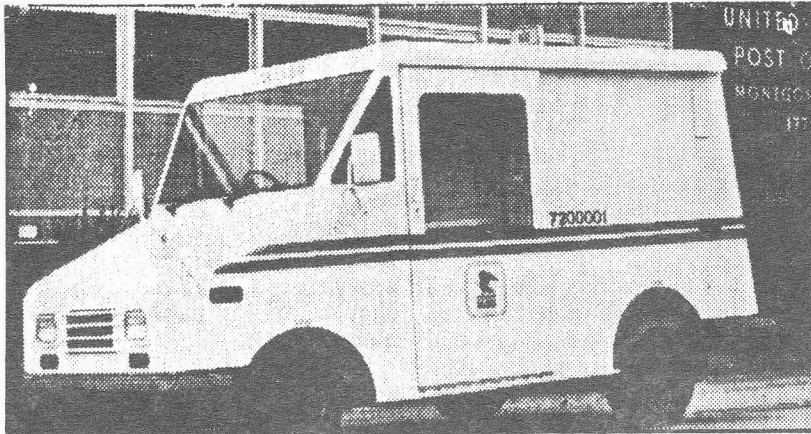




Special to Extra

Prototype of Postal Service's 'long-life vehicle' Post office gets 'grummies'

By Jose Stell
Mercury News Staff Writer

Two dozen mail-delivery vans arrived in Santa Clara Valley recently, ending a year's wait for the prototype "long-life vehicles."

Postal customers on routes served by the San Jose post office's Berryessa station can expect to see the lightweight LLVs first, probably within a week, said Gus Ruiz, public information officer. The vehicles will arrive in other San Jose areas and nearby cities during the next five years.

The new corrosion-resistant, aluminum vehicles are expected to last 24 years compared with eight years for the quarter-ton Jeeps they eventually will replace, Ruiz said.

The U.S. Postal Service reportedly will save \$5.9 billion in servicing and repair costs over the 24 years, he said.

Nicknamed "grummies" after Grumman Corp., the manufacturer, the LLVs are 800 pounds lighter

than the 3,800-pound Jeeps, and offer double the 500-pound cargo capacity.

Grumman will manufacture 99,150 LLVs, Ruiz said, under a \$1.1 billion contract that represents the largest single-vehicle purchase in postal service history.

The San Jose Post Office expects shipment on 82 more LLVs by January, and its full quota of 750 during the next five years. The first batch was delivered to the San Jose Post Office's general facility in East San Jose.

The "grummie" is powered by a 2.5-liter, four-cylinder gasoline engine featuring a General Motors fuel-injection system and three-speed automatic transmission.

Ruiz said track tests indicate it gets 23 miles to the gallon of unleaded regular gasoline.

WRITE NOW!!

Now is the time for all good (and bad) EV'ers to come to the aid of our cause. These Postal vans were designed to be ELECTRIC, they have proven to be reliable and more economical than ICE vehicles at many demo sites around the country. Our own Cupertino Postal service is running it's second fleet using the Grumman ELECTRICS after running a fleet of Harbuilt ELECTRICS for ten years, several with the original batteries. However the ever-sharp powers in Washington have once again bowed to the more powerful oil interest and General Motors and ordered ICE vans. This proves once again that our Government is not interested in conserving our fuel supply or cleaning up the air we have to breath

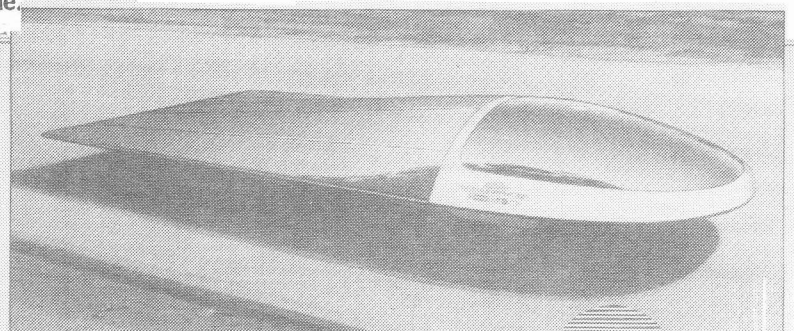
EAA BELIEVES AT LEAST HALF OF THESE VANS SHOULD BE ELECTRIC!

We ask you to write your representatives in Washington and ask them to assist in changing this order to include at least half ELECTRICS!

