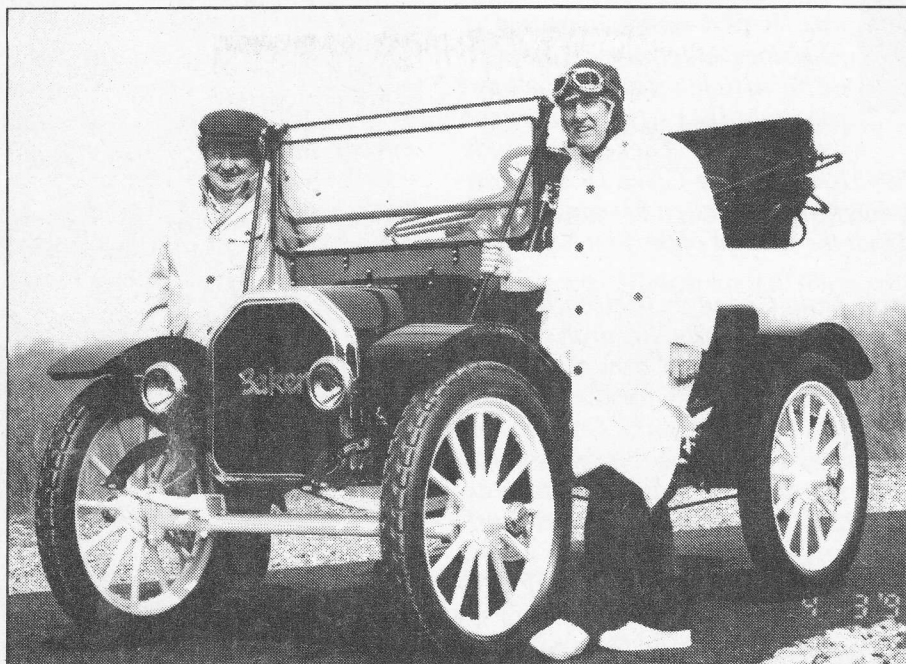


CURRENT EVENTS

July 1995

Promoting the use of electric vehicles since 1967

Vol 27 No. 7



Coast-to-Coast Record in Antique Electric Car

LIONVILLE, PA - The midnight blue runabout with creamy yellow wheels and black trim glides down the highway with almost magical stillness. It looks like a gasoline-powered horseless carriage of old, but the only sound from the motor is a faint hum.

However when the antique electric pulls in to charge, it plugs into a state of the art fast-charging system shoots the juice to its 6 volt batteries, refilling the car in about an hour. This marriage of antique and ultra-modern is the creation of Pennsylvania developer Raymond Carr.

Carr, 70, is driving from Pacific to Atlantic in a 1912 battery-powered Baker runabout charged by a Norvik smart-charge unit. Success will put him in the history books for making the first-ever coast to-coast trip by an antique electric. Carr's journey started on May 28 in Astoria, OR. He will spend June on the road and reach Atlantic City by July 4.

"This trip represents a real challenge — for me, for my little car, and for automobile manufacturers," he said as he prepared for his 3,100 mile drive. "I want to see if we can go the distance, to prove that you can do it even in an 83-year-old

electric car and get the manufacturers to see that all they have to do is give you some speed and some distance to make modern electrics practical."

Carr's Baker Electric is the type of battery-powered automobile that enjoyed vast popularity during the first two decades of the 20th century, and may well herald the future of 21st century motoring.

Baker Motor Vehicle Company was founded by Walter Baker, an inventor and a pioneer in the ball-bearing industry. He began producing cars in Cleveland in 1898. Baker's first vehicle, an electric buggy so small and light that it weighed only 550 lb went to Thomas Edison. Edison's first automobile was a Baker Electric, purchased because of its fine engineering features.

Carr's runabout, built in 1912, was probably the 7,746th vehicle built by the company (which is still in business today!) as Linde-Baker Material Handling Co, which makes electric forklift trucks.) An 18 horsepower electric

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EAA Info: 1-800-537-2882

Petro \$\$\$ Fund C M 2

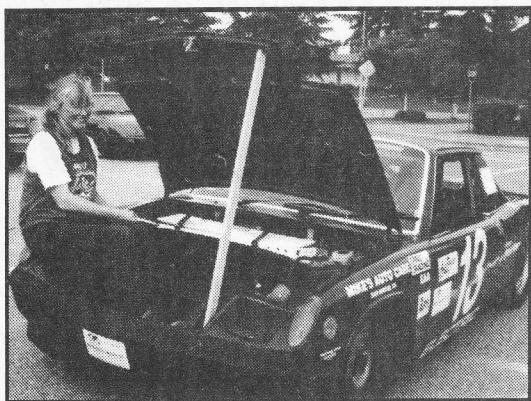
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Petro \$\$\$ Fund C M

by Clare Bell

The anti-EV Carnegie Mellon Science study see News in Brief, p. 11, first story), appeared in Science Magazine on 5/11/95. The article's footnote 19 acknowledges two research grants." These include

National Science Foundation grant EEC-8943164, from the Green Design Consortium of the Carnegie-Mellon University Engineering Design Research Center and NSF grant 9319731. It might be noted that the amount of the first NSF grant is \$13,571,655.

