



# EEVC NEWSLETTER

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Now affiliated with EAA

## TRIP TO "EAA LAND" AND THE "HOME OF CALIFORNIA PETE"

Visiting Pete and Sue Cleaveland in the Bay Area of San Francisco is something that I have wanted to do for some time. When I received word of the EAA Achievement Award, Pete and Sue offered Dottie and me an invitation to stay at their home if we chose to fly out to California

to accept the award in person. I decided the time had come for us to visit our EEVC Newsletter headquarters in San Leandro, California, so we accepted.

Jerry Asher, chairman of the EAA chapter expansion, advised us to book Southwest Airlines for the trip. It was good advice. The flights to and from were on time and roomy. Even the clouds parted enough for some good sight-seeing.



*Dottie and Ollie Perry at San Francisco's Pier 39*

Pete's home sits across the bay from San Francisco, close to Oakland, and about 30 minutes northeast of Palo Alto. As you can see from the pictures Pete drove us to the typical tourist attractions in the Bay Area which were first time experiences for both of us. Jerry Asher insisted that

we visit the sea lions on Pier 39. The sea lions were back, at least some of them were. And this was good news.





*Ollie and your editor by a picturesque tree outside Hewlett-Packard headquarters*

For some unknown reason the sea lions disappeared for a few months last winter and nobody knew why.

The EAA business meeting and award took place at the headquarters of Hewlett Packard in Palo Alto. After the meeting, the Chairman of the EAA Board, Mr. Ron Freund, took Pete, my wife, and me for a ride in his professionally built electric RAV 4.



*(l to r: Pete, Ron Friend and Ollie outside the Tesla store in Menlo Park, CA.*

Our first stop was at the Tesla Headquarters. We were told that the European company that supplies the Lotus body for the Tesla has discontinued making it and therefore the production of the present line of Tesla sport cars has come to a halt. Emphasis will now be placed on the production of the forthcoming cheaper five passenger model.

The parking garage in Palo Alto that Ron chose to park in while we stopped for lunch had a reserved spot for electric cars and three free charging stations. After Ron plugged in we noted that there were three RAV 4s side by side all charging at the same time. These

vehicles have years of service with thousands of miles on them and are all still running fine. One of the drivers told Ron that his battery pack had 100,000 miles on it and all cells tested as if they were new.

At the end of the day Ron took us to a well-known California electronic discount warehouse and helped me purchase a portable hard drive kit to carry my electronic pictures in. There were no directions in the package but back at Pete's home I was able to put the hard drive in its case with an enclosed screwdriver (no instructions) while Pete cleaned his pistols.



*[Editor's note] While Ollie was here we took him for an afternoon at the local shooting range.*

It turns out that Pete is the earthquake warden of his block, responsible for communications when the next earthquake hits. Sue and Pete (as well as their neighbors) have stored water and food on hand as well as blankets, flashlights, battery powered radios, and other items required for survival, stored in their cars and sheds. When an earthquake hits many people will be stranded in cars so a wise driver is prepared to be stranded away from home. In the homes TVs and other expensive items are fastened to the walls which themselves are well anchored.

As you can see we had a great time visiting California Pete and the land of the EAA. From the beaches and piers to the hills overlooking them, where Pete took aim at a target with his muzzle loader pistol, it was a, a, ... Blast?

## **OLYMPIC MEDALS Oliver Perry**

### **Two Gold Medal Winning Cars**

Harriton High School students Josh Kass-



ner and Sean Keenan (seen here with teacher Robert Schwartz) built two perfectly constructed aluminum framed cars, each with precision fitted roller bearing axles perfectly positioned in their respective chassis. The cars were the fastest by far of any other cars and easily won the Gold Medal with no contest. Both cars were definitely eligible for the EEVC over-all best car award, especially in terms of workmanship and performance. These cars are definitely models for future car builders.

In the words of the Harriton Students: “We chose to use aluminum because it is light weight, sturdy, and easy to anchor motor, batteries, switches, wiring, and the lights to. We cut the aluminum with a hack saw and then super glued the parts together. The glue provided a stiff and easily made connection. We used a drill press to go through both sides of the aluminum chassis and this insured that the holes were in line with each other. We then inserted flanged bearings into these holes and selected a hollow aluminum axle that would cleanly fit through each bearing and still be light weight. This assured that the car would go straight with little internal resistance. The low weight frame and wheels provided low inertia for high acceleration.”

“We used a string wrapped around the motor axle and a larger pulley on the rear drive axle to connect torque from motor to drive wheel. Since we used the motor drive shaft we didn’t need a huge pulley on the drive axle to give us high torque.”

