

JUNE 1985

Association

VOL. XVII NO. 6

Great Britain's high-tech hero

Clive Sinclair's inventions keep rolling out the door

Magazines call him "our resident national genius." Queen Elizabeth knighted him two years ago for the range of his achievement. He quit school at 17 and is now a multimillionaire. He is 44.

"INVENTORS DON'T GET SUDDEN, BLINDING BRAINSTORMS, AND -BANG-THEY'VE INVENTED IT."

Sinclair's latest surprise is causing controversy. "I WANT TO SEE THE ELECTRIC CAR REPLACE THE INTERNAL COMBUSTION ENGINE," he said. "AND I THINK IT WILL."

Ever since 1884, constant attempts at the same goal have been foiled by inadequate batteries. But Sinclair said he wondered "what would happen if we take a relatively conventional battery and change everything else? Suppose you redesign everything from scratch, (be) radical in everything else?"

Unveiled in January, his "C5" is a distinct shock--a low, open, one-person trike priced at \$435. With foot pedals beside an electric motor, its top speed is 15 mph and range of about 20 miles.

Sinclair now has released sketches of progressively bigger electric vehicles and says he will produce a genuine four-passenger electric car by 1990.

Thanks to his "Metalab," Sinclair has just claimed a computer breakthrough that could mean "goodbye to the microchip and hello to the wafer," as one newspaper put it.

Sinclair promises to market this year a "wafer-scale drive" for his QL computer, using a giant-chip technique that Trilogy Systems of Cupertino spent hundreds of millions of dollars trying and failing to perfect.

■ San Jose Mercury News

Scientists fear gases will worsen greenhouse effect

SMALL AMOUNTS OF RARE GASES IN ATMOSPHERE MAY COMPOUND ACTION OF CO-2

"We're saying that you now have to think of a change that's two or three times bigger than we thought due to CO2 alone," said Ralph J. Cicerone, director of atmospheric studies at the National Center for Atmospheric Research, where much of the research was done.

Recent government studies of the greenhouse effect have concluded that the earth will see profound climate changes beginning in the next two decades.

Sources of methane include rice paddies and livestock, as well as leakage from natural gas wells and pipelines. But the proportion of methane in the atmosphere may also be indirectly raised through chemical reactions resulting from an increase in carbon monoxide, not in itself a greenhouse gas.

"We're the first company in the world to have mastered this technology," Sinclair boasted recently.

In theory, superchips made of complete 4-inch silicon wafers could eliminate floppy discs and a computer's other moving parts for greater reliability, power and speed.

Today's best microchips store 256,000 bits of information. Sinclair's first wafer stores 7 million. He says his second will store 56 million.

He's building a \$60 million factory to produce second-generation wafers, and already he's designing wafer-based new computers.

"Artificial intelligence is very, very new territory -- for everybody, not just for us," he said. "There is tremendous scope for fresh thinking. Success won't necessarily go to the mighty."

In ancient Greece, he said "free men were served by their slaves, much as we will be by our computers. There is no reason why the result shouldn't be just the same: that is to say, a golden age. Our new golden age."