This information is publicly available from Carnegie Mellon University. They describe the purpose of their Engineering Design Research Center: "The goal of the Engineering Design Research Center at Carnegie Mellon University is to provide the research and educational base for the development and integration of design methodologies that will make US industry preeminent in design practice." This includes evaluating "marketability (or user acceptability)". The EDRC's directory lists industry affiliates. Among them are BP America, Exxon Research and Engineering, Mobil R and D, and Shell Development. The Green Design Consortium of the ERDC "is open to industrial partners interested in participating and guiding consortium projects."

Membership (on the order of \$10-20K yearly) benefits include:

"The opportunity to provide input on research direction and suggest specific research programs".

"Access to Carnegie Mellon University laboratories and researchers, Green Design research data, working papers, and government research grants through cooperative university proposals."

NSF grant 9319731 totals \$450,000. The investigator is Lester B. Lave, for a Management of Technology program. This grant discusses developing a system to measure the environmental consequences of alternative products or designs. It is to be implemented in the the design of printers for a large computer company, but there is a statement that says "The Ford Motor Company will work with us in transferring the research results...to quite a different setting."

Say, perhaps the (incorrect) "environmental consequences" of EVs and the negative effect of that on their "marketability (user acceptability)"?

Robert Hahn, the "environmental economist quoted by writer Peter Passell, is a member of the American Enterprise Institute, which has close philosophical and political ties with the American Petroleum Institute. As readers of CE and the Los Angeles Times may recall, API poured \$24 M

Continued on page 9

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Current EVents Staff

Managing Editor

Clare Bell
271 Molina Drive
Santa Cruz, CA 95060
Tele: (408) 469-9185
Fax: (408) 469-3714

Contributing Authors

Mary Ann Chapman
Robert Friess
Pam Anderson
Bruce Parmenter

News In Brief

Ruth Shipley

Calendar of Events

Anna Cornell

Photography Credits

Ray Carr

Advertising & Production

Susan A. Hollis (PCTEK)
(408) 374-8605
Fax: (408) 374-8750
18297 Baylor Avenue
Saratoga, CA 95070

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.

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For information on new membership or change of address, please send your requests to:

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2710 St. Giles Lane
Mountain View, CA 94040

EV Grand Prix Electric Racers Top 100 MPH

Richmond, VA. The second annual EV Grand Prix, hosted by Virginia Power, (and, for the first time conducted by EVTC (Electric Vehicle Technology Competitions, Ltd.) was held on May 5 and 6 at Richmond International Raceway with entries from 19 high schools and 8 universities from across the United States.

Along with a High School Student Electric Competition that allowed students to compete against each other in such areas as acceleration, design, braking and handling, range and oral presentation, there was the High School Feature Race and ABB University Spec Series Feature Race.

Northampton County East of Virginia took the overall first place position in the Student Electric Competition, leading the braking, handling, acceleration and range. Other leaders were Chesapeake High School in the acceleration competition, Hermitage Technical Center in design, and Central Shenandoah Valley School in the oral competition.

The winner of the 35 lap High School Challenge Feature Race was Gloucester High School of Gloucester, VA with a time of 25 minute and 58 seconds. The high school vehicles, internal combustion sedans converted to electric drive, achieved average lap speeds of over 69 mph on the 3/4 mile

Richmond International Raceway track.

In the 50 lap ABB university Spec Series Feature Race, the first place spot was claimed by Case Western Reserve University of Cleveland OH, with a time of 26 minutes and 58 seconds, an average speed of 79 mph. Fast laps for these open-wheel vehicles exceeded 100 mph.

The next race held by EVTC for electric vehicles will be the Cleveland Electric Formula Classic, July 21-23 as part of the Medic Drug Grand Prix of Cleveland, Presented by Dairy Mart. For more information, call Stacy Harmon at 602-256-2599.

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EVs on the Info-Highway!

by Bruce Parmenter

There is a lot of activity on the Internet these days, and at least three places where you can get EV information on the World Wide Web (WWW) (These are in addition to the "EV Discussion Group" described below.)

Jeff Kester in Beverly, MA runs GreenWheels, an EV conversion shop. He has put extensive information about EVs on the WWW. There is an EV source directory, several pictures and a lot of information about the EAA. If you have a "browser" and access to the Internet, check it out at:

[HTTP://NORTHSHORE.SHORE.NET/~KESTER/WELCOME.HTML](http://NORTHSHORE.SHORE.NET/~KESTER/WELCOME.HTML)

(don't forget the tilde).

EcoElectric Corporation in Tucson, AZ has also put out general EV information and current news on their WWW homepage in addition to company information. Check it out at:

[HTTP://WWW.PRIMENET.COM/~ECOelec/](http://WWW.PRIMENET.COM/~ECOelec/) (don't forget the tilde)

The University of Hawaii has several pictures of EVs on their WWW pages: [HTTP://WWW.EV.HAWAII.EDU](http://WWW.EV.HAWAII.EDU)

Electric Vehicle Discussion Group Mailing List

If you have time, I recommend that you subscribe to the EV List out of San Jose State University. It's, free, is available to anyone with access to Internet mail, and you can signoff anytime. It connects you to the Internet, which gives world access to everybody who is EV interested. There you can pose questions, gather information, etc.

