconded. Bruce nominated Anna for Secretary and Stan seconded. Bruce nominated Stan for Chair and Lee seconded. Bruce Brooks commented on our present committees and suggested some changes to get the remote members of



## Board Notes

*Continued from previous page*

the board to increase their participation. He also mentioned that we need better communication between chapters and the general public.

The committees will be condensed down to these five: Chapters, Publications, Membership, Communications, and Activities and Awards.

Stan Skokan's next report will show these five committees. Chapter start-up packages were approved with minor changes to be made before being sent to people who want to start chapters.

Mike Slominski reported that he is still working on the insurance issue.

Legislative Action - NTSA is drafting a bill that could make conversion of electric vehicles illegal. The Board will draft a letter immediately to oppose this proposal, and get it to some chapters to sign and send in before Dec. 16.

### Election Results

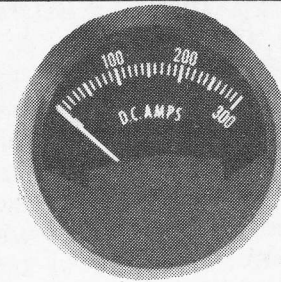
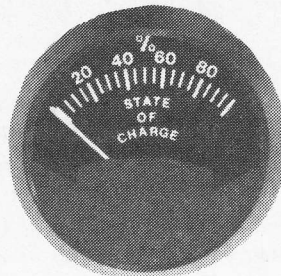
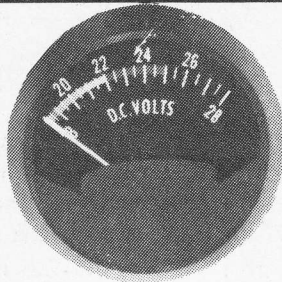
I'm happy that we did receive more than the 5% participation required to make this election legal (although some of the ballots were late). However, at the same time, I'm disappointed that most of the members who have been in the association a long time didn't use their voting rights.

The Board thanks those chapters who gathered ballots from their members and sent them to us. The new By-Laws were accepted by the membership.

The three board members that were up for re-election; Bruce Brooks, Harold Bell, and George Gless, were reinstated. Irv Weiss and Dann Parks received some votes, but not enough for a seat on the Board. The next board meeting [was] on Jan 28th, at Tandem Computer on Forge Drive in Cupertino. Time: 12:30-4:00/ To those of you far away, if the meeting time needs changing in order to fit with your flight schedules, please let me know.

Anna Cornell, Secretary, EAA

## ELECTRIC VEHICLE INSTRUMENTS



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# EVIA Responds to NHTSA Request for Comment on EV Rulemaking

EVIA is the Electric Vehicle Industries Association, a nationwide trade organization of EV manufacturers, converters, distributors and component suppliers. Recently the National Highway Traffic Safety Administration proposed safety regulations for EVs in their Docket No. 91-49; Notice 04, Federal Motor Vehicle Safety Standards for Electric Vehicles, published in the Federal Register on Nov. 28, 1994.

EVIA promptly responded to NHTSA's requests for comment, especially NHTSA's definition of "make inoperative" (in reference to modifications to a vehicle). The reply letter from which the following excerpts are taken was prepared by Mary Ann Chapman, using input from Bob Batson (Electric Vehicles of America; Ken Sghia-Hughes (Solectria Corporation); Chapman, John Witt, and Don Traicoff (EcoElectric Corporation); Mike Brown and Shari Prange (ElectroAutomotive); and Mike Gruchalla (KTA Services).

All EVIA members had an opportunity to submit input, and the final version was reviewed and approved by the EVIA Board of Directors, which includes Bob Beaumont (Renaissance Cars, Inc.), Bob Adams (Solar Car Corporation), Bill Meurer (Green Motorworks) and Karl Thidemann (Solectria Corporation) in addition to Batson, Brown, and Chapman.

*NHTSA's concern about EV shock hazards will be discussed in the next issue of CE —CB*

## JOIN FORCES WITH THE LEADERS OF THE ELECTRIC VEHICLE INDUSTRY!

The Electric Vehicle Industry Association (EVIA) is building an environment that will help small converters and manufacturers to remain viable in an increasingly regulated industry.

Recently EVIA members have jointly responded to the NHTSA Request for Comment on EV safety rulemaking, participated in dialog with the EPRI EV Infrastructure Working Council, been represented in Washington on several critical issues, and received a variety of technical information.