As the motor spun it wound up the string on its output shaft and spun the drive axle much like a fish pulling on the line spins a fishing reel.

### **Silver Medal**

Penncrest High School student Ron Tyson III won the silver medal with his coffee can steamroller.

### **Bronze Medal**

Radnor High School students Ben Croop and Greg Alexander won the bronze medal.

### **PSE&G Team Cup**

In 1998 New Jersey power utility PSE&G donated a cup award for the Physics Olympics that would be passed on from year to year to the High School that wins the team segment of the electric car event. The high schools that have won the cup the most times over the years have been Penncrest High School, Cinnaminson High School, Harriton High School and Radnor High School. This year Harriton High took the cup from Penncrest who has won the cup frequently in the past few years. (See picture and attached caption)

## **ABOUT THE RUNAWAY PRIUS**

### **Tullio Falini**

Several of our members have Priuses and I wanted to share what I did with our 06 Prius. To be safe I removed our floor mats. In the unlikely event of a runaway motor (the Prius has no red button emergency power kill like my Kewet did), I practiced putting the car in NEUTRAL while moving very slowly. The Prius is very awkward to put in Neutral and to have practiced this is, in my view, important. To get in neutral, the Lever, which is hard to see and use because it’s not on the steering column, should be moved all the way to the left carefully being careful not to let it go up or down. Then it should be held for a few seconds in the left position until neutral engages. Putting the car in neutral should solve a runaway motor. I believe one should not push the power button to turn the car off until safely stopped because I would assume, pushing the power button while moving fast (or any speed) results in losing control of the car. Like a computer (the car is one big computer), to force the power off the power button should be pressed and held for a few seconds (not pushed in a repeating fashion like one would do in a panic). I held

the power button (and killed the power) while moving slowly and the car wheels locked up (as if the brakes were slammed suddenly) and screeched to a halt. I don't know what would happen if the power were cut off while moving fast. Perhaps the car would roll. Perhaps some of the persons in Calif. who were killed in a runaway Prius killed the power while moving fast, which rolled the car. I still like the Prius and have confidence in it, as the runaway problem appears to be in a very tiny percentage of cars. However, to be extra safe, we are not taking our Prius over 55 mph (so the brakes can stop the car, if need be). A few months back, I looked at the 2010 Prius (new/next generation) and honestly felt the car had too much electronics for my liking. While it's nice to have the car automatically parallel park, I do not like the automatic braking if, for example, a deer jumps in front of you and you don't see it. What if a truck is behind you going 70 mph when the deer jumps out in front of you? I would rather have the full control of the car remain with me, the driver. I would like to see Toyota slow down on the electronic "drive-by-wire" technology. Like anything else, let's pioneer into this new technology of transportation slowly, preceding with caution. Happy Motoring !

### **ONE AUTOMAKER GOES, ANOTHER STAYS By California Pete**



New United Motor Works Inc. (NUMMI), in nearby Fremont, CA, the last automotive assembly plant on the West Coast, rolled out its last car on April 1. General Motors had pulled out of the joint venture some months earlier, and Toyota just pulled the plug on what was left. But NUMMI is not the last auto assembly facility on the West Coast, although it was undeniably the largest. Tesla Motors of San Jose announced on March 16 that it would continue producing its signature Roadster (and even increase production by 40 percent) through December, 2011 while gearing up to make the Model S sedan.

About manufacturing plants: AP reported on March 25 that the city of Downey, in Southern California, had approved a plan to allow Tesla to lease 51 acres at some ex-NASA property. No word yet from Tesla about that.

### **Giving CSIs a bad name**

San Francisco, which has a long association with crime (think Dashiell Hammett and Sam Spade) has suffered a severe embarrassment. First there were reports that as many as 750 drug cases may have to be thrown out because of reports that a crime lab technician had been sampling drugs seized as evidence. Then came the news that the department's evidence warehouse was not only disorganized and messy, but infested with feral cats — cats that had been introduced on purpose some years ago to help with the mice and rats!

### **Touring the grittier places**

On the other hand, perhaps the city can capitalize on its sleaze. *The New York Times* reported on April 11 that an entrepreneur wants to organize tours of the upper Tenderloin, with special attention paid to the large number of once-grand hotels now converted to SRO (single room occupancy) hotels for the poor and the previously homeless. While it has been cleaned up a bit (most of the porn theatres are gone, for example), there is still plenty of out-open street-level drug dealing and the like. And let's not forget the history: people like Jerry Garcia and Frank Capra lived there, and the Grateful Dead, Creedence Clearwater Revival, Jefferson Airplane and Miles Davis played or recorded there.

