

THE BEST OF LONG BEACH

The announcement that the G-Van will be in production this year and the Chrysler TEVan will follow next year, is very exciting. The fact that this program, backed by the utility companies represented at the conference and the enthusiasm of the manufacturers executives present indicates that this project is on track and will proceed on schedule. Power companies consider the promotion and use of EV's as product development, they estimate 100,000 vans would net \$30 million per year and expect to reach this number within 20 years, each van equals one and a half to two households.

LIFE TIME BATTERY FOR EV'S! The consensus seemed to be that the nickel-iron battery will develop into a lifetime battery-projected 1000 cycles, 100,000 miles from on-going actual driving test at TVA test track in Tennessee, now at approx. 50,000 miles showing 98% energy remaining. Eagle-Picher has introduced a Nickel-Iron module compatible with BCI Group GC-2 (direct replacement for our present batteries). Designated the NIF-170-5 the engineering prototype now cost \$1,800 for a six volt module, by capturing a large share of the golf cart, in plant, airport and EV market the in production cost is projected to be \$125 with built-in single point watering system. With 20% less weight, 30% more energy and proven reliability this should not take to long.

The first Chrysler TEVan prototype will go to powerplex this summer to be fitted with the sodium/sulphur module (pg. 9 of March issue). The second TEVan will use 30 6 volt nickel iron batteries described above. Chrysler Electronics has designed a complete energy management

Smog Agency Seeks OK of Fleet Clean-Fuel Program

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT Staff officials have ask approval for a broad new clean-fuels program that would require that all vehicles purchased by fleet operators after 1993-including rental car fleets and RTD buses-run on electricity or clean-burning fuels such as methanol. The controls are part of a proposed \$30.4-million, five-year clean-fuels demonstration program to speed the commercialization of clean-burning fuels in the South Coast Air Basin, the nation's smoggiest.

The district's goal is the replacement of 40% of the gasoline-powered passenger cars and 70% of diesel-burning trucks with clean-fuel vehicles by the year 2007.

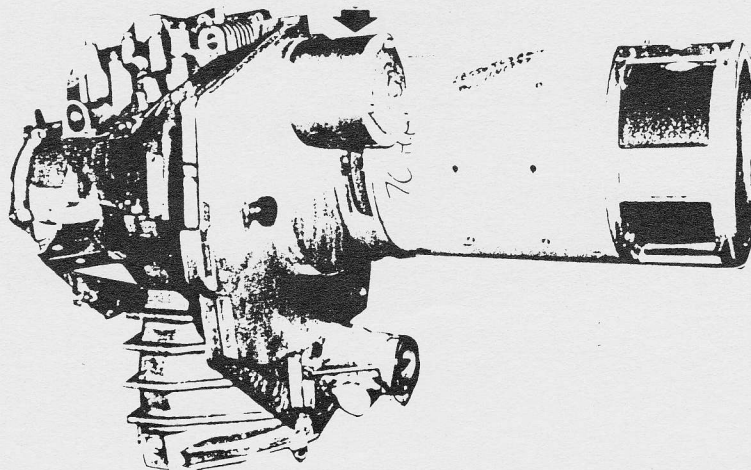
From LA Times Jan. 5, '88

system in one unit, controller, regenerative braking, battery charger, system status monitoring and diagnostics, parameter sensing and control, and energy usage optimization. This system is rated at 54,000 watts at 180 volts. Chrysler has modified the standard manual transmission to a two speed electrically shifted automatic. The van body is raised three inches to avoid intrusion of batteries into cabin. Payload 6 passenger/1200 lbs. 120 miles min. range, max. 70 MPH, 0-30 7.5 sec., 25-50 14 sec. TYP.

The whole conference was very up-beat and on tract, I believe this is what we have been waiting for the past 20 years. I overheard Dr. William Adams University of Ottawa say "When we came we had nothing now we have an industry".

