

January 1985

LETTER FROM THE PRESIDENT

At our next meeting, January 18th, we will be honored by the presence of Mr. Obba, who will tell us of his latest projects and perhaps chair a general discussion of state of the art E.V.'s. Let's have a big turnout!

The agenda for the business portion will include the latest on raising funds for the club, critique of Vana's E.V. plans, and discussion of our future plans.

Don't forget that our club has facilities for making P.C. boards for your projects.

Dana Mock

Meeting Locations

Thanks to the efforts of Mr. John Ahern, we have been given approval for the use of the meeting room at Mid-America Federal Savings for the next year. The regular meetings of the FVEAA are anticipated to continue to be held on the 3rd friday of ea. month. Board meetings have been held on the monday following the regular meetings at the Round The Clock Restaurant located at Hale and Wesley Sts. Wheaton, Ill. at approx. 7:30 p.m. This schedule is also anticipated to continue. All are invited to attend.

MEMBERSHIP RENEWALS ARE DUE!



fox valley electric auto association inc.

624 Pershing St. Wheaton, Ill. 60187

FIRST CLASS





*Fox valley electric auto association inc.*

**MEMBERSHIP**

A membership in the Fox Valley Electric Auto Association (FVEAA) is open to everyone. Currently there is only one grade of membership regardless of the members degree of participation in association activities. Membership in the FVEAA is contingent upon payment of the annual membership fee. The membership fee can only be waived by special vote of the Board of Directors. Each member in the FVEAA receives a copy of the FVEAA Newsletter each month. They are also entitled to attend and vote at all association meetings.

All memberships in the FVEAA run from November 1 to October 31 of the following year. The dues are \$15.00 per year payable at the November meeting. New members joining after November shall pay \$1.25 for each month remaining before the following November.

The following form may be used to apply for membership or to re-new one.

Date \_\_\_\_\_

APPLICATION FOR MEMBERSHIP OR RENEWAL

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

- Just interested in Electric Vehicles
- I have an Electric Car
- I wish to build an Electric Car

Amount enclosed \$ \_\_\_\_\_ for \_\_\_\_\_ months.

Make checks payable to : FOX VALLEY E A A.

Mail to : Mr. Vladimir Vana, FVEAA Tres.  
5558 Franklin  
LaGrange, Ill. 60525



*fox valley electric auto association inc.*

## City of Tucson/DOE Demonstrate EV Capabilities

Electric vehicles with air conditioning? Electric vehicles with the standard shift lever and the clutch pedal still in place (although vestigial organs)? you bet, and holding their own very well down in the Old Pueblo, otherwise known as Tucson, Arizona, smack in the heart of the sunbelt.

The City of Tucson is one of the last demonstration site operators chosen to participate in the federally-supported Electric & Hybrid Vehicle Demonstration Program administered by the Department of Energy (DOE). The city was awarded a grant just last year, to run well into 1986. The way Tucson's Operations Department people describe their experiences thus far with EVs, one gets the feeling that these "new generation" runabouts are destined to become permanent parts of the city's vehicle fleet.

According to Lead Industries Association, Inc. (LIA), Donna C.J. Witschi, the on-site EV Project Administrator for the municipal department, receives most of the credit for having the foresight to precisely match existing duty cycles with EV capabilities—long before the vehicles were actually purchased—to assure that Tucson's "Electric Experience" would be all thumbs up.

"All I really did," she says, "is what any conscientious planner starting from ground-zero would do: First analyze the duty cycles of our existing internal combustion vehicles, then learn as much about competitive electric vehicles as possible, and finally determine precisely where and how we could best utilize battery-powered cars and trucks." Her research found that EVs could be used for everyday administrative and field operations to perform a wide range of duties from parks service maintenance to personnel shuttle service.

Next came choosing the right types of electric vehicles for the predetermined tasks. A prime consideration was to find a vehicle supplier in the southwest. Enter Lectra Motors of Las Vegas, Nevada, a prominent EV builder. Result: Tucson purchased 10 EVs

—six Datsun sedans and four Datsun pick-up trucks from Lectra, which converted the assembly-line IC vehicles to electric drive and conducted a comprehensive driver-maintenance personnel training program with the City of Tucson.

Each of the sedans and the pick-ups carry 18 6-volt lead acid batteries (both front and rear mounted); chargers are on-board the trucks and off-mounted for the sedans. Certain design features were specified by the Operations Department—such as air conditioners in each vehicle to combat Tucson's sustained 100-degree F heat during the summer months, and the physical remains of the shift lever and the clutch pedal—just to make drivers feel that the EVs are really no different than conventional vehicles.

While Tucson's EVs haven't been in operation long enough for DOE and its statistical consultants to provide accurate operating (fuel) cost comparisons with comparable IC vehicles, Stanley London, Supervisor of the Operations Department's Fleet Services Division, is already sure that EV maintenance costs are far below those of ICs.

