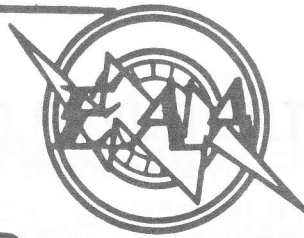


Electric

Auto



NEWS

Association

Feb. 1991

Vol. XXV No. 1

FLASH! FLASH! FLASH!

Wow! This year is shaping up as quite a year for EVs. First of all, after more than seven months I have a commitment by Dr. Steven Visco of Lawrence Berkeley Labs to come and talk to the February 16, Santa Clara chapter meeting. He will tell us about the status of development and the specifications of a new type of rechargeable battery. This lithium based battery promises a whole host of benefits and improvements, such as low cost, high safety raw materials, higher energy and power and less volume, room temperature to 200° F. operation (not 400-500° C). At the February meeting we will find out if these press claims are close to the present reality. Everyone is invited to the meeting at 5301 Stevens Creek Blvd. at Hewlett Packard, 10:00 a.m. February 16, 1991.

Next, in April is the Solar Electric 500 in Phoenix, Arizona. Check your January newsletter for details. Then, in June comes the Concours d'Elegance at Stanford University and the California Solar Run from Sacramento to Los Angeles. In August is the East Bay Rally and in September, the Santa Clara Rally and Symposium. All this will keep us busy.

Now to other things. I want to thank the three people who contacted me in response to December's editorial.

They had some very thoughtful critiques and suggestions for the EAA. I am studying these and will bring up the issues at a future meeting. I am, however, surprised at the miniscule response. Some people commented that I was taking a risk by publishing my phone number and address in that editorial, but I like the saying, "Behold the turtle, he makes no progress unless he sticks his neck out". Anyway, I was not hounded by calls or letters. This bothers me more. Why? Doesn't the membership care? Or don't you have any ideas of your own? I can't believe that.

Reread my December editorial and let me hear from you! It takes participation to make anything a success. If the EAA is not worth your time and involvement then you have only yourself to blame. A handful of dedicated executives and helpers is enough to barely hold the club together but it is NOT enough to make it grow and be the roaring success that it can be in this decade of the environmental movement. If you want to be a part of this, then step up and contribute your thoughts and efforts. Show the tenacity of a bulldog about what you want changed/improved and it will happen. Don't wait to be asked to do something. Step up and grab it.

With all of the incredible talent and experience in the club we CAN make a major impact on the promotion and acceptance of electric cars. We have the capabilities; we need only DO IT.

charging up for takeoff Pb 1/22/91

LET THE BUYER BEWARE

by Mike Brown

The electric vehicle industry is experiencing another surge of interest. This means many people who have little background in EVs are suddenly buying cars and components, and many other people with equally little background are suddenly selling them.

I have a unique perspective on the EV industry, since I have been in it since 1979. I watched the spurt of interest rise--and fall--with the last gas crisis. I stayed in the business through the slow years of "cheap" gas when everyone else folded their tents and moved on. I believed the time for EVs would come again, and stay. Now I am watching many of the same mistakes being made again that were made last time.

Those of us in the industry have a duty to educate the buying public about possible pitfalls. Whenever someone has a bad experience with an EV or an EV business, it tarnishes us all. With that in mind, I would like to offer the following guidelines for those trying to sort through the various claims and offers of electric vehicles and components.

GET REFERENCES. Never take the word of a salesperson on its own merit. Check with independent knowledgeable sources in the industry, such as electric vehicle enthusiasts' clubs or alternative energy publications. Is this person or business well-known and established within the industry? How long have they been involved with EVs? Are they reliable, ethical, and competent?

Any industry in a boom phase will attract a swarm of new "businesses". Some will be outright frauds, but may be extremely smooth and convincing. Others are honest and sincere people who simply don't have the technical or business background to deliver what they promise. Dealing with an established, reputable business will insure technical support for the components you buy.

These are some situations that should be examined carefully:

THE INSTANT EXPERT. Just because an EV is relatively simple, many people think no special expertise is needed to be an expert. This person may claim to have been in the EV business for ten years. On independent research, however, you will find that no one in the industry heard of him before last year.

He's been "in business" for ten years--installing car radios--and he's had an EV or two that he bought used and tinkered with from time to time. This person knows just enough to cause serious problems.