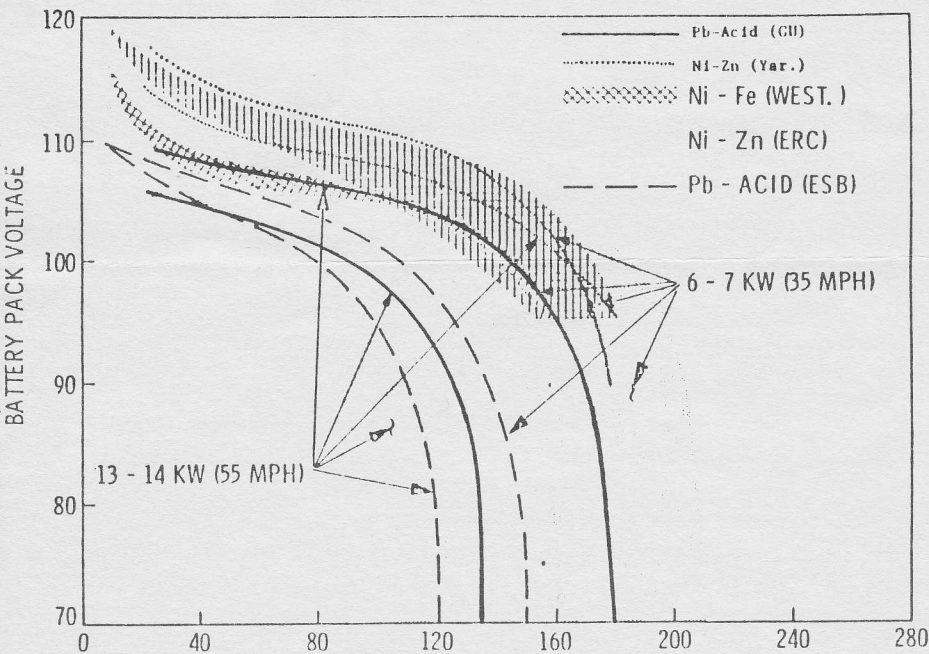
Aerodynamics testing on the way to the C5's uniquely efficient shape.



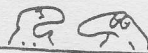
No licence, no road tax: even 14-year-olds can use it.

SINCLAIR C5 A NEW POWER IN PERSONAL TRANSPORT

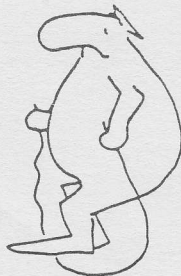
BATTERY DISCHARGE CURVES JPL VEHICLE/BATTERY TESTS



Pat



AL



"I wish you'd hire people with experience. That guy doesn't know what a jumper cable is."

THE FAMILY OF THE
LATE WENDY SKOKAN WOULD
LIKE TO THANK ALL THE FAA
MEMBERS WHO PAID HER LAST
RESPECTS AND SENT FLOWERS.
STAN, PAUL, & DAVID

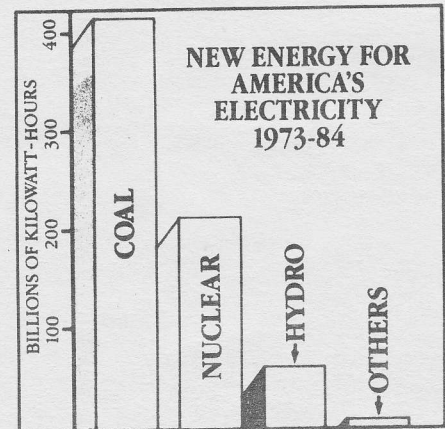
Stan Skokan is one of our top Silicon Valley Engineers and a major force behind the technical accomplishments of our Electric Auto Asso.

The key to energy independence

The growing supply of electricity from U.S. coal and nuclear also reduces our dependence on imported energy.

But we're still a long way from energy independence. America is paying over a billion dollars every week for foreign oil. Last year's "energy deficit" topped \$50 billion.

Greater use of domestic electricity sources means fewer U.S. dollars sent abroad. Nuclear power and coal can meet the country's growing electrical needs and help reduce our dependence on foreign oil.



Coal and nuclear energy have provided over 90% of all the new electricity added to our energy supply since 1973. This has enabled utilities to reduce their consumption of more costly oil and natural gas. Source: Energy Information Administration/U.S. Dept. of Energy.