Quickly - How to subscribe to the EV List

To: LISTSERV@SJSUVM1.SJSU.EDU

Subject: SUBSCRIBE

Message:

SUBSCRIBE EV Firstname Lastname

SET EV DIGEST

SET EV REPRO

To unsubscribe (keep this info for the future), send an email message as follows:

To: LISTSERV@SJSUVM1.SJSU.EDU

Subject: SIGNOFF

Message:

SIGNOFF EV

Example:

To: LISTSERV@SJSUVM1.SJSU.EDU

Subject: SUBSCRIBE

Message:

SUBSCRIBE EV Bruce Parmenter

SET EV REPRO

SET EV DIGEST

(Note- the REPRO command copies you on your own messages.)

The EV Electric Vehicle Discussion Mailing List is intended to provide a forum to discuss the state of the art and future direction of EVs. It is NOT intended to discuss either the EV appropriateness or comparisons with other transportation primary drive modes, such as the venerable internal combustion engine. Those "discussions" are best relegated to other appropriate usenet newsgroups.

There are over 800 subscribers on the EV discussion group. On a typical day, there may be 25-75 messages posted on this list!. A good idea is to use the digest feature, which

accumulates the day's messages into one file, which is sent to you each day rather than sending each message individually as they arrive.

To subscribe to the EV mailing list, send the following command to the [LISTSERV](mailto:LISTSERV@SJSUVM1.SJSU.EDU) at:

LISTSERV@SJSUVM1.BITNET or LISTSERV@SJSUVM1.SJSU.EDU:

SUBSCRIBE EV firstname lastname

You may enable the digest feature by sending the following command to the [LISTSERV](mailto:LISTSERV@SJSUVM1.SJSU.EDU):

SET EV DIGEST

Continued on page 5

To send a message out to everyone on the EV List after you are subscribed, (called "sending mail to the list") use the address:

EV@SJSUVM1.SJSU.EDU or
EV@SJSUVM1.BITNET.

Use a brief but appropriate subject line that will make people want to read your post. With so many messages and readers, it is best to keep your posts short and to the point to save both time for the readers and network bandwidth.

The email message you send to subscribe is actually a command to the LISTSERV San Jose State University, CA server. After you have sent the SUBSCRIBE email message, wait a day for

your response. Once you are subscribed to the server, it will send a confirmation message back and give you additional information.

To UNsubscribe (keep this info for the future): Send an email message with the following command to the LISTSERV at LISTSERV@SJSUVM1.SJSU.EDU:

SIGNOFF EV

Contributions sent to the list are automatically archived. You can get a list of the available archive files by sending an "INDEX EV" command to LISTSERV@SJSUVM1.BITNET (or LISTSERV@SJSUVM1.SJSU.EDU) You can then order these files with a "GET EV LOGxxxx" command, or by using LISTSERV's database search fa-

cilities. Send an "INFO DATABASE" command for more information on the latter.

List owner: Clyde R. Visser,
KD6GWN, cvisser@ucrmath.ucr.edu

This information supplied by:

*Bruce Parmenter (BruceDP@aol.com),
Sunnyvale, CA USA
Fax: (408)746-5368*

*Bruce [EVangel] Parmenter is a
netsurfer par excellence. A major
contributor to the EV Discussion List,
he also acts as an interface between the
EVD and various forums on America
On-Line. He's a big guy and he drives a
big EV, a converted Blazer. He is a
member of EAA's San Jose Chapter.*

What Should I Look For In An Adaptor?

Precision Fit. Is it manufactured with a yardstick and a bandsaw, or a micrometer and a milling machine? Are tolerances in sixteenths of an inch, or thousandths? Was it designed by tracing the transmission on a piece of cardboard, or by using precision measuring tools and trigonometry?

Hub Design. The hub is subjected to severe forces. It must be made out of steel, not aluminum. With use, an aluminum hub will "egg out" around the motor key slot. Then the sharp edge of the steel key will slice through

the soft aluminum like a hot knife through butter.

The hub should use a taperlock fit to secure it. This is the standard for industrial high-rpm, high-torque applications. Setscrews will work loose and fail. Heatshrink hubs are difficult to install precisely, and nearly impossible to remove.

Maintains Clutch. The clutch is a safety device, allowing instant separation of the motor from the wheels in an emergency. It also makes take-offs smooth, and saves transmission wear.

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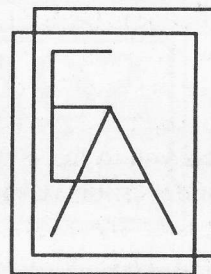
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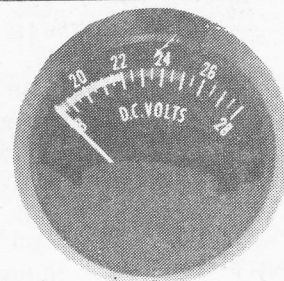
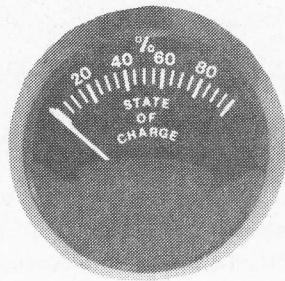
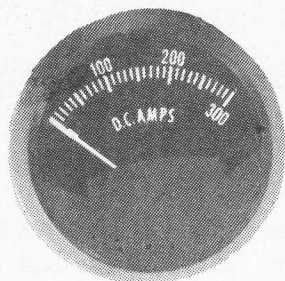
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Oil Industry Attacks EVs

by Mary Ann Chapman, President of EVIA

For some time, the electric vehicle industry has been braced for ambush by the petroleum industry. There have been small skirmishes — attempts to have reformulated gas declared an alternative fuel, regulatory injunctions against utilities that are trying to develop electric vehicle infrastructure, and assorted disinformation press releases. But the release of the distorted Carnegie Mellon EV lead hazard study amounts to a Pearl Harbor attack. It should be a wake-up call for the American public — not about the hazards of EVs, but of what vested interests are trying to do to us.