RIP VAN WINKLE. He really has been in the EV industry since ten years ago. In fact, he's STILL in the EV industry--of ten years ago. His components are three generations behind the times, and will not give satisfactory performance. Often surprisingly cheap prices are a warning sign of this situation.

THE HOBBYIST. Some hobbyists are brilliant, and should be declared national treasures; others should be declared national disasters. Be sure to find out from outside sources which kind you are dealing with.

Also be aware that you may end up with a one-of-a-kind vehicle that is only fully understood by its' creator, and is a mystery to anyone else. Such an orphan can be a problem if you ever need to make changes or troubleshoot a malfunction.

MAGICAL NEW COMPONENTS. Someone has always "just come out with" a Magic Motor, or a Better Battery, or some other Holy Grail that will give amazing range and power, weighs almost nothing, produces more power than it uses, and cures cancer. On closer inspection, you will find that these fantasy components are in the hand-built laboratory prototype stage. They also have a few little drawbacks, like enormous price tags, 400 deg. F. operating temperatures, or a tendency to self-destruct. Someday some of these fairy tales WILL come true, and will benefit us all. In the meantime, it is foolish to base your vehicle on the magic of the future. Your dream coach-and-four, will remain a lumpy pumpkin pulled by white mice.

In general, be realistic. An EV built with proven, current production technology can provide completely satisfactory performance for use as a local commute and errand-running car. This represents the largest percentage of American daily mileage, and is the perfect niche for the EV today. Components that are too cheap OR too expensive will prove to be unsatisfactory. Take a little time to learn who is established, respected, and experienced in the industry, and you will be treated well.

M.B. Electro Automotive 12/26/90

1991 SOLAR ALTERNATIVE VEHICLE EXPOSITION OF CALIFORNIA

Palo Alto, California

This June, solar and electric car owners from across the country and the world will converge on California to take part in the 1991 Solar Alternative Vehicle Exposition (SAVE) of California. The SAVE California DriveSM will be a six-day, 760-mile racing event starting in Sacramento and finishing in Los Angeles.

Along the way, racers will stop at Stanford University, Fresno State University, the California Polytechnic State University at San Luis Obispo, California State University at Northridge, and the University of California at Irvine.

Competitors will be divided into two categories - one for solar race cars and one for electric commuter cars.

This will be the fourth race in the United States featuring solar cars, the first major race in California, and the first race to feature solar, electric, and hybrid vehicles.

In September, the California Air Resources Board adopted new emissions standards that require that 10% of the cars in California be zero-emitting by the year 2003. These new standards mean that the number of electric cars in the state will jump considerably over the next decade.

Increased environmental awareness and growing concern over the United States dependency on foreign oil in light of the current crisis in the Persian Gulf add to the importance of exploring alternative transportation options.

At each stop along the race route, there will be displays showing products that will help the United States move into the next millennium. The latest in transportation and alternative energy technology will be featured.

Stefan Heck
SAVE California Drive Team

SAVE California Drive
P.O. Box 8827
Stanford, CA 94309-8827
(415) 497-0861
FAX (415) 723-0010

REQUEST FOR INFORMATION (RFI)

I'm writing a book about EVs for consumers, scheduled to be completed by March 15, and I'd like to include three chapters, one on "EV Pioneers," one on EV cartoons, and one on "EV Resources."

EV Pioneers: Anyone who drives an EV today is riding on technology that has taken decades to perfect. For future drivers of EVs, I would like to capture on paper the memories that each chapter has of people who have contributed and continue to contribute to the greater public acceptance of street-legal EVs.

HERE'S WHAT YOU CAN DO: Each chapter is encouraged to submit profiles (each profile should be no more than three double-spaced typewritten pages, i.e. fewer than 800 words, please) and photographs of EV pioneers and their cars. In the profile explain how that person has contributed to the increased public acceptance of EVs, either through media events, or years of using EVs to commute to work, or through generous volunteering of time to help other people convert their cars to electric. The basic question should be: 50 years from now, who should be remembered as an EV pioneer? PLEASE include a phone number and address so I can call if I have any questions. **DEADLINE:** March 15. Submit your nominees early!

WHAT YOU GET: For each profile that is used, the nominating chapter will receive a free copy of the book. (If you submit 10 profiles and five are used, you get five free books.)

EV Cartoons: Send a photocopy of any cartoons regarding electric cars. For each cartoon that is used in the book, you will receive a free copy of the book. Please note WHERE you found the cartoon, including issue and date of the magazine or newspaper, so I can obtain reprint permission from the artist.