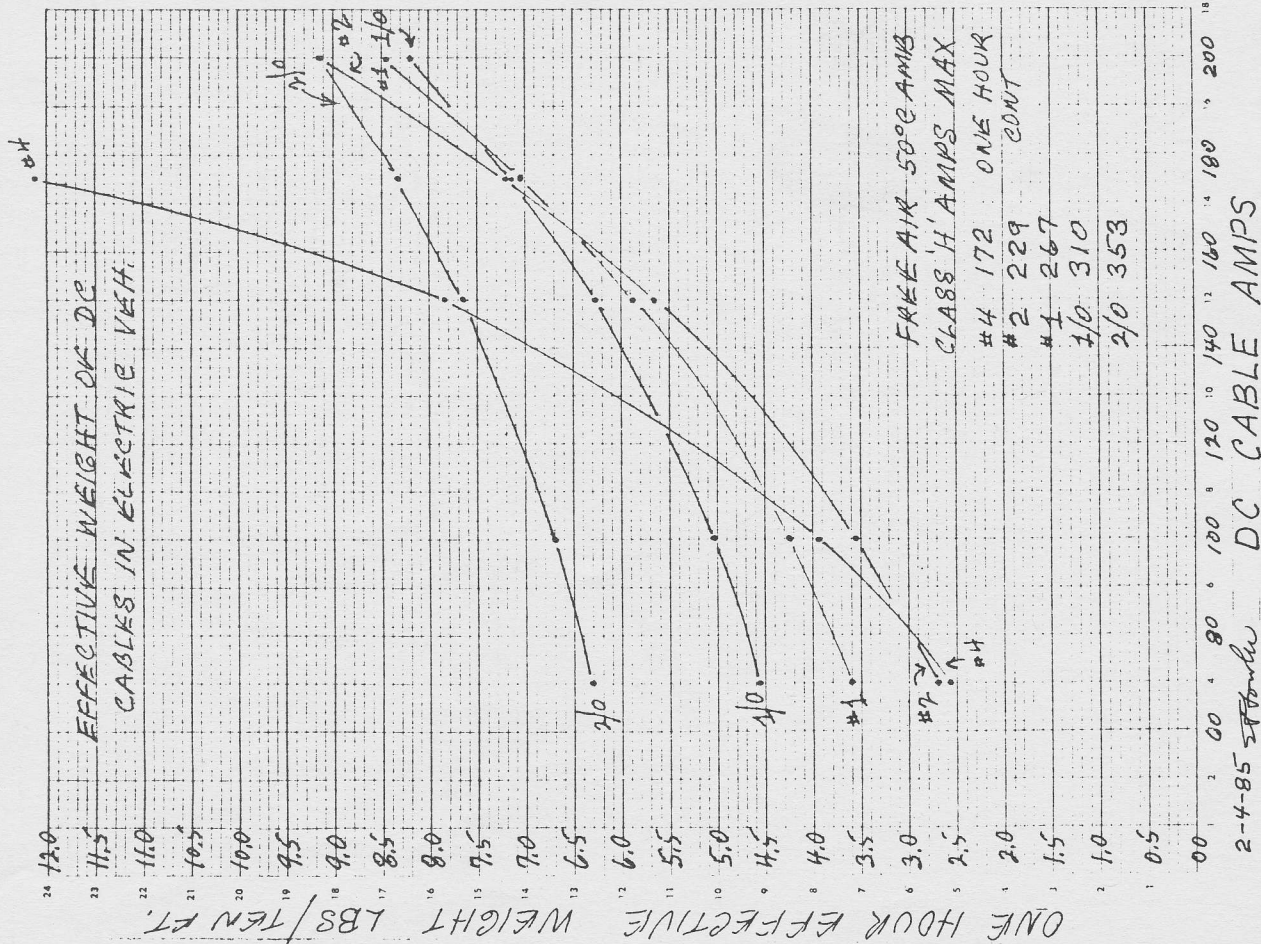
EXIDE EV BATTERY FACTS

WATERING: Lead-acid batteries consume water during charging and require "topping up" periodically. The frequency of this service depends on use and temperature. Only deionized or distilled water should be used and topping up should be performed immediately after a full charge while gas bubbles are still trapped between plates and separators. As a battery ages, the frequency of watering increases. Never, under any circumstances, allow the electrolyte level to fall below the tops of the plates; and never add acid—just water. As a general rule for heavy, daily use, EV batteries should be checked every two weeks for proper levels of electrolyte.