And perhaps there will be fewer drug cases going forward, now that the initiative to legalize recreational pot use statewide has secured a place on the ballot for the next election. Ostensibly it's so the cash-strapped state can tax the marijuana trade, but it also might help relieve prison overcrowding.

### **21ST CENTURY AUTOMOTIVE CHALLENGE AT PENN STATE "Spirit of the American Tour de Sol"**

**May 21st - May 23rd, 2010**

Competition for electric, hybrid, and bio-diesel vehicles. Students, hobbyists, and owners of production cars welcome.



The main Penn State campus at State College is the site for the best and most complete electric vehicle competition in the U.S., following in the tradition of the American Tour de

Sol. Come for real world around town competition with V2G included plus autocross and range testing on Penn State Track.

The competition concludes Sunday May 23rd with long range track testing and the challenging "Tour de Thor" (a mountainous 200 mile plus run) for bio-diesel vehicles and long range EVs like the Tesla.



Competitors, spectators and volunteers are all welcome.

For information contact Dr. Joel Anstrom, j a n s t r o m

@enr.psu.edu, 814-863-8904.

### ELECTRAVAN PART WANTED

Robert MacConnell, a member of the East Bay Chapter of EAA, is looking for a Jet Electra van 600 EV based on the Subaru Sambar van. It has a broken left front suspension torsion bar spring, part number 621001391 (FLH).

The part is not available through the Subaru dealer parts network and he has been advised by a metallurgical engineer that a successful repair of the old part is unlikely.

He can be contacted by mail at 5819 Huntington Ave., Richmond CA 94804-5509, by phone at 510-524-7224, or by email at robmac1958@gmail.com

### MIKE MANNING RECEIVES AWARD



In January Mike Manning was honored as EEVC Member of the Year for 2009. Here he is receiving the award.

### NEWS UPDATE

#### From the New England Electric Auto Association-- via Ollie Perry



Photo: Shimla Anupam

If you google "Factory Five Hot Rod SEMA" or Amp=D Roadster you will eventually find information on a state of the art green hot rod that has over 600 foot pounds of electric motor torque, goes from zero to 60 mph in 3 seconds, and has a range of 100 miles. It has a bus electric motor, software by Solidworks and a very complicated lithium ion battery pack built by A123.

This vehicle has been on display for months at various shows. Supposedly a documentary on the building of the vehicle was due out soon. However, I was informed by a confidential source from the New England Electric Auto Association, who firmly stated

that he participated in taking the vehicle apart in order to return the body, battery pack, and various electrical parts back to the companies who donated them to the cause. Evidently a dispute as to who owned the vehicle broke out among the promoters and resulted in the vehicle being quickly and secretly dismantled.

### **ConocoPhillips Energy Prize**

Entries are being accepted for the 2010 ConocoPhillips Energy Prize sponsored by ConocoPhillips and Penn State. The program, now in its third year, will award up to \$300,000 for the best concepts that promote advances in energy diversity, improve energy efficiency, or combat climate change.

Entries will be accepted through May 21 from U.S. residents at least 18 years of age at the time of entry. Entrants must submit a comprehensive proposal at [www.conocophillips.com/energyprize](http://www.conocophillips.com/energyprize) or by mail.

For more information go to [www.conocophillips.com/energyprize](http://www.conocophillips.com/energyprize).

### **EV price wars?**

On March 30 CNN Money reported that Nissan plans to sell its Leaf EV with a sticker price of \$32,780, which would come to \$25,280 after a \$7500 federal tax credit. This is considerably less than the \$40,000 GM plans to ask for the Volt.

### **Electric Fiat in the works**



Chrysler has revised its EV plans since its purchase by Fiat, according to a March 22 AP story. The company now plans to build an electric version of the Fiat 500 for sale in the U.S. by 2012, two years behind the Nissan Leaf and the Chevy Volt. Development is still under way, according to the report, and Chrysler engineers are trying to get a 100 mile range. An ICE version of the 500 is planned for this year.

### **Making EV batteries in Michigan**

Several companies have announced plans to build EV batteries in Michigan. LG Chem Ltd. and its U.S. subsidiary Compact Inc. plan to break ground on a 650,000-square-

foot battery cell plant in Holland, MI, with production scheduled to begin in 2012, according to AP. Product will be used in GM hybrids and the Chevy Volt.

