

Charged Up



ELECTRIC VEHICLE ASSOCIATION OF SAN DIEGO (EVAOSD)

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Vice President:	Whistler Rhoads
Treasurer:	Lloyd Rose
Program Chairman:	Joseph Gottlieb
Newsletter Editor:	Staff
Webmaster:	Russ Lemon
Librarian & AV:	Lloyd Rose

Regular Meetings: 4th Tuesday of every month (January thru November), at 7:00 pm,

Location: San Diego R.T.C. (Pearson Fuels), at 4001 El Cajon Blvd. and Interstate 15

Place: In the Auto-torium

Next meeting: Tuesday, Aug. 26, 2008 @ 7:00 p.m.

Program: General EV Topics

DC Controllers in Fierce Fight.

A lot of controllers companies are trying to beat Café Electric, but the Zilla might be extinct.

By Joseph Gottlieb

Five new controller companies are currently trying to steal away series DC motor controller sales. You have limited options when it comes to series DC motor controllers. So let's look at the current options for a standard conversion (144V):

- 1) Curtis – Up to 500A. They are the most common controller in the EV industry. They have the signature Curtis whine and are fine for most conversions. Some reports of a drop in quality control.
- 2) Zilla – All hail currently the best controller on the market. They can go up to 2000A. **Otmar is shutting down production of the Zilla.** Get your order in now! He will stop taking orders soon. Hopefully, someone will pick up his business and start building them again in the future.
- 3) DCP Raptor – They are back. Or did they really leave? Whatever the case, you can still get a new 1200A controller for a hefty price. One advantage of this controller is the use of a magnetic throttle (less failure and lower noise than potentiometer based).
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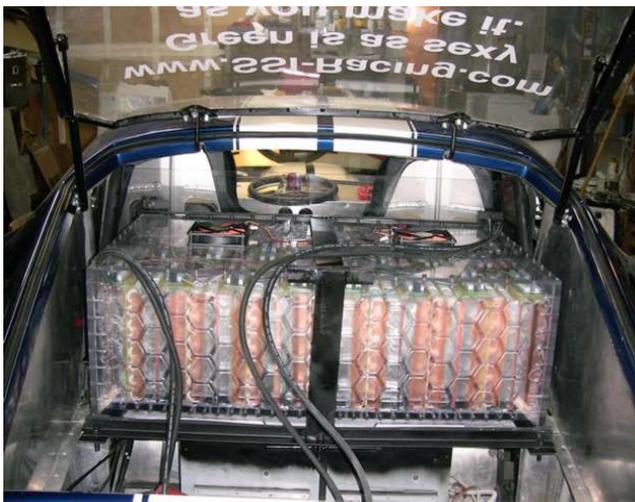
MESSAGE FROM THE PRESIDENT

Stop telling me 2 years! I finally figured it out. 2 years is the magic number between electric vehicle “vaporware (stuff that exists only in the clouds)” and reality. If you hear a marketing department say 2 years, it’s the kiss of death in my opinion. I have heard the Volt “in 2 years”. That was 2 years ago. Also, the Phoenix Motors SUT, Zap Alias, Flybo 3000, Spark-ev Comet, and Miles Automotive. Why 2-years? My thoughts are it’s enough time for us to get over the anticipation. During the 1st year, I call them relentlessly asking about progress. After the 2nd year, I am pretty well done bugging them about it. Have I been surprised when a company actually goes beyond the 2-year mark and still brings the product out? Not yet, but I still hold hope.

Now, there are companies that say less than two years. Apera says they are still on for the end of this year. I believe them. A buddy at Green Vehicles says their Highway speed Traic three-wheeler will be out this year. I believe it. However, Mitsubishi announced the iMiEV is coming in 3 years.

Great, now I have to figure out what THAT means.

-Joseph



New 2SSIC Battery Pack – what a beauty!



Starting with our July Meeting and Minh Duong’s presentation of his design & build unique personal EV.



Tom Boyle reports that, “He sold his baby to someone that took it to AZ.” Tom was speaking of his BugE, but not to worry Tom also said that he is building another EV for the Kick Gas Festival.

Lee Campbell lost (failed) another controller so he is upgrading to a Zilla to support his heavy EV truck.

We moved on to California Center for Sustainable Energy EVent “Street Smart 2008” with an impressive show of vehicles and presentations.



Joseph and Lloyd met with Chris Paine who wrote and directed “Who Killed the Electric Car.” Chris told us that he is working on the sequel titled “The Revenge of the Electric Car.”

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From the Treasurer. With more events coming our way, show events and racing events, I found it interesting that this article depicts how Electric and Hybrid Vehicles can become a part of the racing landscape and maybe even its future!