EFFECTIVE WEIGHT OF DC CABLES

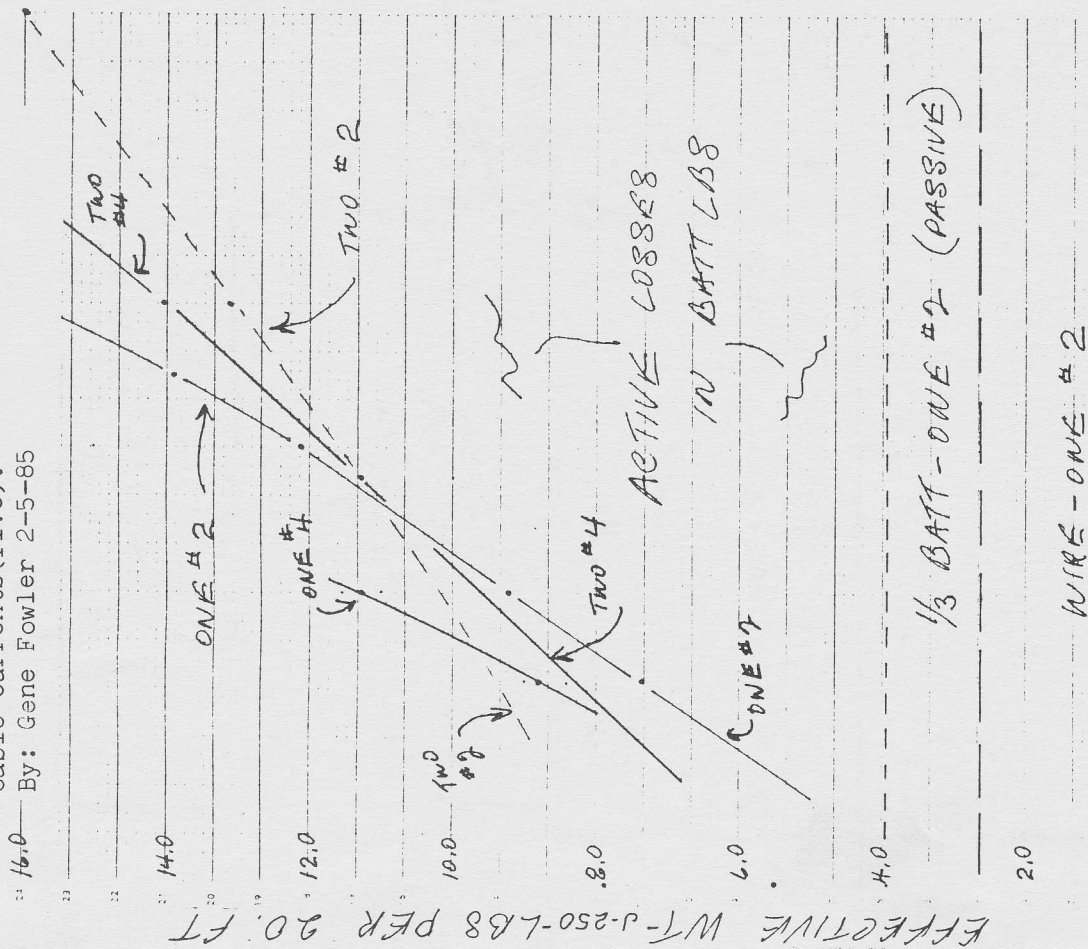
BASIS:

- Weight of ten ft. of copper wire with class H insulation, Ref. GE S1-58221
- Assume battery weight is one third of vehicle curb weight, $A+B=1.5A$
- Calculate single conductor copper temp. C At five current levels at 50 C Ambient in free air. Ref. GE wire and cable book data.