EVIA's new **Startup Support Program** is intended to enable individuals and small startup firms to get into the information loop at minimum cost. For full information and an application form, contact:

### ELECTRIC VEHICLE INDUSTRY ASSOCIATION

National Office: P.O. Box 85905

Tucson AZ 85754

602-889-0248 • Fax 602-889-6746

"Dear NHTSA: The following are comments in response to the referenced Request for Comments on the need to regulate electric vehicles (EVs) with respect to potential safety hazards of battery electrolyte spillage and electric shock hazard, in a crash or rollover of an EV and during EV repair or maintenance."

"It is the position of EVIA and its members that, while it is essential that EVs be built to high standards of safety, those safety concerns can be met by industry standards, industry-adopted recommended practices and an industry-based certification program."

"EVIA is in the process of developing such standards and recommended practices. We are using input not only from EVIA members, but also from the EV America standards as well as those developed by other agencies worldwide. We plan to use our standards and recommendations as the basis for an EVIA certification program. This would serve as an assurance to purchasers of new or converted EVs that the vehicles are professionally built and meet appropriate safety standards".

"This approach would be in line with that taken for natural gas and propane conversions, which are regulated primarily through certification by the National Fire Protection Agency. The one existing FMVSS for natural gas conversions addresses leakage of a highly combustible fuel. As our comments show, the hazards associated with electrolytes in common use in EVs are far less than the hazards of combustible fuels."

"In general, EV-associated hazards differ from those related to internal combustion vehicles. They are less familiar to regulators and vehicle purchasers, but they are also less serious and can easily be controlled by accepted construction practices."

"Of the several thousand vehicles built in the past two decades by conversion shops and hobbyists, we are aware of no reports of serious injury either from electrolyte exposure or from electric shock as a result of EV accidents. In our experience, most insurance companies have little or no resistance to insuring EVs. This indicates that there is no pressing need for NHTSA regulation at this time." "In the [excerpted] comments that follow, we frequently refer to features and requirements that should be incorporated into EV safety standards. In all cases, we maintain that these features and requirements can and should be enforced through industry-based means."

Sincerely, Mary Ann Chapman, President, Electric Vehicle Industry Association.



## Electrolyte Spillage Hazards — EVIA's Reply

"[I]n the interest of low maintenance and safety issues, many EV manufacturers are shifting to sealed and or [acid-] starved or captured electrolyte batteries. [These types] generally contain less electrolyte than flooded batteries and some contain no free liquid. Gel-cell lead acid batteries are used, but not widely. Although some nickel-cadmium batteries are in use, their [application] will remain limited due to price and limited cadmium availability."

"[Over the next ten years] other technologies will be phased in, possibly starting with nickel metal hydride and zinc-air. Sodium-sulfur batteries are used in a few prototypes, but it is unlikely that they will be...in production vehicles."

**"Chemical Properties of Electrolyte**  
The concentration of sulfuric acid in lead-acid batteries [in EVs] varies from 9% to 38% depending on the charge level. Acidity of sulfuric acid electrolyte ranges from a pH of 1.0 to 1.2. Potassium hydroxide electrolyte in nicad or nickel metal hydride has a pH of about 13."

**"Quantity of Electrolyte;** Currently a 144-volt vehicle with high-capacity flooded 6-volt batteries carries up to about 36 gallons of electrolyte. Although the trend is toward high-voltage vehicles and more batteries, those batteries are likely to be smaller and contain less electrolyte. So the total quantity of electrolyte onboard an EV is likely to decrease greatly over the next 5-10 years.

**"Potential Electrolyte Safety Problems:** There is a popular conception of [the dangers of] sulfuric acid that was formed through exposure to horror and gangster films. The sulfuric acid used in batteries is dilute and offers far less potential for injury than does its concentrated form. The safety problems associated with contact with dilute sulfuric acid are roughly equivalent to those associated with spilled gasoline. Exposure to sulfuric acid vapors may cause irritation of eyes, nose and throat, but lasting injury requires prolonged exposure to the acid in mist form, which is unlikely

to occur in an EV collision. [Dilute sulfuric acid also lacks] the fire hazard of gasoline."