"We've experienced very little downtime for repairs," London states. "The EVs are extremely dependable, especially since we refined our charging regime to coincide with the daily use patterns." At first, London's maintenance staff employed mostly opportunity charging—that is, charging the EVs' batteries whenever it was convenient to do so, regardless of their

state-of-charge. "Then, in consultation with DOE, we determined that because the vehicles average 20 - 25 miles per day apiece (they have a true range of about 30 miles), demand charging overnight was the optimum regime to follow."

Through one summer, London has found that the air conditioners do not appreciably cut down on the vehicles' effective range. And, the few miles that may be lost are made up for by the comfort factor. Another comforting factor is that Tucson's Operations Department pays only about 5.5¢ per kilowatt hour (KWH) for electricity—roughly half the national average. That, London is also sure, will shake out to very economical fuel costs over the long run.

From the City's administrative vantage point, Donald W. Richards, Deputy Director of Operations, and the one who first decided to have the "Electric Experience," already refers to it as a "very positive" experience. So much so, in fact, that he and his people regularly put on EV seminars for other interested parties, disseminate literature on EVs, and encourage local automobile dealers and car buffs to seriously consider EVs as alternatives to ICs.

Within Arizona, Northern Arizona University in Flagstaff and Arizona Public Service in Phoenix are just two of the other organizations already aboard the EV bandwagon.

**THE BATTERY MAN/AUGUST 1983**

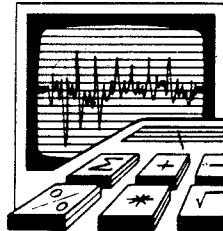


The City of Tucson's "Electric Experience" has been all thumbs up to this point.

## Auto Firms Encounter Delays Perfecting Better Transmission

**T**HIS WAS THE YEAR that General Motors-Corp. and perhaps other big auto makers were expected to start putting a much improved transmission in some cars, specifically some built in Europe, to make them run better and more efficiently.

The device is the continuously variable transmission, or CVT. By operating continuously rather than in distinct stages, as in first or second gear, the CVT is designed to keep a car's engine running within a closer range of its most efficient rate than do conventional automatic transmissions. In turn, researchers say, higher efficiency can improve a car's mileage per gallon of fuel.



Maybe another year. Engineers at GM continue to have problems perfecting CVT technology. "We've developed a few hiccups with the component," says a GM spokesman. One big problem, as anticipated, is the durability of the metal drivebelt that is the most important part of the device. Adds the spokesman, "We're about a year behind schedule" in plans to produce CVTs at the company's Strasbourg, France, plant for use in some European model cars at first and later, perhaps, in U.S.-built cars.

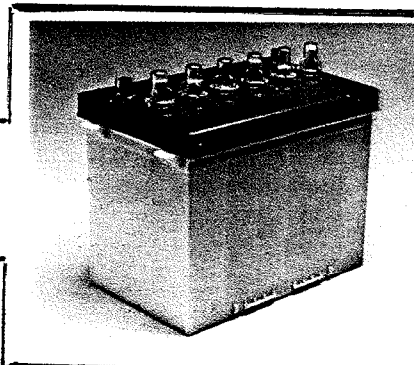
**V**AN DOORNE'S TRANSMISSIE B.V., a Dutch joint venture that holds the patents on the best-known CVT, is having even more severe problems, and its difficulties are rubbing off on auto makers supplied by the concern. Van Doorne's is having trouble making the transition to volume output of the CVT from prototype production of the device. And this week Borg-Warner Corp. pulled out of the financially ailing joint venture by selling its 24% interest to the Dutch government. Others in the venture are Fiat Auto S.p.A. and Volvo Car B.V. of Holland.

As a result of Van Doorne's problems, Ford Motor Co. has had to push back to late next year plans to install Van Doorne's device in European-built Fiesta models. And Fuji Heavy Industries Ltd. is stuck at the pilot-production stage in its efforts to offer a CVT in one of its Subaru minicars in Japan and perhaps eventually in the U.S. A Subaru spokesman says that Fuji's CVT program was delayed a year because of Van Doorne's inability to supply its CVT to Fuji in volume.

But a Ford spokesman says that the company is sticking with earlier plans to switch to production of its own CVTs at a Bordeaux, France, plant in early 1986, to supply Fiat as well as Ford. And the GM spokesman insists that his company is "still very interested" in the technology. "We've always talked mid to late 1980s" as a deadline for making the new transmission practical, the GM official says. "We expect CVTs to be around."

—DALE D. RUSS

For more information on Battery Bobbers, contact Battery Bobber, 15-G Tahquitz Court, Camarillo, CA 93010.



## Drive Electric Expo In Italy In 1985

A first announcement and preliminary call for papers has been issued for the Drive Electric Conference and Exposition to be held in Sorrento, Italy, October 1st-3rd 1985.