For its part Ford announced on April 12 that it would be manufacturing hybrid vehicle battery packs at its Rawsonville parts plant near Ypsilanti, says AP.

And GM announced on April 12 that “it will spend \$8 million to double the size of its suburban Detroit lab that engineers and tests electric vehicle batteries,” says another AP report. While it will not create any new jobs, it “will allow the automaker to centralize its battery testing and do tests in-house rather than with outside contractors.”

### **More i-MiEVs coming**

On March 23 AP reported that Mitsubishi Motors has announced plans to more than triple production of its i-MiEV over the next three years. Plans call for “9,000 i-MiEVs in the upcoming fiscal year starting April 1, some 18,000 in the following year and 30,000 in the fiscal year starting April 2012.” U.S. sales are expected to begin in 2011.

And on April 1 a story by AP Business Writer Yuri Kageyama reported that the i-MiEV had become the first mass-market electric car in Japan, selling for ¥2.8 million (\$30,500) after government incentives.

In addition, says the report, “Chinese automaker BYD started retail sales of its new electric car, the F3DM, for the equivalent of \$25,000.”

### **Volt 40-mile EV range confirmed**

Recent real-world tests show that the Chevy Volt does indeed go 40 miles on a charge, according to an April 13 AP report. Six cars built on an assembly line were tested “at the company’s proving ground and on roads around Detroit,” according to the story.



*left: The first pre-production Chevrolet Volt rolls off the line at the Detroit-Hamtramck manufacturing plant. Photo by John F. Martin for Chevrolet.*

This follows an April 1 announcement from GM that the first pre-production Volt rolled off the line at the Detroit Hamtramck Assembly Plant on March 31. Pre-production Volts will not be sold at dealerships, but will be used for quality checks of the production system.

### **2009 a record year for wind energy**

The U.S. wind energy industry installed 10,000 MW of generation in 2009, the largest year in U.S. history, according to the American Wind Energy Association's annual report released April 8. That's the equivalent of three large nuclear plants, the AWEA said.

The total U.S. wind power fleet stood at about 35,000 megawatts as of the end of 2009.

Yet we may not be in first place all that long, according to *Bloomberg News*, which on April 12 cited a statement from the Global Wind Energy Council that China has overtaken Germany as the second-leading wind power nation.

And while The council forecast that the world wind power capacity will increase by 160% over the next five years, "Merrill Lynch said it's 'bearish' on prospects for wind power demand in the U.S. because many states have exceeded their renewable-energy goals and lower natural gas prices make wind less competitive."

### **Navistar tests electric truck**

On March 22 AP reported that Navistar plans to produce 400 electric commercial trucks as part of a joint venture with UK-based Modex Limited. Vehicles are being test-driven around Monaco, Indiana. Backed by a \$39.2 million federal grant, production is planned for a converted RV plant.

### **FedEx, too**

On March 29 AP reported that FedEx Corp. has announced that "it will put four electric trucks into service in the Los Angeles area starting in June. They will be the company's first all-electric parcel delivery vehicles in the U.S." The company bought some hybrids in 2004, the report says, and is buying EVs "from two different suppliers to gauge their reliability." Two of the trucks are from Navistar's Indiana plant.

### **Ford shows electric trucks in L.A.**

A story by Susan Carpenter in the *Los Angeles Times* for March 3 reported that Ford Motor Co. showed its first EV at the Petersen Automotive Museum. The Transit Connect Electric is, according to the article, an "electric version of a light-duty cargo van that has been available globally since 2003 and has sold more than 600,000 units." and "is the first of four electrified vehicles the Detroit manufacturer plans to bring to market by 2012. The Ford Focus Electric passenger car is due out next year; plug-in and next-generation hybrids should be available in two years."

### **Lithium battery research in North Carolina**

A March 17 AP story reports that Bessemer City, NC is becoming a hotbed of lithium battery research. That's where FMC Lithium has its Center for Lithium Energy and Advanced Research (CLEAR), which attracts visits from makers "of rechargeable lithium ion batteries from all over the world."

### **Fuel cell company looking up**

An April 9 story by Mark Boslet of Greentech Media reports that long-established fuel cell maker FuelCell Energy may be finding increased business due to "a recent decision by the California Public Utilities Commission to permit two of the state's big three utilities to use natural-gas fuel cells in customer deployments."

"The company's molten carbonate fuel cell boasts 47 percent efficiency at turning fuel to electricity. That efficiency rises to as much as 90 percent if the cell's heat is used to warm buildings or pools. (Molten carbonate cells run hot.)"