EV RESOURCES: This chapter will be like a Yellow Pages for the EV consumer. If you have a product or service related to electric vehicles, please send information that can fit on a sheet of paper 6"-by-8" and I'll include it in my chapter on EV resources.

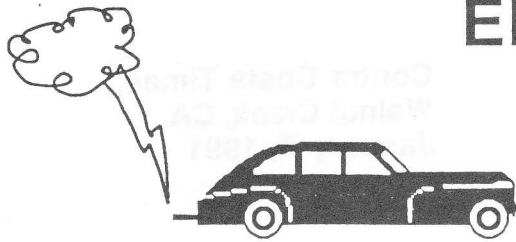
DEADLINE: March 15. I must have camera-ready artwork so I can paste your information onto the page of the book. **THIS IS AN OPPORTUNITY TO EXPLAIN WHAT YOU DO!** I reserve the right to edit any material that exceeds the dimensions of 6"-by-8". If you can fit the description of your service on a half-page (in a space of 6"-by-4" or in a space of 3"-by-8"), the trees of the world will appreciate it and you will get a free copy of the book (this is an incentive to be brief!!).

There will be no obligation to purchase a copy of the book, but please remember that any profit (above the cost of editing, producing, printing, distributing, and mailing the books) will be donated to support educational efforts of various electric vehicles organizations.

Send your submissions to: S. McCrea, 101 SE 15th Avenue, Apt. #5, Ft. Lauderdale, FL 33301, 305-463-0158

NOTE: The deadline is March 15, but, as with any project, exceptions can be made. If preparing this material by March 15 is impossible, call me and we'll discuss alternative arrangements. To be certain of getting your product/service and chapter EV Pioneers included in this book, submit the information **EARLY!**

ANOTHER REQUEST == I'm preparing a slide show of electric vehicles that I plan to show to students in local schools and to local civic groups. If you have slides or photos of interest, please send them to me --I'll copy them and return your originals.



ELECTRIC GRAND PRIX

Paul Heaney

6 Gateway Circle

Rochester, New York 14624

716-889-1229

We have recently received a copy of Paul Heaney's **ELECTRIC GRAND PRIX** quarterly newsletter. It's interesting and free to those "interested in the development of electric vehicle technology". Write him if you have interest in:

BUILDING AN ELECTRIC VEHICLE

BUYING AN ELECTRIC VEHICLE

RACE COMPETITION BETWEEN ELECTRIC VEHICLES

WANTED

An electric CNG hybrid Mini-Van similar in space and payload to Chrysler Caravan. (Kit or New or Used Vehicle). Mini-van must sustain 55-65 mph highway speed with 200+ mile range, using CNG motor.

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CALL YOUR LEGISLATORS!!!

H.R. 2269, a bill introduced in the last Congress, did not pass. This bill was to amend the Internal Revenue Code "to allow an investment tax credit for vehicles fueled by clean-burning substances, for converting vehicles to be so fueled, and for other purposes."

Let's get a new version before Congress! This time, we'd like to have a tax credit for ELECTRIC VEHICLES. CALL YOUR CONGRESSPERSON! and make it happen this session.

Rising gas prices fueling interest in battery-powered cars

Contra Costa Times,
Walnut Creek, CA
January 7, 1991

By James Bruggers
Staff writer

PLEASANT HILL — Until you turn the keys, there's nothing unusual about Scott and Anna Cornell's electric VW Rabbit.

There's no vroom; just click and buzz. While the noises have long been the sounds of the future, many now say the future is upon us.

"They (electric cars) work just like regular cars," said Scott Cornell, a Pacific Bell data base manager. "But instead of gasoline for fuel, they have batteries for fuel."

Interest in electric cars is steadily increasing, buoyed by high energy costs and greater environmental concerns. As a result, the long-vanquished rival to the gasoline-powered car is enjoying a renaissance.

The catalyst for the renewed interest is the Persian Gulf crisis, which sent gas prices up 20 to 30 cents a gallon following the August invasion of Kuwait by Iraq.

"We were having about 15 or 20 people coming to our meetings," said Lloyd Wenzel, immediate past president of the Electric Automobile Association's East Bay chapter. "Now we are seeing 30 or 40."

It always happens this way, added Cornell, an active club member who has two electric cars, the second a shiny red Karmann Ghia. Americans warm up to electric automobiles when gas prices rise, then cool off to the idea when prices drop.