This war against electric vehicles and other alternative fuels isn't about public health, or the stiff arm of Big Brother, or increased cost of traditional automobiles to enable the major auto makers to meet government mandates. It's about huge vested interests in petroleum-based transportation and perceived threats in future decades. It's about the oil industry's determination to squeeze every possible cent from the American public and convert every drop of the planet's oil into the heat of combustion — and the sooner, the better.

Oil interests claim that they are only asking for a level playing field — that alternative fuel incentives constitute an unfair advantage for their competition. Early this year, a consortium of natural gas companies commissioned a study of the direct subsidies and tax relief received by the oil industry since its inception. The total came to \$123 billion of direct benefits from 1919 to 1973, and an estimate of \$300 billion per year during the 1990s! Clearly, the resulting monopoly ensures that even if all incentives and subsidies to both the oil industry and alternative fuels were eliminated today, there will never be a level playing field.

Because of the firestorm that erupted when this study was released, the sponsoring consortium has withdrawn it from circulation. EVIA obtained a copy, however, and has made it available on fax-by-request from SpectraFax. To get it, call them on a fax machine handset at 941-643-8779 or 813-643-8779 and request document 100. It may soon be available on Internet from the Greenwheels World Wide Web Site at <http://www.greenwheels.com/~kester>.

Another document circulating among EV advocacy organizations and the media is a request for services issued last fall to selected public relations agencies by the American Petroleum Institute. It outlines the steps planned by API to discredit alternative fuels, particularly electric vehicles. We have reliable reports that API has a budget of \$10 million for this campaign.

The auto industry's attempt to bribe California Governor Pete Wilson into selling the health of his state's citizens down the river has been well-publicized in the media. The governors of Michigan, Ohio, Illinois, and Wisconsin implored him to abandon the California ZEV mandate in favor of a "50-state low emission vehicle plan". They conveyed the auto makers' bogus claim that subsidies from conventional car sales necessary to sell ZEVs will increase the cost of conventional cars, causing a loss of jobs in the auto-producing states. The implications for his Presidential campaign were clear.

Proof of an actual conspiracy between the two industries would require exposure of confidential

internal communications, but the oil industry and the major auto makers clearly have huge mutual vested interest in the status quo. In the 1920s, major oil and automotive interests killed electric trolleys in Los Angeles and other metropolitan areas by buying them and shutting them down, in order to make the country dependent on individual transportation and petroleum. They succeeded. This is documented, unquestionable history.

Now the American public wants its options back. We are tired of degrading air quality, landfills teeming with old mufflers and disposable engine parts, and wars fought to protect a fuel supply that becomes more imported each year. We may lose skirmishes, but we must win this war.

Don't be a pawn of the other side by remaining silent. Get on the phone, fax, and email. Make your opinions known.
—MAC

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Tachometer Drive Circuit

The Tachometer Drive for EVs uses the Advanced DC 8- or 9" motor. This tachometer drive was designed by Robert Friess of the San Jose, CA chapter of the EAA

An ordinary automotive tachometer used with a 4 cylinder internal combustion engine is normally connected to the ignition coil primary and receives 2 pulses for each engine revolution. To use this type of tachometer without modification it is necessary to provide the same input to tachometer from the electric propulsion system. The Advanced 8 and 9 inch motors each have integral cooling fans with 19 blades. Sensing the passing fan blades produces 19 pulses per revolution, requiring a circuit that divides by 9.5 to produce the required 2 pulse per revolution tachom-