### **VW shows hybrid Taureg**



On March 31 Volkswagen of America unveiled its second-generation Taureg SUV, its first hybrid, at the New York International Auto Show. The vehicle pairs a 3.0-liter supercharged, direct injection V6 gasoline engine with a special electric motor and an eight-speed automatic transmission that yields approximately 25 and 21 mpg during highway and city driving respectively. With the V6 engine and electric motor combined, a total of 375 horsepower and 428 lbs.-ft. of torque are available, allowing for full towing capacity of up to 7700 pounds.

### **A123 growing despite losses**

On March 10 *Greentech Media* reported that A123 Systems, which has never made a profit, nevertheless sees a bright future. "The Watertown, Mass.-based battery manufacturer said that its net loss for 2009 came to \$85.8 million, higher than the loss of \$80.5 million in 2008. The good news, however, is that sales are growing fast. Revenue for 2009 came to \$91 million, a 33-percent jump from the year before. Total battery capacity shipped for the year came to 66.5 million watt-hours, well above the 44.9 million watt-hours shipped in 2008."

## **COMING EVENTS**

### **NHA Hydrogen Conference & Expo**

May 3-6, Long Beach, CA. Go to [www.hydrogenconference.org](http://www.hydrogenconference.org).

### **International Conference Chassis Electrification**

April 21-23, Wiesbaden, Germany. Go to [www.chassis-electrification.com/Event.aspx?id=254670](http://www.chassis-electrification.com/Event.aspx?id=254670)

### **Alternative Fuels & Vehicles National Conference + Expo 2010**

May 9-12, Las Vegas. Go to [www.afv2010.com/](http://www.afv2010.com/)

### **Energy Efficiency Global Forum & Exposition (EE Global)**

May 10-12, Washington DC, [www.calstart.org/events/calstart-events/09-07-29/Energy\\_Efficiency\\_Global\\_Forum\\_Exposition.aspx?Events=EventItem](http://www.calstart.org/events/calstart-events/09-07-29/Energy_Efficiency_Global_Forum_Exposition.aspx?Events=EventItem).

### **The Time Trial eXtreme Grand Prix electric motorcycle race**

May 14-16, Sonoma, CA. Go to [www.infinonraceway.com](http://www.infinonraceway.com).

### **SOLAR 2010**

May 17-22, Phoenix. Go to [http://ases.org/index.php?option=com\\_content&view=article&id=18&Itemid=147](http://ases.org/index.php?option=com_content&view=article&id=18&Itemid=147)

### **Advanced Automotive Battery Conference**

May 19-21, Orlando, FL. Go to [www.advancedautobat.com/AABC/index.html](http://www.advancedautobat.com/AABC/index.html)

### **Spirit of the American Tour de Sol**

May 21-23, State College, PA. For information contact Dr. Joel Anstrom, [janstrom@enr.psu.edu](mailto:janstrom@enr.psu.edu), 814-863-8904.

### **10th Challenge Bibendum**

May 30- 2 June 2, Rio de Janeiro. Go to [www.challengebibendum.com/challenge-Bib/AfficheServlet?Rubrique=20070807132926&Langue=EN](http://www.challengebibendum.com/challenge-Bib/AfficheServlet?Rubrique=20070807132926&Langue=EN).

### **Transports Publics 2010,**

June 8-10, Paris. Go to [www.transport-publics-expo.com/en/2010/accueil/index.php](http://www.transport-publics-expo.com/en/2010/accueil/index.php).

### **Formula Sun Grand Prix**

June 16-18, Cresson, TX. Go to <http://americansolarchallenge.org/events/asc2010/formula-sun-grand-prix-2010-2/>

### **American Solar Challenge**

June 19-27, Tulsa, OK to Chicago. Go to <http://americansolarchallenge.org/events/asc2010/american-solar-challenge/>

### **Southern Electric Vehicle Expo**

Oct 29-31, Asheville, NC. Go to [http://sevepo.com/e107\\_plugins/calendar\\_menu/event.php?1288378800.event.1](http://sevepo.com/e107_plugins/calendar_menu/event.php?1288378800.event.1)

### **EVS25**

Nov 5-9, Shenzhen, China. Go to [www.evs25.org/event/2009ddc-en/index.html](http://www.evs25.org/event/2009ddc-en/index.html)

## **MEETING SCHEDULE**

Meetings are held in Room 49, Plymouth-Whitemarsh High School, 201 East Germantown Pike in Plymouth Meeting, PA, and begin at 7:00 p.m. Note that here are no July or August meetings.

May 12

June 9

Sept 8

Oct 13