This time, Cornell said, there's an additional spark: concern for the environment. "People want to do their part to help out."

Would-be electric car enthusiasts are approaching club members for information on how to convert old Datsuns or Toyotas used only for running errands.

"It belches blue smoke for 15 minutes when they start it up," Cornell said. "All they ever do is run to the store. They are saying, 'This isn't right.'"

An electric car can make an excellent second family vehicle, he said.

Part of the environmental push is mandated. New laws and regulations give boosts to "cleaner" vehicles powered by alternative fuels, including electricity, methanol and compressed natural gas.

Federal Clean Air Act amendments approved by President Bush in November aim to cut urban smog, much of it caused by motor vehicles. The law imposes lower limits on automobile hydrocarbon emissions by 40 percent and calls for phasing in alternative fuel cars, including up to 300,000 electric vehicles by 1999 in a California pilot program.

A state Air Resources Board plan approved in September did its part by ordering car makers to build "ultra clean" cars beginning in 1994 and oil companies to sell the appropriate fuels. The same plan calls for car makers to introduce at least 40,000 mass-produced electric cars into the California market by 1998.

Cornell expects business and government agencies to dedicate portions of their automotive fleets to electric power. Electricity would be a good energy source for mail trucks and short-haul deliveries, he said.

It's a start, Cornell added. But it will take additional government incentives to get electric cars into everyday use. And both electric car buffs say they doubt the cars will ever entirely replace vehicles fueled by gasoline.

"It won't happen unless they come up with some real good batteries," said Wenzel, an Alameda resident. "They don't have the distance in them for going anywhere, really."

Cornell, an electrical engineering graduate, explains the problem with battery technology in numbers. His electric Rabbit has 14 batteries, which weigh a combined 900 pounds. They store 22 kilowatt-hours of power, the equivalent of 2 to 2½ gallons of gasoline, or enough to push the car 60 miles and give it a maximum speed of 70 mph.

"I do my shopping," said Anna Cornell. "I take my son to his appointments. We have driven to my parents in Pleasanton and recharged there over night."

What electric cars lack in range, they make up for in thriftiness.

"There's not much to maintaining them," Wenzel said. "There're no oil filters, spark plugs, fuel filters or air cleaners, so there isn't much to tune up," he said. "The main thing is just the breaks and checking the batteries every little while."

Cornell has calculated it out. He compared the cost to drive, insure and maintain his electric Rabbit with a gasoline cousin, another Rabbit he owned from 1980 to 1988. The electric car cost 8 cents a mile to operate; the gasoline car, 22 cents a mile.

Insurance is a big savings, because electric cars are considered low mileage, recreational vehicles, Cornell said.

Electric cars' future is probably with solar power, because it is a renewable and clean source of fuel, he said.

Plugging an electric car into a regular 110-volt outlet doesn't eliminate pollution; it merely changes the form. Electricity from an outlet was produced at a power plant, which made its own pollution. Burning coal, for example, contributes to acid rain and global warming. And nuclear power has environmental problems both with fuel production and long-term storage of nuclear waste.

But just as batteries need improvement, so does the equipment used for collecting and storing solar energy.

"I would have to cover the entire south-facing roof of my house with solar panels at a cost of \$20,000," he said, adding that it would take 1½ days to charge the batteries. "We're not there yet."

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U.S. Auto Firms Say Joint Effort Is Way to Gain Electric-Car Edge

By GREGORY A. PATTERSON
Staff Reporter of THE WALL STREET JOURNAL

DETROIT—The Big Three U.S. auto makers are close to forming an alliance to develop battery technology for electric cars, in a move the companies see as opening a new era of cooperation against foreign competitors.

The battery technology consortium, a project that could have a price tag in excess of \$100 million, has the potential to be the largest and most significant joint venture ever among the Big Three. It reflects a profound shift in the competitive strategies of General Motors Corp., Ford Motor Co. and Chrysler Corp. Faced with the combined challenges of tougher competition from Japanese auto makers and escalating demands from government for cleaner, more-fuel-efficient vehicles, the Big Three are cautiously dropping their cross-town rivalries and fears of antitrust sanctions in favor of joint action.

"The government wants clean air, the people want clean air, and all manufacturers want to get there. Why should we compete with ourselves to develop a new technology?" says John Casesa, an analyst with the securities firm Wertheim, Schroder & Co.