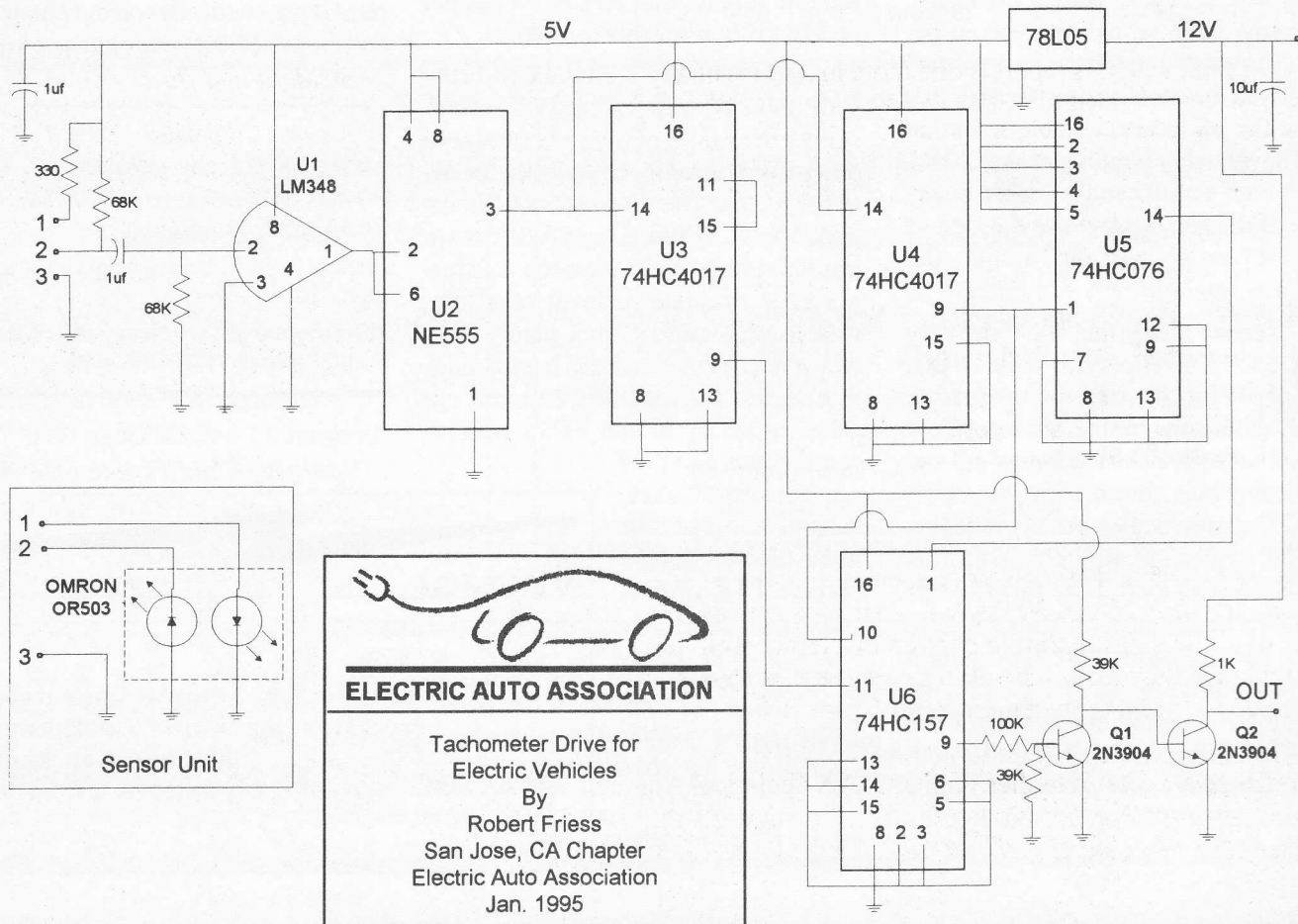
eter input signal. The circuit shown on the attached schematic provides the required division.

Motor rotation is sensed by an integrated assembly consisting of an infrared LED and a silicon photodiode that is attached to the motor with a hose clamp. Light from the LED is reflected from each fan blade as it passes and produces a pulse from the photodiode. The output from the photodiode is connected to U1, an op amp for amplification and limiting. U2 is a 555 timer connected as a Schmitt trigger used to shape the pulse. The output of Schmitt is connected to the clock input of both U3 and U4. U3 is connected as a divide-by-9 and U4 is connected as a divide-by-10. The output of each of these dividers is connected to U6, a 2 input data multiplexer. The

output of U4 is also connected to JK flip flop U5 providing an output with a 50% duty cycle which is connected to the multiplexer select pin. The result is that the multiplexer output is connected to each divider 50% of the time producing an output that on average is equal to the input pulse rate from the motor divided by 9.5. Q1 and Q2 are used to level shift this output to produce 12 volt pulses to run the tachometer.

The circuit diagram and description may be freely copied and used by any EAA member provided the proper credit is included for the designer and the EAA.

Copyright 1995 Robert Friess, Electric Auto Association, San Jose, CA.

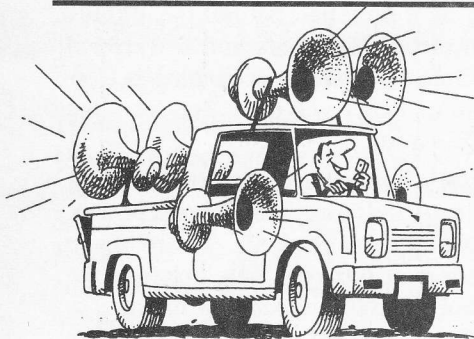


The REAL Story on EV Lead Hazards

A recent report from Carnegie Mellow University contends that EV batteries would pose a serious health hazard. This report has many serious errors and ignores the following facts.

1. There are 188 million lead-acid batteries already on the road in gasoline cars; 97% of these are recycled.
2. Between 1960 and 1990, lead use in the US increased by 17.4%. During the same period, average blood levels decreased by 85%. Blood levels near lead smelters are in line with national average. (Data from Federal Center for Disease Control)
3. Lead smelters are subject to strict EPA emissions controls, which continue to decrease the amount of emissions. Solid lead slag is not equivalent to particulate air emissions. Slag is much easier to contain.
4. The efficiency of today's EVs is closer to 100 watt- hr/mile, not the 310 whr/mile cited by the study. This essentially triples the lead emission value.
5. The GM Impact's battery pack does not weigh 3,032 lb. The whole car doesn't even weight that much. The battery pack is 1,150 lb. and gives a range of 75-90 miles, not 50.
6. Even if all 50 states were to adopt the California "Zero Emission" mandate, there would not be 10 million EVs on the road in 10 years. In 1994, the combined sales for "The Big Three" were 15 million.
7. Other lead sources far exceed the potential volume of EV batteries. These include lead paint from bridges (a major source, according to EPA), lead shot, fishing weights and the millions of small disposable batteries buried the landfills each year.