THANKS! Clarence

SEE Pg. 2

 **PENTAX
WORLD SOLAR
CHALLENGE**



The design of GM's solar-powered race car, Sunraycer, was revealed in this rendering created by artists at GM's Design Staff Advanced Concept Center. The GM-built vehicle is scheduled to race 1,950 miles across Australia using solar power. The World Solar Challenge begins Nov. 1 and will be a test of technical ingenuity, car-making skills and human endurance.

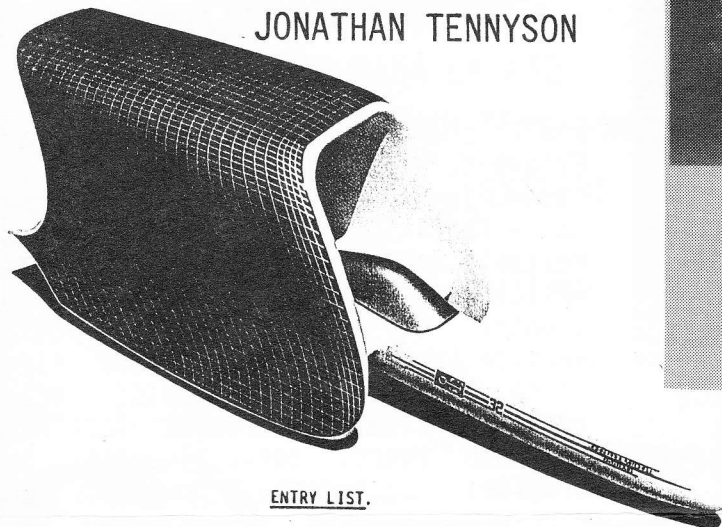
GM SUNRAYCER

**1987
WORLD SOLAR CUP
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JOHN PAUL MITCHELL SYSTEMS

JONATHAN TENNYSON



ENTRY LIST.

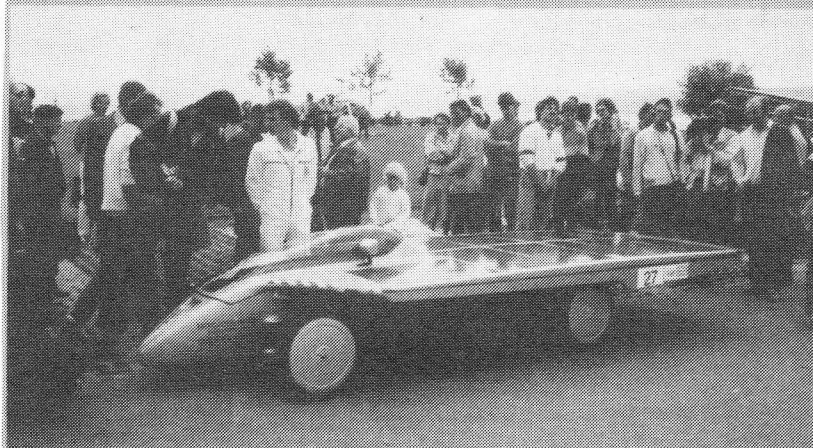
Australia	1	Australian Geographic Team Marsupial
Australia	2	Warragul Technical School
Denmark	3	Chariot of the Sun
Japan	4	Nippon TV 'Leyton
Japan	5	SEL "Southern Cross"
Japan	6	Hoxan Corporation
Australia	7	Ford Motor Company
Japan	8	Hama
Australia	9	Photon Flyer
Australia *	10	Clibby Team Solar Powered Racing Machine
Australia	11	Solar Resource Syndicate
Australia	12	Chisholm Institute of Technology
Germany	13	Rolf Disch
Australia	14	Alarus
Australia	15	Darwin Institute of Technology
Switzerland	16	Sunspeed Team
Switzerland	17	Ingenieurschule Biel
Australia	18	Goodwood High School
U.S.A.	19	Solectria, IV
Japan	20	Nokodai "A"
Pakistan	21	Syed Attique Shafaat
Germany	22	Trykowski
U.S.A.	32	John Paul Mitchell Systems
U.S.A.	88	General Motors
U.S.A.	99	"Star" - Crowder College

* SOLAR/STEAM - All other entries are SOLAR/ELECTRIC

COMPETITION

The miracle of the photo-voltaic cell will be used as the power source for this world's first international solar vehicle race across a continent

This race, to be held across the Australian continent from north to



south, will start in Darwin on 1 November 1987 and finish in Adelaide some ten to twelve days later - depending of course on the speed of the vehicles.