Clarence Ellers

CHRYSLER TE-VAN'S ELECTRIC SHIFTING TRANSAXLE SHIFTER, POWERED ONLY WHEN SHIFTING



1987 WORLD SOLAR CHALLENGE SCORE SHEET

*PLEASE NOTE! SOME OBSERVERS WERE NOT USING DISTANCE SHEETS.
THEY USED CAR ODOMETERS THAT MAY VARY 5-10%

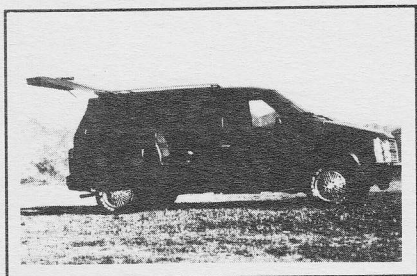
DAY BY DAY NOT 100%

CAR NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	329	295	370	156	282	337	423	365	332	115								
2	137	176	227	192	156	222	203	237	132									
3	210	205	190	177	120	212	237	220	182	193	207	148	149	149	118	118	169	
4	161	151	205	214	139													
5	61	73	68	Observers sheets nor recived, they are still going.														
6	173	166	149	137	114	169	186	200	163	200	215	210	142	217	150	101	212	100
7	400	427	373	229	389	436	449	301										
8	172	87	118	181	167	253	216	233	39	137	142	178	230	252	283	178	137	
9	108	38	70	127	80	129	157	139	147	135	168	163	Still going					
11	185	245	218	202	119	258	243	255	273	263	256	249	162	76				
12	221	298	320	109	139	307	371	359	256	324	289	11						
13	312	245	110	69	162	212	208	214										
14	139	150	162	160	153	189	94	242	172	232	223	245	205	239	208	100	91	
15	307	294	325	102	171	306	382	325	226	250	316							
17	411	441	399	270	184	445	447	487										
18	119	151	110	130	125	103	218											
19	128	59	212	254	164	268	266	208	286	265	289							
20	58	87	17															
21	89	20																
22	216	132	137	158	173	160	226	189	109									
32	380	115	137	120														
88	521	583	573	575	597	155												
99	277	229	208	88	138	241	168	135	103	239	242							

SEE PG-2 NOVEMBER '87

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Featuring increased range and improved performance, the Chrysler TE-Van has the potential to reach commuter markets in addition to commercial van fleets.

Detroit Edison Emphasizes the EV's Potential

At the Detroit Edison Company, too, the National Van Market Survey has bolstered confidence in the marketability of EVs. "Basically, the survey helped to confirm our expectations of the available market in our service area," says Bill Tripp, Senior Engineer in DECO's Product Marketing and Electric Vehicles Marketing Division. The survey shows that, of the nearly 14,000 vans identified in the DECO service-area introductory market, as many as 6000 are potential candidates for replacement by the GM electric van. And with interest in minivans accelerating in the Detroit area, the introduction of the Chrysler TE-Van (a next-generation EV minivan) could increase the EV market even further.

At this point, DECO is developing plans for its future EV marketing and sales efforts. When the GM electric van and the Chrysler TE-Van become available, Tripp hopes to offer a marketing and customer-awareness program similar to DECO's recent GM Griffon mini-demonstration loans. In that program, DECO loaned seven GM Griffons to local businesses, providing electricity and service free of charge so that they could try out an EV at no cost to themselves. As Tripp sees it, subsidies like these can help spread the word about the next generation of EVs. And if the success of the Griffon program is any indicator, the future of the GM electric van and Chrysler TE-Van in the Detroit Edison area should be bright with the promise for market growth.

EV MARKET GROWS WITH THE TECHNOLOGY

Perhaps the most forceful conclusion to be drawn from the results of the North American Van Market Survey is that technological development and EV market potential are inextricably linked. For instance, a 50% increase in EV range (from 60 to 90 miles) would create a 100% expansion in market size, allowing EVs to meet the needs of 80% of the total van population. Or, looking a few years farther ahead, the commercial introduction of the Chrysler TE-Van, with its nickel-iron battery and 110-mile range, could attract the interest of the van-commuter market, spurring an explosive growth in sales potential.