In summary, this report is one more in a series of a error-filled and biased smear pieces intended to negate the growing interest in EVs.



EAA Seeks Volunteers

Bruce Brooks is looking for a computer literate volunteer to do some database applications. If that is your speciality and you want to contribute, call Bruce at (408) 268-9130. EAA is also looking for one or more people to take over the administrative portion of membership renewals. June Munro regrets that she will not be able to continue her good work in that area, so we need to find a replacement. Call Bruce Brooks at (408) 268-9130.

Nominations Requested for EAA Awards

Recognize an EAA member with an EAA Technical Achievement or Keith Crock Award. Chapters are being asked to submit names and biographies. Please send responses to EAA Awards Committee, c/o George Gless at Tel./ Fax: (303) 442-6566

Announcements

Nominations for Board Election

EAA National is requesting nominations for the upcoming Board Elections. Four directors, Clare Bell, Anna Cornell, Lee Hemstreet and Stan Stokan are up for re-election. Chapters are encouraged to submit candidates. Please a short biography for publication in CE.

Editorial

Continued from page 1

into "grass roots" groups opposing the ZEV mandate. They wasted their money — their scheme was exposed and the mandate was saved. Hopefully the funding put into this study will also be wasted, although it would have been better spent on EV development. —CB

What to DO about Carnegie Mellon

Write, call or fax Science Magazine, requesting that David Goldstein's rebuttal letter be printed, including his revised data for Table 1.

The contact is: Managing Editor Monica Bradford, Science Magazine, Washington DC, Tel: 202-326-6500, fax 202-289-7562. Email is science_editor@aaas.org or science_letters@aaas.org.

The parent organization for Science is the American Association for the Advancement of Science. Call the president and the board of directors of AAAS and ask them to explain how such an obvious industry hit piece managed to appear in a respected scientific journal.

Write, call or fax the New York Times, demanding that they print a retraction. Use the above information to counter those who dispute your EV advocacy or ownership. Distribute it to local media, especially to reporters who have previously shown an open mind toward EVs.

(Thanks to many individuals, including the members of the Internet EV Discussion List, Electric Vehicle Industry Association, the Electric Auto Association, the Union of Concerned Scientists, Shari Prange of Electro Automotive, David Goldstein, President of Program Development Associates in Gaithersburg, member of SAE and President of the non-profit Electric Vehicle Association of Greater Washington, DC) —CB



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

French Marine Tech Firm Develops EV

Jeanneau, a French company known for its marine technology, has launched a land vehicle in the form of a two-seater urban EV.

The Lyra weighs only 1,225 lbs and is capable of carrying more than half its weight while traveling at up to 47 mph. It can climb a 20-degree grade and has a range up to 62 miles — extended by virtue of a regenerative braking system.

Its power source is a quick recharge, recyclable ni-cad battery pack that operates at 48 VDC. After a guaranteed life of four years, the batteries are recycled by the factory. The lightweight body is molded reinforced polyester and the hood and rear-entry door are of injected polyurethane. The 101.6 inch-long car (53.4 inches in width) has a rack and pinion drive system.

For more information, contact the French Technology Press Office at (312)222-1235.

(Utility & Telephone Fleets: 4/95)

Evers Tackle IRS Tax Credit

EV proponents are unhappy with the Internal Revenue Services's proposed eligibility requirements for the EV tax credit allowed under the 1992 Energy Policy Act, which would bar conversions from eligibility.

News in Brief . . .

The proposed rule states: "A qualified electric vehicle is a motor vehicle that meets the requirements of section 30(c) (from the 1992 law). Section 30(c) provides that the original use of the motor vehicle qualifying for the section 30 credit must commence with the taxpayer."

"Thus, under the proposed regulations, a qualified electric vehicle does not include any motor vehicle that has ever been used (for either personal or business use) as a non-electric vehicle."

"The vehicles that are likely candidates for conversion are, as a whole, older — and more polluting — than the vehicles that would be replaced by the purchase of new vehicles," according to comments submitted by Electro Automotive's Michael Brown. "It makes sense to encourage the replacement (by conversion) of the dirtiest part of the national fleet."

The IRS is still reviewing industry comments and does not know exactly when it will issue its final rule on EV tax credit eligibility, according to an IRS official.

For more information, call Joanne Johnson at (202)622-3110.

(Glean/EV News: Mar. & April /95)

Deutsche Post to Test Zinc-Air Battery

Electric Fuel Corporation (Jerusalem, Israel) recently delivered the first electric Mercedes Benz MB410 postal van to members of the Deutsche Post AG Management Board.

Equipped with a 150 kWh Electric Fuel zinc-air battery, the 4.8 ton van has a top speed of around 60 mph and carries enough energy on board to travel 210 intercity miles carrying a full cargo of 3,750 lbs.

The company has also finished construction of its zinc regeneration battery plant outside Jerusalem. The pilot plant will have initial capacity of 10 kg of regen-

erated zinc fuel per hour, enough to operate 10 EVs. A station next to the plant will reportedly enable fueling in minutes.