The course will follow the newly sealed Stuart Highway, and will be over some 3200 kilometres.

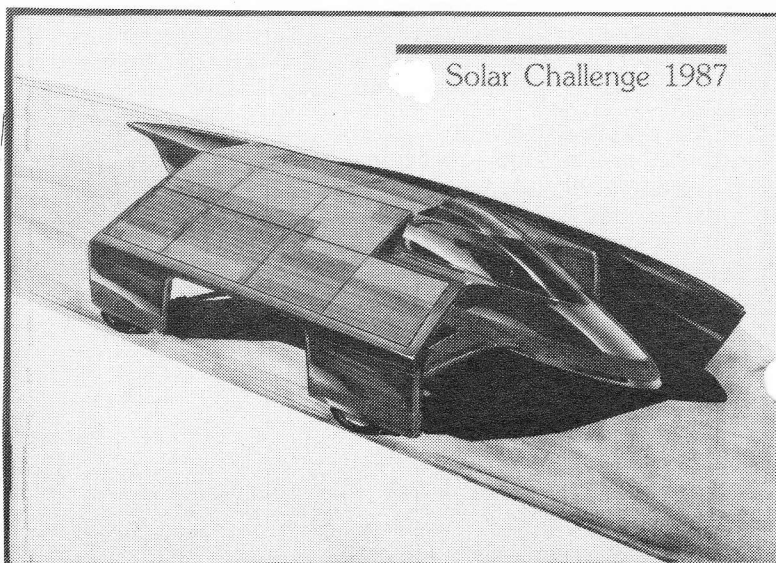
PENTAX WORLD SOLAR CHALLENGE:

Entries have now closed for the World Solar Challenge. A total of 25 entries have been received:

Theories are now flying around with many colourful descriptions and ideas about speeds and designs. Some of these are being put to rest with the photos that are now getting out into the press. But, solar cars are more than skin deep and the photos do not describe the real solar car, such as the electronics, drive train and real rolling resistance, not to mention the true returns on the aerodynamics. Only the first week in November will truly prove the rights and wrongs of theories in practice.

We hope that some of the predictions that entrants have been making come true. Some are estimating that they will finish in seven days. It will be thrilling if the six day barrier is broken, representing speeds over the 80 kmh. But many factors will play a role and even 10 days or 60 kmh will be a world breakthrough.

Solar Challenge 1987



This year, more than ever, the Sunnyvale rally showed the great diversity of the EV. In addition to the usual range of kits, conversions, and home-builts EVs, we had Stanford University's Solar/Electric Chevette, FMC's turbine generator electric armored personnel carrier, a very young anonymous lady on an electric Honda tricycle, and Bill "Believe It Or Not" Williams towing his entry to the rally with his electric Honda "tow truck". Something for everyone!

And the winners are:

2/3 Wheelers: 1st--Angus MacDonald
2nd--Roy Paulson
Custom: 1st--Bob Steinfeld
2nd--Don Gillis
3rd--Sam Hayek
Stock: 1st--Lloyd Wenzel & Chuck Olson
3rd--Tony DeBellis
Efficiency: Tony DeBellis
Technical Award: Tony DeBellis

All three winning cars in the stock class finished with 20 laps. The third place car was chosen by its longer elapsed time. The first two places, however, were so close in both time and efficiency that they were awarded a tie.

Tony DeBellis won both the technical and efficiency awards with the same innovation: an onboard Apple computer that provides continuous monitoring and projections of his car's performance.

In addition, Bill Williams presented Frank Willey with a power transistor out of one of the first Willey controllers, mounted in a plex block, in recognition of his pioneering contributions to EV control systems.

Paul Brasch opened the symposium with a compilation of information on the recent breakthroughs in superconductivity. John Reuyl gave an update on Stanford's solar/electric project. A video tape was presented by Voltek Corp. on their aluminum-air battery which will carry a prototype vehicle 750 miles on a single charge. Mr. John McGinnis from FMC provided an interesting and informative talk and video on the electric APC built for the army. The symposium closed with an audio tape from Wally Rippel proposing a cross-country electric vehicle challenge, with a cash prize to be awarded to the first vehicle to travel across the country within a set amount of time.