**"Known Incidents:** 1) At the 1994 APS Electric 500, there were three high-speed single-vehicle collisions involving EVs with flooded lead-acid batteries. Damage in each was severe enough that the cars could not be driven away. In each case the only spilled electrolyte was from the 12-volt accessory battery, which was located in the stock OEM location. For more information, contact Russ Korne of Solar and Electric Racing Association (602/953-6672) or Don Karner of Electric Transportation Applications (602/978-1373). "Mike Brown of Electro Automotive relates the following incident: A VW Rabbit converted by Electro Automotive was struck almost in the center of the front grille and into the passenger-side fender by a Suzuki Samurai making a left turn. Both cars were travelling at residential street speeds. The Rabbit had four batteries across the front of the car, directly behind the grille. They were not in battery boxes but were secured by frame-type steel hold-downs. There was significant sheet-metal damage to the car. The component plate holding the controller was bent and dislocated slightly. The batteries were pushed slightly out of position, but the hold-down system remained intact. There was no arcing, fire, or explosion, no short circuits and no injury to the driver. The acid from one cell of one battery was lost. The Rabbit was driveable. The Samurai cracked its block and spilled five quarts of oil on the pavement."

**"Need for Federal Regulation:** The hazards of electrolyte spillage are not sufficient to require federal regulation. The potential for injury and damage from sulfuric acid in the concentrations found in batteries is often exaggerated. Compared with gasoline, there is no [chemical] fire hazard from electrolytes in common use, now or in the foreseeable future. Spillage outside the vehicle can easily be dispersed with water. Batteries that are located in

passenger compartments or crush zones of the vehicle should be in containments. Any design guidelines relating to electrolyte spillage should deal only with hazards to vehicle occupants and should be appropriate to specific electrolytes."

**"Appropriateness of FMVSS No. 301 Approach:** Yes, the approach of FMVSS No. 301 is appropriate so long as performance standards, tests or design criteria can be devised that will assure performance without actual crash-testing."

**"The hazards of electrolyte spillage** are not sufficient to require crash testing for just that reason. [I]t is not practical to crash-test (and destroy) vehicles converted 'after first sale to a consumer' when only a handful of units of each model are being converted."

**Appropriateness of Design Requirements:** It would be more appropriate to define the term 'make inoperative' as not being able to demonstrate that battery containment can protect the batteries from being damaged and that, if undamaged, the batteries will not leak more than the allowed amount of electrolyte. Criteria for such demonstration are described in the answer to [the next] question. Such specifications would provide a level of performance almost comparable to that of a vehicle crash test. (The same approach would be apply to shock protection and other aspects of EV safety as well).

**"Effective Design Requirements:** The design of different vehicle models is so varied that it is impossible to make blanket statements as to the best locations for batteries. In addition, specific required designs would prevent innovation. Perhaps the best solution is for the conversion industry to establish design criteria for converters with the engineering expertise to do their own design, and optional specific designs for those who either don't have engineering expertise or who just choose to use the prescribed designs."

# News in Brief . . .

Compiled by Ruth M. Shipley from Environmental Information Network. If this is reprinted, please credit CE and Ruth Shipley.

## Alternative Fuel Groups Join Forces

Several major alternative fuel groups have joined forces to promote the use of all alternative fuels and to ask Congress to continue federal support for alternative fuel programs.

Alternative Fuels Action (AFA) is a consortium of the Natural Gas Vehicle Coalition (NGVC), the Electric Transportation Coalition, the American Methanol Institute, the American Soybean Association, the Propane Vehicle Council, the Clean Fuels Development Coalition (CFDC) and the American Biofuels Association.

AFA recently sent a letter to each member of Congress in an effort to counter recent Mobil Oil ads criticizing alternative fuels. CFDC spokesman Doug Durante said the AFA will meet periodically to exchange ideas.

For more information, contact the Clean Fuels Development Coalition at (301)913-9633.

(OXY-FUEL NEWS: 1/30)

## Next Generation Fuel Cell Under Development

The Institute for Integrated Energy Systems at the University of Victoria (IESVic) in British Columbia, Canada has received a \$2.5 million (C\$3.6 million) grant to develop what it calls the "next generation of fuel cells for transportation."

The five-year program, funded by British Gas, Inc., the Natural Sciences and Engineering Research Council of Canada and Ballard-Power Systems (North Vancouver, B.C.), will address the issues of value engineering, component engineering and integration.

"Engineering design and manufacturability" will be the general focus of the project,

according to David Scott, IESVic executive director. "We have to get costs down, which are mostly tied up in manufacturing."