The plant will produce and fuel the initial batteries for the German EV field test program. Once the test phase is complete, continuous refueling during regular operations will be done at a larger plant in Bremen, Germany, which is nearing completion. For more information, contact Malkie Bernheim or Mike Greece at (212)725-4500.

(Electric Fuel Corporation News: 5/2)

Chrysler's Hybrid Wins Discover Award

Chrysler's Patriot hybrid-electric race car has been named winner of Discover magazine's Automotive & Transportation Technological Innovation Award.

The Patriot is Chrysler's "laboratory on wheels" for development of advanced hybrid-electric powertrains. It is powered by a liquefied natural gas turbine with turbo-alternators and a flywheel developed by SatCon Technologies Corporation, which was named co-recipient of the award.

Patriot's hybrid powertrain will be capable of delivering 500 horsepower, reportedly enabling the car to reach speeds over 200 mph. Research from the Patriot program, which was initiated in 1993, is expected to play a role in the federal government/Big Three Partnership for a New Generation of Vehicles.

For more information, contact Lindsay Brooke at (810)576-8095.

(Chrysler News: 5/1)

EV Mandates Under Attack

At the first in a series of California Air Resources Board (CARB) workshops, taxpayers and business challenged

CARB representatives to overhaul its mandate that 2% of all new cars sold by major automakers in 1998 be EVs.

A spokesman for an Orange County-based taxpayer advocacy group cited a study by Sierra Research which estimated that vehicle and infrastructure costs will increase nearly \$20 billion because of the EV mandate. EV purchases by state and local governments and school districts will add more than \$4 billion to the taxpayers' bill.

Bill Burlingham of the California Business Alliance said, "We have no quarrel with electric, natural gas or any other alternative fueled vehicle. But we strongly believe that the cost of investing in these new technologies should be borne by the shareholders of companies that stand to profit from them — not California taxpayers, businesses and consumers."

For more information, call Anita Mangels of Californians Against Hidden Taxes at (714)499-6995.

(Business Wire: 5/9)

Study Cites Battery Hazards...

Three researchers at Carnegie Mellon University recently suggested in the journal *Science* that mining, smelting and recycling the lead that would be needed for EV batteries would create emissions that pose serious public health threats.

The study, based on General Motors' Impact, calculates that an EV using "available technology" would generate 1,350 milligrams of lead emissions for each kilometer driven.

An EV using "goal technology," involving two-thirds less lead, would last twice as long and would only generate 120 milligrams/km of lead, which is still six times as much lead as would be generated by a Geo Metro using leaded gasoline.

Lester Lave, a study co-author, says if only 5% of 200 million vehicles were EVs using lead batteries, an extra 21,000 tons of lead would be released into the environment, or nearly double the amount lost in smelting and manufacturing.

"Getting rid of lead in gasoline was one of the great public health triumphs of our generation. It would be a tragedy if we reversed the benefits in the name of environmentalism."

(New York Times: 5/9)

...And EVAA Finds Faults in Study

Robert Hayden of the Electric Vehicles Association of the Americas (EVAA) says the study based "crucial" calculations on "erroneous" technical specifications for GM's Impact and compounds the problem by presenting conflicting data in text and charts. For example, the study understated battery energy density and presumed the car contained 3,032 lbs of batteries when the vehicle's 27-battery pack actually weighs only 1,150 lbs.

Hayden points out that if each of the 127,000 EVs that are projected to be delivered for sale between 1998 and 2000 were powered by 27 lead-acid batteries, the batteries would constitute less than 2% of all the lead-acid batteries already housed in the 188 million vehicles registered in the US. He also believes the lead-acid battery will likely be replaced by more advanced batteries.

For more information, call Athena Fristoe at (415)249-2690.

(EVAA News: 5/11)

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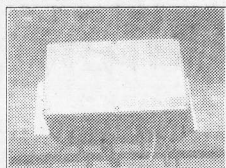
Hawaiian Solar Commuter

The Solar Electric Chariot Co. of Hawaii recently introduced its new solar electric commuter vehicle, the Sunray. The two-seater has a top speed of 70 mph, a 60-125 mile range, depending on weather conditions has 3 wheels and is only 8 feet long. The expected price tag is between \$12,000-13,000.

Photovoltaic panels can be installed on the roof or on a pull-down shade panel that shields the interior of the car while it is parked. The Sunray can also collect charging power while it is in use. In the event that the weather is not suitable for solar energy capture, an on-board, propane generator offers a back-up power source.

(Washington Times: 5/12)

EV Dc-Dc Converters



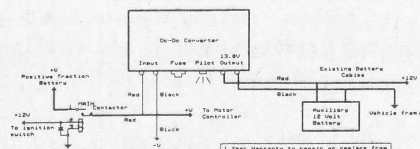
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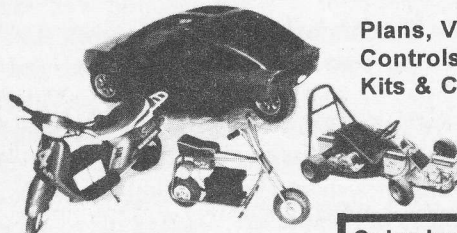
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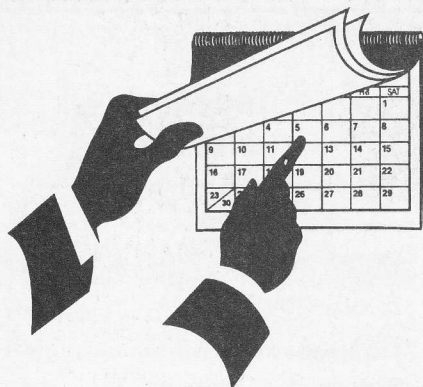
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1995 EVents Calendar

July 4 **Pike's Peak Hillclimb.** Sponsored by Chevrolet. Mantous Springs, CO (719)685-4400. July 11 - Sun Sprint of the Rockies. 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.