Thanks are due to a few of those who helped make the rally go so smoothly. First, thanks to Control Data for the use of their parking lot, as always. Lee Hemstreet handled the publicity. Dave Nonis coordinated set-up and take-down. Pat Hardage and Betty Ellers handled the registration table. Chuck Olson provided a timeclock and lap charts. Larry Burriesci served as tech inspection judge, and Bob Steinfeld and Bill Palmer judged the tech award entries. Lap judges were Leo Brand, Larry Burriesci, Gene Fowler, Ken Koch, and Rich Stiebel. Ed Schanz compiled the results on his laptop computer. Alisa Brown ran the food booth. Pat Hardage handled the arrangements with the Sheraton for the symposium and delicious brunch. Paul Brasch arranged the symposium.

EV Marketplace

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FOR SALE

Lectric Leopard-parts liquidation: 23HP GE Series motors (NEW) adaptors, SCR Panels, Transformers, etc. Call or write for prices. J. Stevenson, 1201 Parducci Rd., Ukiah, CA 95482-(707) 468-1603.

NOISE

Modern technology has come up with only three basic ways to control noise:

1. Stop it at its source.
2. Block its path.
3. Shield the receiver.

The Environmental Protection Agency (EPA) claims that we should not be exposed to more than 85 dB A over an 8 hour working day. (See Attached Chart) Possible ear damage begins at 75 dB A. The average internal combustion car accelerating at a distance of 50 feet from you will create this much noise. Our freeway noise level is about 70 dB A.

Research indicates that noise may play an important role in causing or exacerbating a wide variety of health problems ranging from birth defects to heart disease. EPA estimates 16 million American people now suffer from noise-caused hearing loss. EPA's Charles Elkins says "Overall most people in this country do not understand what noise is doing to their health. Noise is thought of as a temporary annoyance, but its longterm effects are subtle and potentially harmful. The sooner people recognize these effects and demand quiet(surroundings), the sooner we will apply this nation's ingenuity to controlling noise.

Ed Ratering, GM Director of Noise Control, says "I know of no new internal-combustion-engine development that is quiet, with one exception - the gas turbine, which has fuel-economy problems." It is the engine noise - Block Ringing caused by the combustion process - is the most difficult to handle.

You who have electric vehicles know that the electric is economical with energy and stops all these engine noises and vibrations at their source. As we all know the electric motors simply do not create much noise or vibration. Therefore the electric does not need to try to block the path of the noise nor to shield the occupants from the noise. Need we say any more about electric car noises.

Condensed from an article in Popular Science
By John Newell



Electric motor for solar racer

Nady Boules, of General Motors Research Laboratories' electrical and electronics engineering department, holds a motor fitted with Magnequench high-powered magnets made by GM's Delco Remy Division. To be used in a solar-powered car in a November race in Australia, the motor turns out about 40 percent more horsepower than conventional types.