(HYDROGEN LETTER: 1/95)

## Electric Fuel Builds Zinc-Air Battery Production Facility

Electric Fuel Corporation has begun construction of a \$2 million plant in Jerusalem, Israel that will produce zinc-air battery packs and related components of its "Electric Fuel" system.

The plant is scheduled for completion in the spring and will initially make 80kWh and 180kWh zinc-air batteries for the Deutsche Bundespost Postdienst field test of more than 50 EVs.

When fully operational, the plant is expected to have the capability to produce the equivalent of 60,000kWh of zinc cassettes and 20,000kWh of battery cells annually. "The production facility is a major milestone in bringing our research and development to a real application. It will also give us the capability to run [EVs] continuously in Israel," said Yehuda Harats, president and CEO of Electric Fuel Corp.

For more information, call Mike Greece at (212)725-4500.

(ELECTRIC FUEL CORP. NEWS: 2/95)

## EV America Participants Begin Field Tests

Utilities and other participants in EV America will purchase 54 vehicles and begin field testing to collect data on performance in real-world applications.

EV America wants to accelerate the introduction of EVs into the marketplace by placing up to 5,000 EVs into utility, commercial, government and transit fleets by the end of 1997, with an interim goal of 500 by the end of 1995.

The Electric Vehicle Association of the Americas will collect data on mileage driven each month, reliability, availability and maintenance requirements for most

of the vehicles. Some vehicles will be equipped with on-board computers providing real-time data on energy draw, speed, ambient temperature, battery temperature and other performance characteristics. Initial field test results are expected in April.

For more information, call Gloria Quinn at (202)508-5659.

(EV AMERICA NEWS: 2/2)

## U.S. Electricar & Hawaiian Utility to Promote EVs in Hawaii

U.S. Electricar (Sebastopol, CA) and Hawaiian Electric Company (HECO) have entered into a non-binding agreement to determine the market for EVs on the islands and the required infrastructure to support it.

U.S. Electricar, which opened a manufacturing facility in Honolulu in 1994, intends to manufacture and service the EVs used in the state. HECO will provide customers with assistance in the installation, maintenance, and design of charging stations.

For further information, contact Leo Heagerty of U.S. Electricar at (707)522-1219 or Jane Inouye of HECO at (808)543-7778.

(U.S. ELECTRICAR NEWS: 1/31)

## Matsushita to Produce Nickel Hydrogen Battery

Leading Japanese battery manufacturer, Matsushita Battery Industrial Co., Ltd., reportedly intends to commercialize an EV battery by the end of this year.

The favorite battery for development at this stage is a nickel hydrogen type, according to the president of Matsushita. Matsushita also plans to pursue a zinc-based battery. The company's strategy for 1995 includes narrowing the gap between its nickel hydrogen battery and those of its competitors, placing its lithium ion battery operations on a firm footing and expanding its line-up of solar batteries for



# News in Brief . . .

non-commercial applications. For more information, call +81-6-991-1141.

(COMLINE TRANSPORTATION WIRE: 2/1)

## Big 3 Push for 49-State Car Program

U.S. automakers continue to fight legislation requiring them to build EVs and push their proposed 49-state plan instead. They say they will build cleaner-burning gasoline-powered cars for the whole country excluding California if the Northeast Ozone Transport Commission (OTC) drops requirements that nearly match California's ZEV mandate.

The automakers' plan also requires that Massachusetts and New York drop their recently-enacted ZEV mandates. Massachusetts officials say they have no intention of rescinding their EV program.

The EPA has endorsed the industry plan, but has also told the OTC states to go ahead with their own emissions programs.

(BOSTON GLOBE: 2/3)

## Fuel Cell-Powered EV Announced

Energy Partners, Inc., Western Golf Car and Telesis Cogeneration have announced the completion of their joint venture Genesis Zero Emission Transporter, a concept vehicle designed to address California's increasingly stringent vehicle emission regulations while overcoming the shortcomings of battery-powered EVs.

The vehicle, which uses a chassis supplied by Western Golf, a proton exchange membrane (PEM) fuel cell power system from Energy Partners and engineering support from Telesis, is a ZEV powered by hydrogen fuel.

The companies have received a commitment from the City of Palm Springs and its Regional Airport for 5 vehicles plus a refueling station to evaluate commercial feasibility. For more information, contact Rhett Ross at (407)688-0500.