July 22 **Cleveland Electric Formula Classic '95.** Formula Lightning Races at Burke Lakefront Airport Raceway. Info: Todd Schneider, (216)447-3200 Aug. 2-4 EV Conference for Fleet Managers. Edison Electric Institute, (202)508-5558

- Aug. 11-13 **REDI Conference '95.** Follow-up 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.
- Aug 12 **East Bay Chapter Rally** will be held from 9 AM to 4PM at the North Berkeley BART station at Delaware and Acton. Space available for alternative energy and vehicle displays. Coastdown and turning circle tests just like last year. FREE ADMISSION and NO FEES. CALL LOU MACMILLAN, (510) 525-3636 BY JULY 30 to reserve a booth for your booth or vehicle. Anna has extra registration forms. (510) 685-7580.
- Aug 26 **Rally For the Environment,** featuring clean fuel vehicles such as electric, ethanol, natural gas and propane. Hosted by EAA Albuquerque NM Chapter. To be held at southeast corner of Coale and University, Albuquerque TVI, Ted Chavez Hall, 1800 Coale SE, from 9AM to 3PM. Activities include exhibits, vehicle displays, scavenger hunt and ride/drives. Public is welcome. To register as an AFV participant, or exhibitor, contact Dale Riddle (505) 260-0070 or Joan Wolf (505)768-5345. Fax: (505) 768-5305.
- Sept. 12-14 **Electroexpo in Richmond, VA** Hosted by Virginia Power. Watch for upcoming details.
- Sept. 16 **Silicon Valley Chapter Rally**
- Sept. 19-22 **Fourth Grove Fuel-cell Symposium** 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.
- Sept. 25-30 **Trade Show in Paso Robles, CA** at the Fairgrounds. They are inviting EAA people to exhibit wares and possibly participate in a road rally. This would be similar to the EcoCar challenge of last year. Call Ben Lovejoy at 805-438-4646 for info.
- Oct 19-21 **Monaco is having its FIRST Event!** They are inviting American manufacturers to display, companies and teams to race/rally their vehicles. They are also looking for some AMERICAN SPONSORS (you'll get your name out there) MEDIA WILL BE INTERNATIONAL. Activities: exhibits, test drives and race events. Both Princes will race too! THIS IS A CHANCE TO IMPRESS THE MONTE CARLO GOVERNMENT! Deadline for participation is July 21, 1995. Contact Lisa Jeffery at tel 92-16-03-76 or fax 93 15 03 13. Organization; Editions and Promotions Internationales, S.A.M. 11 Boulevard Albert 1st MC 9800 Principaute de Monaco.
- Nov. 29-Dec. 1 **Global Electric Vehicle Conference** focuses on EVs and their impact on international business and the global environment. Crystal Gate Marriott, Arlington, VA Presented by INTERTEC Publications. Contact JoAnne Romanek, (610)-566-7080 or Betsy Norberg at (913)-967-1865.
- 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 abstract of papers to SECR'95. travel and hotel compensation available to presenters (confirm directly with them first). Contact SECR'95, Box 53, 401 20 Gotenburg, Sweden. Tel. +46 31-62 60 61. Fax +46 31-62 60 66.



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FOR SALE: '81 Subaru G.L. Wagon, 2 WD, 108v system, PMC Controller, Prestolite motor, Trojan batteries, K& W charger. All new 4/93. \$6,500. Call Harold (804) 798-1818.

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Please send check payable to EAA, 18297 Baylor Avenue, Saratoga, CA 95070. Want Ads are available to EAA members for the sale of electric vehicles, equipment and parts. The EAA is not responsible for the accuracy of ads. Please see advertising rates on next page for commercial products.

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Coast-to-Coast

Continued from page 1

motor, drawing from a dozen 6-volt batteries makes the car scurry along at a top speed of 30 mph.

To Carr, that speed is ideal. "When you go at the speeds of these old cars, you see things you never would in a modern automobile. Like a little box turtle crossing the road, or a bird flying right alongside of you."

Starting at the Pacific, his path parallels the great Columbia River along most of Oregon's northern border. The route merges with the Oregon Trail of pioneer days, to drop south and east across Ohio, Wyoming and Nebraska to St. Joseph, MO. There it turns due east, heading straight across America's heartland through Missouri, Illinois, Indiana and Ohio before cutting across the northern tip of West Virginia and into Pennsylvania.

For Carr's planned itinerary and updates on his progress, contact Pam Anderson at the Baker Command Center, (610) 286-4011 tel. or (610) 286-4012. He would be absolutely tickled if EAA members and cars in the various cities could be on hand to escort him in. Thanks to Pam Anderson for the press release. —CB

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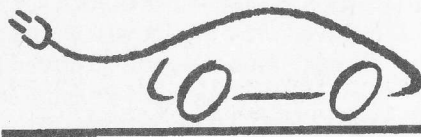
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