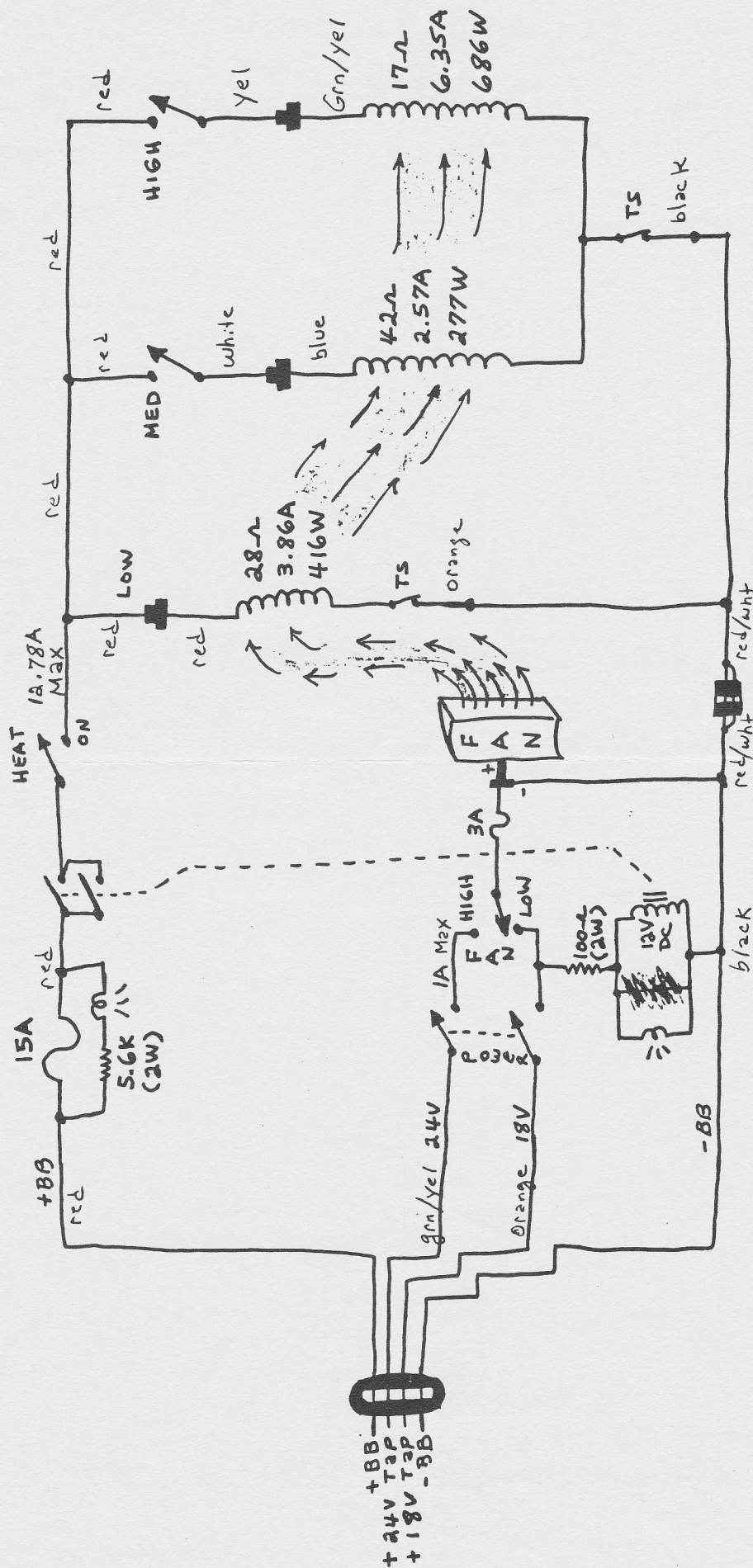
- Calculate copper wire resistance at actual temperature above, using GE copper wire data.
- Calculate wattage loss in watts per ten ft. at actual copper temp.
- Convert watts to equivalent battery wt. by mult. by .08=60#/750 watt hours.
- Total weight= $A+B+F=1.5A+F$
- Plot above data by wire size(five) and cable currents(five).