Improved payload capabilities will also help current-technology and advanced EVs to compete effectively with conventional vehicles. Survey results show that the vast majority of van-fleet owners and managers prefer vans with a one-ton payload—well within the capabilities of the GM electric van. And although the current EV market environment is geared toward cargo-carrying assignments, both current-technology and advanced vehicles will be well equipped to handle passenger-transport missions. With the introduction of the TE-Van, the EV industry will be able to take advantage of that vehicle's advanced features—including front-wheel drive, power steering, power brakes, and comfortable seating for six—to participate in the rapid growth of the minivan market. And advances in battery technology will allow for the luxury of air conditioning in EVs while still meeting the range requirements of both commercial and commuter applications.

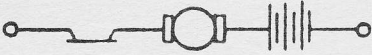
The promise of these technological advances lies, of course, in the future. But the results of the North American Van Market Survey show the EV industry to be on the doorstep of that future, with a near-term market of surprising breadth. As the industry's upcoming product offerings take hold in the market, these EVs should begin to attract the interest of van fleet managers across the nation. And as future generations of EVs begin to appear on American roads, this new technology may well begin to pique the interest of the broader personal-use market as well.

SURVEYS CONTINUE TO MONITOR MARKET EXPANSION

Having analyzed the first returns from the North American Van Market Survey, EVDC is emphasizing the importance of a continuing market research effort. As Jim Brunner of EVDC points out, "The survey process has already been demonstrated and proven, so additional utilities can easily arrange for surveys, adding their results to the national database, and determining the cost of EV introduction in their service areas." For more information, please call Jim Brunner at (408) 253-5262.

The EV Bulletin is published by the Electric Vehicle Development Corporation with partial funding by the Electric Power Research Institute. For more information, write or call the Electric Vehicle Development Corporation at 20823 Stevens Creek Boulevard, Suite 440, Cupertino, California, 408 253-5262.

RUSSCO



ELECTRO-MECHANICAL ENGINEERING

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Russco Electro-Mechanical Engineering is pleased to announce the availability of the new Russco HV/HT, High Voltage/High Torque, electric vehicle propulsion system. Components of this system comprise the Russco Motor, an extensively modified General Electric separately excited D.C. traction motor interfaced with the Russco PFC, Programable Field Controller, along with the necessary peripherals. This system will be available on a very limited basis to consumers for conversion of existing electric vehicles or construction of the latest state-of-the-art high-technology electric vehicle. Major features of this system are:

- Field Strengthening under load to produce up to 145 foot-pounds of motor torque, twice that of the Prestolite system, using the Russco HV-500 Safety Electric Vehicle Controller.
 - Our EV burns rubber in low gear.
 - Our EV accelerates 0-30 MPH in 10 seconds-in high gear.
- Field Weakening under light load to expand the speed range.
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- Variable Electric Braking in any gear, any speed, using no contactors, relays, or DB resistors.
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Electric vehicles equipped with the Russco HV/HT system are driver friendly. Acceleration, shift points, coasting, and braking are performed the same as any conventional vehicle. There is no need to use lower gears only, as with other systems, and the variable electric braking prevents unsafe vehicle downhill runaway. Truly, this is the system.

You are invited to visit our factory in Santa Rosa, CA, USA, to evaluate the HV/HT system in our electric vehicle.

We will be visiting selected EAA chapters Spring and Summer 1988, to demonstrate this system.

Parties interested in the exclusive Russco HV/HT system are encouraged to phone the factory for further information.

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Jack & Heintz G23-4BT, 30 volts-400 amps. aircraft generator. Make an offer Call: Paul (408) 379-8479.

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2CM77 Starter/Generator Shaft only, desperate please Call: Clarence (408) 248-2588.