Lithium Technology Corp. In Marketing Agreement for Li-ion Batteries for Advanced Motor Sports

18 AUGUST 2008



The Li-ion-based PHEV Apollo racer.

NEWSFLASH!

What:

Chris Paine, Writer/Director of "Who Killed the Electric Car" is the Grand Marshal for the inaugural Kick Gas Festival.

When:

Sunday, October 12, 2008.

Where:

Barona Drag Strip (baronadrags.com)

Following the performance of their plug-in hybrid electric race car concept at the Nürburgring 24 hour race (ADAC Zurich 24h-Rennen) in May ([earlier post](#)), Lithium Technology Corporation (LTC) and [Hybrid Racing AG](#) have [entered](#) into an agreement to market specialized lithium-ion batteries to power advanced vehicles for the motor sports industry. The applications will include batteries for cars, boats and planes to be used in consumer and professional racing vehicles.

LTC supplied a 9 kWh GAIA battery pack comprising 90 high power 27 Ah cells connected in series for the Apollo/HHF Hybrid race car (HHCC). The battery was charged prior to the race and recouped energy from braking during the race. Current electric range of the vehicle is 50 kilometers.

The HHCC is equipped with a 3.3-liter V8 bi-turbo gasoline engine augmented with a 100 kW electric motor. The engine has rated power of 382 kW (520 hp) at 7,000 rpm, and maximum torque of 580 Nm (428 lb-ft) at 4,000 rpm. The motor delivers torque of 220 Nm (162 lb-ft) Total available power from the hybrid is 630 hp (470 kW). Maximum speed is 300 kph (186 mph).

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The battery pack was [sized](#) to allow the car to do a lap on the Nürburgring (25 km) relying on electrical power only. Hybrid Racing raced the car with the battery at a medium charge level, providing about 4-5 kWh of battery capacity. *This meant that if we had transmission problems at the beginning of a lap, we would be forced/able to return to the pit stop at a very low speed of < 50 kph. If this happened 6-8 km before the end of a lap then it was possible to reach the pit stop under full electric power going at up to 130 kph.* —Heinz-Harald Frentzen, President of Hybrid Racing AG

At the Nürburgring 24, the HHCC did suffer technical problems with its conventional powertrain, and [finished](#) the race solely propelled by the electric motor. *You can look at the results from one of two perspectives: Firstly, that we had problems with the transmission in the conventional system, and secondly, that the concept of reclaiming energy when braking was more successful than we expected.* —Heinz-Harald Frentzen

The large-format 3.6V, 27 Ah GAIA cells in the HHCC pack have a specific energy of 100 Wh/kg and energy density of 264 Wh/L; with specific power (30 s pulse discharge) of 950 W/kg and a power density (30 s pulse discharge) of 2,100 W/L. Cycle life at 20°C and 100% DOD is 400 cycles to 80% nominal capacity.

With several more months experience with the battery technology, Frentzen, an ex-Formula One (F1) racer and 1997 vice world champion, decided that there was an immediate need for LTC's products in the advanced motor sports world. *We are confident with [LTC's] power and energy solutions and are excited to form an extended partnership with a company that will not only meet our battery needs, but will help motor sports to regain its position in the forefront of technical development and push the advancements of cars outside of the racetrack to be more energy efficient. We are going to promote and market LTC's batteries to all vehicles that require advanced batteries that are light weight and powerful for improved performance.* —Heinz-Harald Frentzen



Progress Pictures of the Cadillac by Bob's Automotive

UPCOMING EVENTS:

Kick Gas Festival Featuring the 2008 NEDRA Nationals October 12, 2008

Grand Marshall to be "Who Killed the Electric Car" Director Chris Paine

This year's 2008 NEDRA Nationals will be held October 12, 2008 in conjunction with the *Kick Gas Festival* at the Barona Drag Strip in San Diego, California.

NEDRA Nationals Drag Racing	EV 1/8 Mile Bracket Racing Championships
EV 1/8 Mile All Out Championships	Hybrid Shootout
Alternative Fuel Vehicle Show	Alternative Fuel Exhibit
Newscaster and Celebrity Hybrid Shootout	ECO Vendor Fair
Live Music	And more . . .

Register your EV through Paul Thomas at pthomas@kickgasfestival.com.

See more information at the [Kick Gas Festival](#) website

AltCar Expo 2008 / Santa Monica, CA – Fri., Sept.26 & Sat., Sept. 27

Austin Energy AltCar Expo – Fri., Oct. 17 & Sat., Oct. 18

C2EC2T weekend workshop (SIGN UP NOW!!!)