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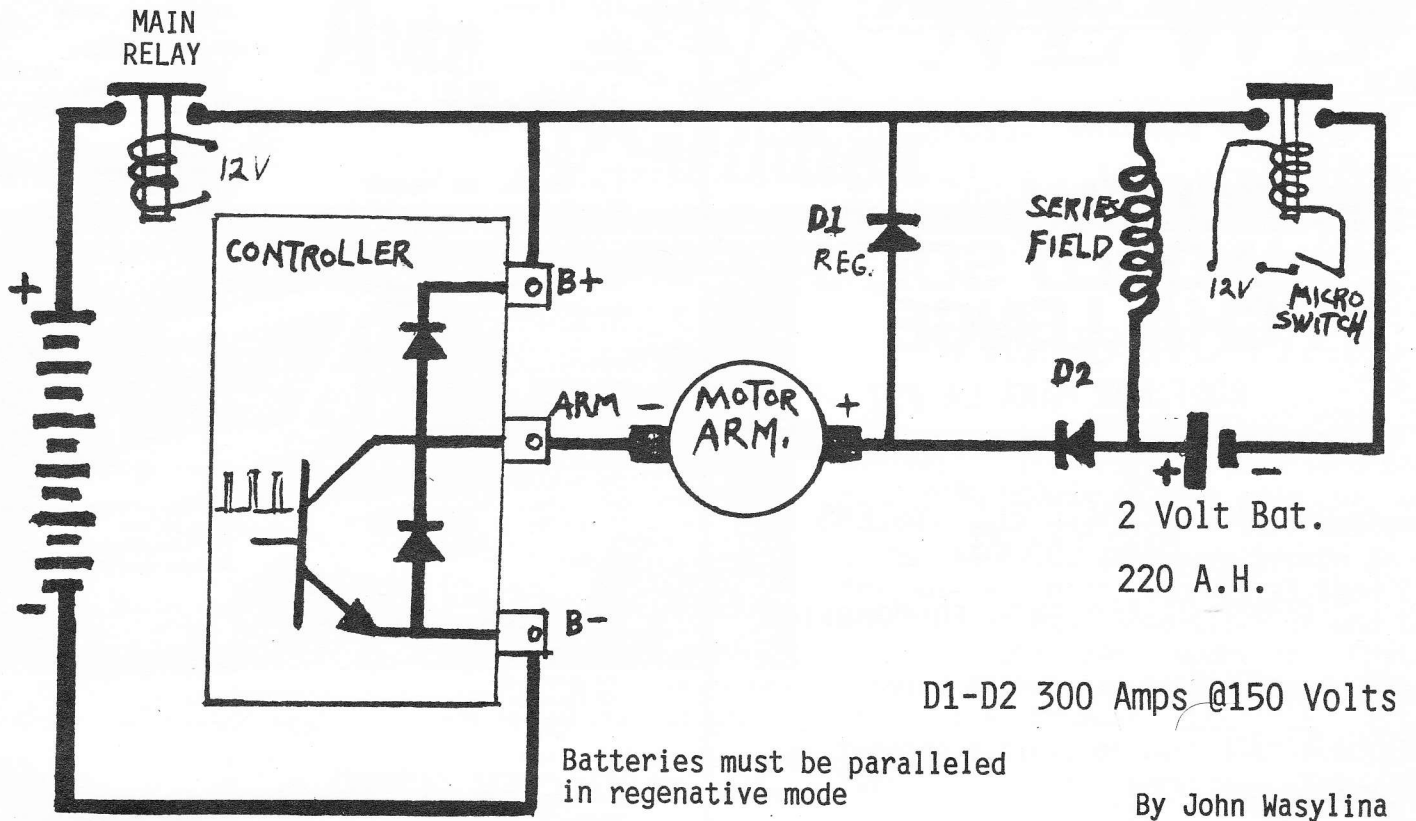
WE NEED YOUR HELP!

Send checks to project X, Lee Hemstreet 787 Florales Dr. Palo Alto, CA 94306.

SURVEYS SHOW THE SMALL VAN TO BE THE MOST MARKETABLE VEHICLE AROUND THE WORLD!

Study Focuses On State Energy

To insulate California from disruptions in the world oil market, a new study calls on the state to encourage greater use of natural gas and research in alternative fuels. The California Energy Commission report also asks the state to investigate setting up a California or West Coast strategic petroleum reserve. Asserting that lower oil prices and ample supplies have lulled the public into a dangerous complacency, the draft "Biennial Fuels Report" says the transportation sector, which relies almost 100 percent on petroleum fuels, needs to be steered into alternative fuels, such as methanol, natural gas and electricity. The recommendations will go to the governor and the legislature.

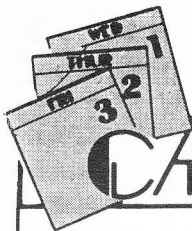


NOVEMBER 10 Th. IS ABSOLUTE DEADLINE FOR 1988 CALENDAR



Translucent Kapton like this is the key to flexible solar arrays that can power spacecraft. Here, SSD engineer Russ Mandy inspects the holes where an adhesive welds Kapton substrate and solar cells into an array. Dark patterns are copper

circuits that carry electricity from solar cells to the spacecraft's electronics. Rigid solar arrays were standard until SSD introduced flexible arrays for the Solar Array Experiment that was tested successfully on the space shuttle in 1984.



CALENDAR

NOV. 1:

OFF-AND RUNNING ACROSS AUSTRALIA



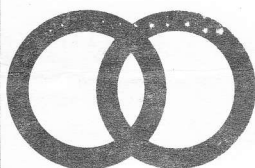
PENTAX WORLD SOLAR CHALLENGE

ROOT FOR MANA LA #32

EAA MEMBER JONATHAN TENNYSON
TEAM LEADER FOR
JOHN PAUL MITCHELL SYSTEMS
MANA LA* #32

*'power of the sun' in Hawaiian

NOV. 17-19



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of the newsletter send SAE #10 envelope.
PHONE (415)591-6698

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NOVEMBER 1987

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