By: Gene Fowler 2-5-85



EV ELECTRIC HEATER (BWO13)

BY BILL WILLIAMS



BB = 108V

SELECTIONS

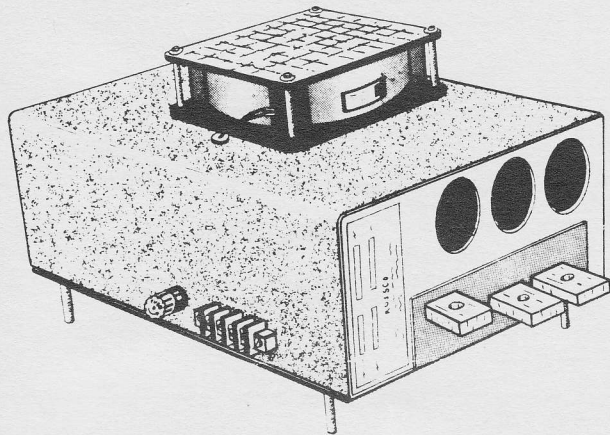
M	H	WATTS
0	0	416
1	0	693
0	1	1102
1	1	1379

MADE FROM HAIR DRYER

©
BW
10-10-84

EV Marketplace

SAFETY ELECTRIC VEHICLE CONTROLLER Model HV-500



SPECIFICATIONS:

- 100-500 AMP
- 24-120 VOLT
- 4000 HZ EFFICIENCY
- FULLY PROTECTED
- REGULATED COOLING FLOW
- SIZE — 4" D x 8" W x 12" L
(101.6mm x 203.2mm x 304.8mm)
- WEIGHT — 14.5 lb. (31.9 kg)
- FULL LINE OF ACCESSORIES
AVAILABLE

SAFETY FEATURES:

- NON-GROUNDED SYSTEM
- ACCELERATOR INTERLOCK
- SOFT-START ACCELERATION
- HIGH-VOLTAGE DISCHARGED
WHEN OFF
- OSHA YELLOW ENCLOSURE
- HIGH VOLTAGE WARNING LABEL
- AXIAL FAN GUARD

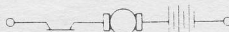
\$550

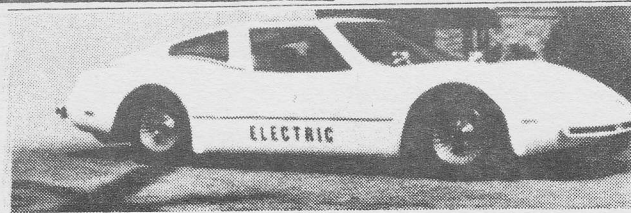
MODELS AVAILABLE UP TO
1000 AMPS AND 300 VOLTS

CALL OR WRITE FOR DETAILS

P.O. Box 3761
Santa Rosa, CA 95402

Telephone:
(707) 542-4151

RUSSCO 
ELECTRO-MECHANICAL ENGINEERING



BRADLEY GT II ELECTRIC: 75 m.p.h, 1500 total miles, 4-spd., fun car \$7,500 Phone Jack (503)659-6966 or 653-6203 8AM to 8PM, Milwaukie, OR.

FOR SALE: 1966 VW Beetle, restored, excellent condition. Willey 8 Controller, Prestolite series motor. Lester automatic charger 84/12V. 14 ALCO Batteries. Complete or parts, BEST offer. Bob Smelter, 5294 Fairfield North, Dunwoody, CA 90338. (404)395-1605.