Big Three officials agree that by pooling their resources to develop better batteries, they have a chance to gain an advantage over Asian and European rivals as tougher clean-air regulations take hold.

The 'Real Enemy'

"You have to realize that your real enemy is not the guy next door to you, but somebody coming from another country," says Francois Castaing, Chrysler's vice president, engineering.

Indeed, a Japanese consortium of auto makers and government already is working to develop its own electric powered vehicle.

The Big Three have been experimenting quietly with cooperative projects over the past two years. There is a fledgling joint effort begun two years ago to develop and test plastic materials for use as load-bearing parts in car bodies. And GM and Chrysler formed a joint venture in the fall of 1988 to produce four-wheel drive axle parts at factories in Muncie, Ind., and Syracuse, N.Y.

Limited Range

But the electric car battery venture could have broader impact. Because of demands by regulators in California that auto makers offer pollution-free vehicles for sale by the end of the decade, developing better electric-car technology is now a top priority for all the big auto makers.

All three U.S. auto makers have electric vehicles in various stages of development. GM has made the biggest splash by promising to mass-produce a version of its futuristic Impact electric car before 1993.

The trouble is that beneath the Impact's

sleek skin are 870 pounds of conventional car batteries that can only store enough power to run the vehicle for about 120 miles between re-chargings. A gasoline-powered car can travel 400 to 600 miles between fill-ups. In California, where drivers commute long distances to work and routinely rack up more than 30,000 miles a year, the current electric cars would be a tough sell, industry executives say.

The research to develop substantially longer-lived batteries will be an enormously expensive undertaking, at a time when the Big Three are strapped for cash and losing ground in their home market, industry executives say.

GM, Ford and Chrysler have seen their combined share of the U.S. car market drop to 65% in 1990 from 74% in 1980. The three companies are scrambling to erase substantial advantages the best Japanese auto makers now enjoy in labor and product design costs. But slumping auto sales have erased practically all profits in the Big Three's core North American vehicle operations, and squeezed the capital budgets of all three companies.

"If you want to make rapid progress on some of these issues you will have to act jointly," says John Eby, Ford executive director, corporate strategy. "The intent is to become quicker and more efficient."

The combination of competitive and technological pressure is leading Big Three executives and government regulators to rethink rules that as recently as 1983 forbade practically all technology-sharing by the Big Three on antitrust grounds.

Monthly Meeting

These days, Mr. Castaing shares a meal once a month with his counterparts at GM and Ford where they discuss ways of combining their research and development resources. Recently they have been discussing ways of combining some technical research facilities.

To be sure, this new willingness to cooperate on technology hasn't diminished Chevy's desire to outsell Ford. But it is fostering a growing belief in Detroit that U.S. auto makers don't have to look to foreign partners for help with technology costs.

Ford's Mr. Eby says consumers would benefit from more cooperation among auto makers because joint efforts could reduce some of the estimated \$500 to \$700 that tougher clean air regulations could add to the price of the average vehicle.

Donald Runkle, vice president in charge of GM's advanced engineering staffs, even suggests that GM, Ford and Chrysler think of themselves as the "Big We" when it comes to some forms of basic technology, instead of the Big Three. Chrysler's Mr. Castaing shares that sentiment.

"I'm convinced that there is much more that we can do together," he says.

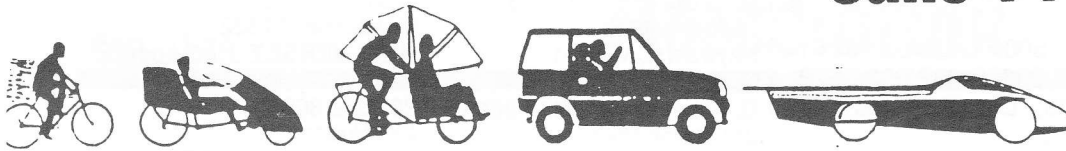
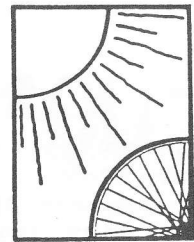
THANKS TO CALIFORNIA AIR RESOURCES BOARD