Location: One mile east of downtown San Diego next to Interstate 5 and California Highway 163 with plenty of on-site parking.

Cost: \$300 for workshop fee plus \$100 for EV conversion DVD, "Convert It" by Mike Brown, W/S workbook, T-shirt and a daily light lunch. (\$400 total)

Day and Time: Friday and Saturday only from 8am to 3pm

Car to be converted: 1995 VW Cabriolet Convertible. Also on-hand will be a 1990 Cabriolet mock-up

Only 20 slots available for this FALL workshop. The next weekend workshop may come after the holidays in January of 2009. The first 20 people that I record payment from will be admitted to the workshop. Best way to make payment is via my Pay Pal account at my e-dress below. Or, you may send a check to the address below. The weekend workshop will follow the same basic format I have used in the past four years of C2EC2T ten day workshops in which we successfully converted gas commuter cars to EV commuters.

Pay Pal to quevedo@cox.net or, mail check to Abrán Quevedo, 2325 B Street, San Diego, CA., 92102
MORE WORKSHOP DETAILS FORTHCOMING AFTER PAYMENT IS RECEIVED, yours for clean air. Mr.Q

Green Tribe Event

Date: Sept. 21, 2008

Time: 10:00 AM

Location: 60 Miles out HW 8 from Hotel Circle. Meet at Campo Casino. Location is 3 miles from Campo Casino.

Contact info: Trisha Frank 619-825-9435
Trisha.Frank@cox.net

(DC Controller continued from page 1...)

So who are the new upcoming contenders?

- 1) Phillips Aerospace - Leading the pack with plans to dethrone the Zilla, they have a long way to go.
- 2) Logisystems – They are one of the first IGBT (type of drive) DC motor controllers of this size. Their max is 1000A (with a 550A and 750A model). They are ramping up production, working out a few bugs in their existing design and hoping to be the controller of choice via cost and American made. They also are going after the Zilla.
- 3) Belktronix – A complete EV solution. The package is a controller, battery charger, dc/dc, and the kitchen sink. This all in one 500A solution has a BIG price advantage. Our own Manny Gomez has a car built with it and is running great.
- 4) Another “to remain nameless for now” company – I have been working with a company that wants to enter the arena and beat the Zilla. They are a company very capable of large power systems and have a good shot at doing it. Right now, it’s just a plan, no actual product.
- 5) Kelly Controllers – The Chinese replacement for the Curtis. They have a 500A solution that has a lot of bells and whistles. Their quality control needs to go up, but their service is very good. Price is the big factor with them and they have a chance at getting Curtis to notice them and hopefully force Curtis to put more/better technology in their controllers.

(EV Grins continued from page 1...)

Chris is always working and while he was in San Diego he took Dave Grove’s ’33 Rolls Royce EV for a spin and screen test. During the Street Smart Event Louis Palmer and his crew rolled in as they are touring the world with their solar assisted EV; for more information in our area see <http://www.solartaxi.com/blog/2008/07/29/sandiego/>.

Mr. Palmer gave an impressive presentation for which he received a standing ovation then he and a member of his crew went out to Linda Irish’s Twike to see an EV that they knew well as her EV was from where they started their World Tour.



Then the 4th Annual C2EC2T EV Conversion Workshop started the Monday after our meeting with 35 students from North and South America teaching the conversion from a gasoline commuter to an electric commuter car. Abràn and Jon facilitated the workshop and invited Joseph and me to start off with an introduction to EVA support and organizations.



The EV Conversion Workshop was a success and carried in the TV and print news reports.

<http://www.signonsandiego.com/news/metro/20080809-9999-1cz9hybrid.html>

I am at the end of the page with more to tell and to share; come to the EVAOSD meeting and we can share more. Stay plugged in and keep charging ahead.

EVAOSD Newsletter Monthly, 6 pages, covering San Diego County and Southern California
Subscription rates: \$12.50 per year (\$15 foreign, via sea mail) Additional newsletter items can be found on the E-newsletter at evaosd.com.

EAA Current Events Bi-monthly newsletter of the Electric Auto Association
 Subscription rates: \$39 per year (\$45 foreign), includes a subscription to the EVAOSD Newsletter. **Please send directly to EAA** using form found at membership@eaaev.org and **indicate** EVAOSD or San Diego Region

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Cell Phone (optional) (_____) _____ - _____

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Please make check or money order payable to: EAA and reference EVAOSD. Send this form and payment to: Lloyd Rose, EVAOSD Treasurer; 738 W. Washington Ave., Suite D, Escondido, CA 92025

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