(ENERGY PARTNERS NEWS: 2/7)

## EV America Buys U.S. Electricar Vehicles

US Electricar, Inc. (Sebastopol CA) recently announced that EV America has bought an additional 38 of its sedans and pickup trucks, bringing the total number of cars the company has contributed to the program to 72. EV America was formed by a coalition of US public utilities to accelerate the introduction of EVs into the marketplace.

US Electricar is one of two manufacturers whose vehicles were selected for purchase based on preliminary utility tests. In the competition, US Electricar's vehicles placed first in areas such as acceleration and driving range, and its sedans achieved a top driving speed of 81 mph.

In addition, the company's pickup truck was the only vehicle to meet EV America's minimum requirements for a standard urban driving cycle at 77 and 19 degrees F., while also realizing a range of more than 65 miles on a battery charge.

For more information, call Leo Heagerty at (707)522-1219.

(US ELECTRICAR NEWS: 2/8)

## California Consumer Coalition Petitions CPUC

A coalition of business, labor and environmental groups wants the California Public Utilities Commission (CPUC) to allow electric utilities to pass the costs of

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Californians for Jobs and Clean Air (Cal-JCA), which includes the Natural Resources Defense Council, US Electricar and San Diego Gas & Electric, believes most consumers would not object to paying a few cents more each month to invest in the state's alternative fuel infrastructure.

"By approving this request, the CPUC can ensure that California can start to aggressively generate thousands of jobs for Californians, improve the state's air quality, as well as help eliminate our dependence on fossil fuels," said Cal-JCA spokesperson Marie Moretti.

For more information, contact Marie Moretti or Sharon Hawkins at (916)446-6667.

(CALIFORNIANS FOR JOBS & CLEAN AIR: 2/8)

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# Events Calendar

April 7-9	<b>Eco Expo</b> will have three days of exhibits and seminars. April 9: Green Business Conference: 9am to 5 pm. Trade show hours: 11am to 6pm on Friday. Two additional trade show hours will be Sat, 9 am to 11 am. Advance registration is \$75, \$100 at the door. The Consumer Show (for the general Public) will be open from 11 am to 7 pm on April 8 and 9. Admission is \$7 for adults and children under 12 are free. For further information, call (818) 906-2700.	June 22	<b>Concours de Elegance</b> wants you to show your electric ar Stanford University, Palo Alto. Call Anna Cornell to show your car. (510) 685-7580.
April 22	<b>PG&amp;E in Salinas, CA is holding its Earth Day Celebration</b> in Toro Park. This is a beautiful location in which to show your Electric! Call Spenser Erickson for details at: (408) 755-3347	June 28-30	<b>Fourth Annual Alternative Energy and Fuels Conference</b> at Milwaukee Exposition and Convention Center. Contact Kevin Keene (608) 266-8110 or Jeffrey P. Knight, Dept. of Administration, Bureau of Transportation, (608) 267-7693.
April 23	<b>Contra Costa County's Earth Day!</b> 10 am to 6 pm at the Concord Pavillion. Admission is free. Those wishing to show their car at this EEvent, call (510) 685-7580.	July 11	<b>Sun Sprint of the Rockies.</b> An electric and solar race for all in Aspen CO. Individuals, high schools and colleges are encouraged to participate. For information call Zach Keele at (303) 872-3882. See article in last CE issue for more info.
May 20-28	<b>American Tour de Sol</b> from Waterbury CT to Portland ME via MA, VT and NH. Contact Nancy Hazard (413) 774-6051.	Aug. 11-13	<b>REDI Conference '95.</b> Followup to '93 REDI Conference. PV and Utilities, Financing, EV Marketplace where fleet operators meet EV Manufacturers. Plus more! Call (707) 459-1256, or fax a paper to submit: (707) 459-0366.
June 21-25	<b>An Interdisciplinary Conference on the Environment</b> will be held in Boston MA. (Details were in December 1994 CE).	Aug. 12	<b>East Bay Chapter Rally</b> (Tentative)
		Sept. 19-22	<b>Fourth Grove Fuel-cell Symposium</b> will take place in London, England. Contact the conference secretary at Elsevier Advanced Technology, PO Box 150, Kidlington, Oxford OX5 1AS UK Phone +44 (0) 1865 843721/ 843659. Fax +44 (0) 1865 843971

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