THE EASY SELLING OF EVs WILL SURPRISE THE BIG THREE

Lightwheels Festival 1991

New York City to Washington DC

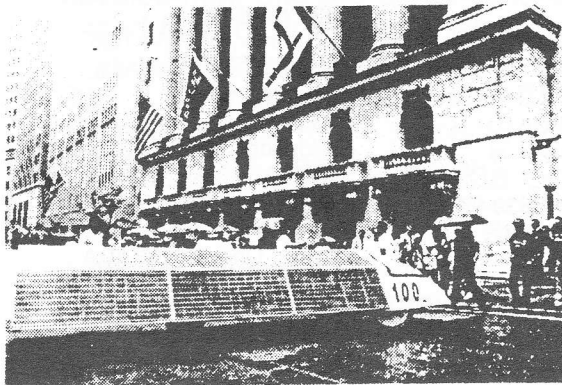
June 14-23



Festival of Solar/Electric/Human-Powered Vehicles

Trade Show

Lightwheels will kick off its 1991 Festival on Friday, June 14th in New York City. Wall Street and the United Nations will once again provide key venues for vehicle displays. Seminars at the Municipal Art Society's Urban Center will be combined with a trade show covering environmentally responsible products, especially vehicles. Films and videos of solar vehicles from around the world will be shown and discussed.



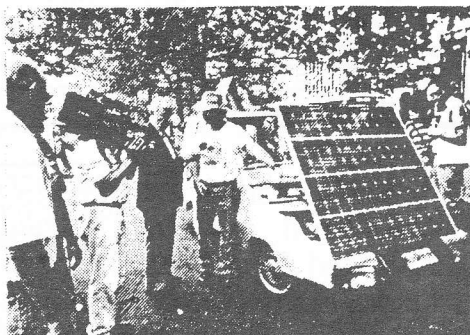
Stanford University's "Sun Surfer" Solar racing car coursed thru Wall Street and lunchtime crowds outside the New York Stock Exchange.

The Ride

The Lightwheels 1991 ride will push off Monday morning on its five day journey to Washington D.C., with the first stop at the Children's Museum in Snug Harbor, Staten Island. Bicycle clubs all along the 240 mile route have been invited to join with us for the ride. Since we will be going only about 50 miles per day, with at least one long stop, many can make the entire journey with us.

Conference

During our two day stay in the District of Columbia, a conference will take place with participants drawn from the entire environmental, educational, and governmental community. Discussion topics will include the "state of the art" in vehicle technology, the role of governments and schools, and the relationship of transportation to other issues, the environment, land use, etc. On Saturday night we will pause to celebrate the summer solstice. At the same time, awards for the best vehicle developments and designs will be given, discussions throughout the weekend will alternate with videos and demonstrations of vehicles.



Darryl Murphy of Tennessee, builder of the \$7,000 "Sun Driver" solar-powered commuter car gets interviewed by Roger Grinsby, the nationally syndicated TV reporter, at the United Nations Plaza.

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Pennsylvania

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Maryland

Washington D.C.

Lightwheels, Inc.

49 East Houston St. New York, NY 10012

212-431-0600

CALENDAR

February 9, 1991 East Bay EAA meeting, P.G.&E. Service Center, Oakland, CA. Speaker is Max Rosensein on the 1989 SunRayce, Florida to Detroit
March 17-22, 1991 Int'l Solar Energy Conference, Reno, NV 212/705-7037

April 5-7, 1991 Solar & Electric 500; SERA, 11811 N. Tatum Bvd #3031, Phoenix, AZ 85028 602/953-6672
April 12-14, 1991 Eco Expo, Los Angeles, CA. 818/906-2700 or 800/334-EXPO

April 15+, 1991 4th Energy Forum, sponsored by BC Hydro, Victoria, B.C., Canada 604/987-8582

May 20-24, 1991 3rd Annual Tour de Sol, sponsored by Northeast Sustainable Energy Assn. 413/774-6051

June 14-23, 1991 Lightwheels Festival 1991, Trade Show, Ride, Conference; NYC to Washington DC; 49 E. Houston St, NYC, NY 10012; 212/431-0600

August 3-9, 1991 Intersociety Energy Conversion Engineering Conference, Boston, MA 708/352-6611

August 18-22, 1991 1991 ASME Int'l Computers in Engineering Conference, Marriott Hotel, Santa Clara CA

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Batteries: Group purchases are possible. Contact Don Gillis of the San Jose Chapter, 408/225-5446

Postal Van for sale. Don Renny, 408/974-0342

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BETWEEN 10AM-5PM PACIFIC TIME

EDITORS: JOHN NEWELL, BILL PALMER, PAUL BRASCH, E.W. AMES
Send your chapter news, coming events, articles to the address below

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NEWS

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February 1991

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