ELECTRIC POWER IS THE ONLY CLEAN AIR FUEL

Japanese researchers claim to have developed a paper-thin solid electrolyte which could lead to a new generation of compact, liquid-free primary and secondary batteries. The electrolyte, which could also be used in capacitors and sensors, can be made less than 1 mm thick, can operate over an extremely wide temperature range, and avoids the leakage problems of liquid electrolyte devices.

There have been intensive efforts around the world to produce an effective and reliable solid electrolyte but, to date, these efforts have had limited success.

One problem has been that mixing a solid electrolyte with a flexible insulating polymer usually produces a dramatic loss in conductivity.

The Japanese researchers at Matsushita Electric and the Japan Synthetic Rubber Company, claim to have overcome this and other problems by mixing an insulating polymer dissolved in an organic solvent with a powdered inorganic solid electrolyte. The mixture forms a slurry which is then coated or sprayed onto a sheet and dried.

ELECTRIC AUTO LIQUIDATION

All items in factory new condition and are priced at 50-60% of quantity wholesale cost 1980. Quantity prices available. GE 99v. 23hp series motors, \$600. 96/12V, 20-40amp transformers (110V Pri.) \$110. 48/12V transformers (110V Pri.) \$70. Prestolite 48V, 15hp series motors \$500. Contactors, H/B 24V coils, 75-150 amp. SPST & DPST \$45. Contactors, H/B 24V coils 300-600 amp SPST \$65. ALL FOB MASS. METERS (600 AMP, 50+100V). Motor adaptors for Fiat 128/X1-9/Strada & Renault Le Car/GL, cable, hardware, SCR components. CALL: (707) 468-1603, Write Stevenson, 1201 Parducci Rd. Ukiah, CA 95482

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JET Electra Van parts, rebuildable series motors, repairable SCR/Transister Controllers. Also 60-72V Battery Chargers & Transformers. CALL: (707) 468-1603 or write Stevenson, 1201 Parducci Rd. Ukiah, CA 95482.

Custom Machining & Fabrication \$23 per hour. Call: Larry (707) 485-0056.

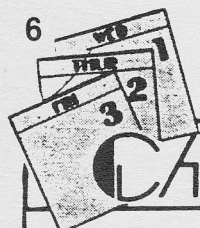
WANTED

13--2N5685 or EGC 29 transistors, EVC Controller trouble? I have Schematic \$5. Call or write Clarence Een, Box 11, Rudyard, MT 59540. (406) 355-4313.

Matsushita says that batteries based on its solid electrolyte will be more reliable than conventional types, will operate over a temperature range of -60°C to 100°C, and will avoid the need for separators as the insulating electrolyte will itself act as a separator.

Electrical Review '87, U.K.

ADS must be received with payment by the 10th of the month, for the following month's issue. AD rate is min. 1 to 5 lines \$5.00. 1/4 Pg. \$15, Full Pg. \$50.00, Full Pg. 2 sides \$80.00, WANTED - TRADE - FOR SALE, etc. Mail to EAA 1249 Lane St. Belmont, CA 94002



CALENDAR

APRIL 4: Dedication of PG&E's New Solar project near Davis, CA. Invitation only, Stanford group will be represented.

APRIL 10-14: Solar Energy Conference, Denver, CO Marriott West (212) 705-7793.

APRIL 19: DSEA meeting on photovoltaics, 7PM Call: George (303) 442-6566. Denver CO.

APRIL 19-20: Environmental Resource Center at San Jose State University, 16th annual "Earth Day 88", theme "Working For The Future". EAA Will be there. Call: Clarence (408) 248-2588.

APRIL 21-23: 28th Annual Convention & Technology Exposition, Red Lion Inn, San Jose, CA (301) 294-8712

NOVEMBER 13-16 EVS9
9th International Electric Vehicle Symposium. Harbour Castle Westin, Toronto, Canada. Sponser EVAC 275 Slater St., Ste #500, Ottawa, Ontario, Canada K1P 5H9 (613) 236-2497.

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