* * * * *

FOR SALE: 1980 BRADLEY GT II ELECTRIC. 16 New Batteries. Runs Good. \$5500 CALL: (707)226-6230 Anytime.

* * * * *

FOR SALE

96 VOLT SERIES MOTOR
RATED 20.9 HP @ 164 A.

FLANGE MACHINED TO
MOUNT ON VW TRANS-
AXLE ENGINE MOUNT

SHAFT MACHINED TO
MOUNT VW FLYWHEEL
DIRECTLY TO MOTOR
SHAFT

DESIGNED & BUILT FOR
BRADLEY GT.

NEW FACTORY CASE
LIMITED QUANTITY IN
STOCK

\$700 ea.
or OFFER

Boyce or Crane 1099
N. Batavia, Orange, CA
92667- (714)639-0526

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

WHATS HAP'N

EAST BAY - July 13

A visit to Altamont Windfarm

Call: Jim Fahey (415) 848-1468

SUMMER IS RALLY TIME

SEATTLE - July 28

Call: Steve Lough (206) 325-2600

OAKLAND - Aug 10

Call: Jim Fahey (415) 848-1468

DENVER - Aug 24-25

Call: George Gless (303) 442-6566

INTERNATIONAL

SUNNYVALE - Sept 21-22

Call: Clarence Ellers (408) 248-2588

EAA CHAPTERS

Call the contact person for meeting times and places.

ARIZONA: Phoenix Chapter

Greg Whitney 602 849-1872

ARKANSAS: Little Rock Chapter

B.S. Boykin 501 562-0252

CALIFORNIA:

Bakersfield Chapter

James Peters 805 393-1749

Concord: Contra Costa Chapter

Max Rosenstein 415 229-3469

Los Angeles: Burbank Chapter

Il. Weiss 213 849-7632

Oakland: East Bay Chapter

Jim Fahey 415 848-1468

Sacramento Chapter

Weldon Martell 916 726-6257

San Bruno: Peninsula Chapter

Mae Benson 415 992-5453

San Francisco Chapter

Bill Marquardt 415 586-6987

San Jose Chapter

Roy Paulson 408 269-7937

San Rafael: North Bay Chapter

Gordon Schaeffer 415 456-9653

Santa Clara Chapter

Lee Hemstreet 415 493-5892

DISTRICT OF COLUMBIA:

Washington: EVA/DC Chapter

Charles Dammers 301 439-1365

MARYLAND: Baltimore Chapter

D. Michalski 301 289-7896

NEW JERSEY: Moorestown Chapter

Sid Kreitsberg 609 829-2445

OKLAHOMA: Tulsa Chapter

W. E. Watson 918 743-9317

OREGON:

Albany: Linn Benton Chapter

Keith Sherry 503 745-5607

Medford: Rogue River Chapter

George Holbrook 503 772-6856

Salem: Willamette Chapter

Lee Brundidge 503 390-3871

TEXAS: Houston Chapter

Robert Nixon 713 668-4214

WASHINGTON: Seattle Chapter

Steven Lough 206 325-2600

WISCONSIN: Milwaukee Chapter

David Perez 414 481-9655

For information on starting a chapter in your area write Electric Auto Association, 1249 Lane St. Belmont, CA 94002 or call 415 591-6698. For sample copy of the newsletter send SAS # 10 envelope.

EDITORS: - Walter Laski - John Newell - Bill Palmer - Paul Brasch - COMPILED AND PUBLISHED By Clarence Ellers. SEND IN YOUR PERSONAL AND CLUB NEWS AND COMING EVENTS. ARTICLES _ COMMENTS etc. all correspondence to address below.

Electric
Auto



Association

NEWS

JUNE 1985

1249 Lane St.
Belmont, Ca.
94002

NON-PROFIT
ORGANIZATION
U.S. POSTAGE
PAID
SAN JOSE, CALIF.
PERMIT NO. 3021

TIME DATED MATERIAL - DO NOT HOLD