Organization for the event is being coordinated through CIVES, the Italian Electric Road Vehicle Commission and Italian Section of AVERE. The assemblage will be at the Conference Centre, Hotel Sorrento Palace. A full up-date on EVs and EHV's worldwide is being prepared.

To obtain a provisional list of topics scheduled for the event write to: A. Taschini, CIVES-CEI, Viale Monza 259, 20126 Milan, Italy. □

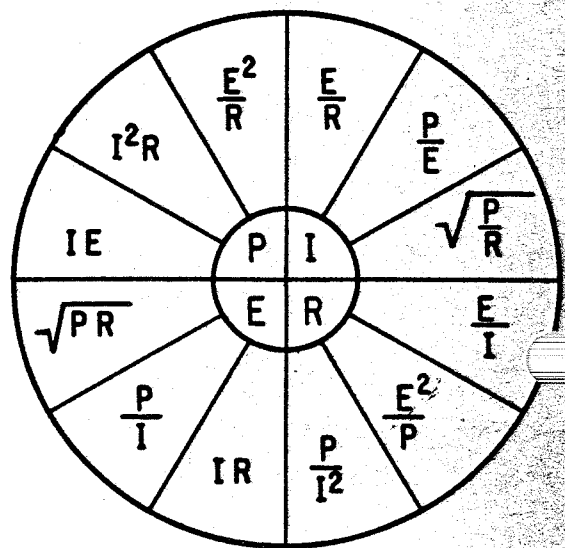


Figure 3-10.—Summary of basic formulas.

### Battery Water-Level Indicator

**Battery Bobber** is a new, time-saving battery water level indicator for car, truck, boat, trailer, RV and golf cart batteries.

Made of clear plastic, Battery Bobbers replace existing single or "gang" vent caps on most 6- or 12-volt batteries, including so-called "maintenance-free" types. A floating bobber inside each cap shows at a glance if any cell needs water—no need to remove caps to check water level.

# New EV Record Set At EAA Rally

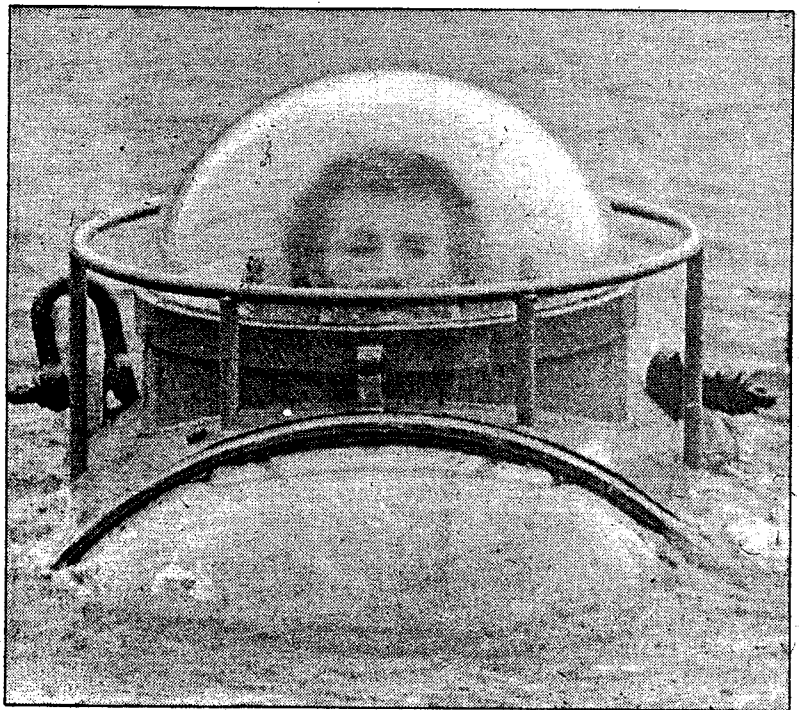
A new record seems to be established each year at the rallies organized by the Electric Auto Association in California.

The 1984 EAA Rally & Symposium held early in September produced a rather startling record by EAA member Saied Motaei. He drove his converted Fiat, powered by 32 ALCO batteries, for 215 miles on a single charge. This was an improvement of 25% over the previous miles-per-charge record which Motaei has set in 1983.

With batteries resting on plastic trays, Motaei installed mini-pumps to recirculate the electrolyte in each of the batteries. Small holes in the battery casings, top and bottom, permitted tightly-fitted flexible tubings to be attached to the mini-pump atop each 6v 3-cell battery.

In addition to the increase in range, the systems has been reported to cut recharging time just about in half.

Another incidental record came from the Californian's drive to bring his car to the EAA event. To get to the Rally, Motaei made the 147-mile trip in two-and-one-half hours. □




AP Laserphoto

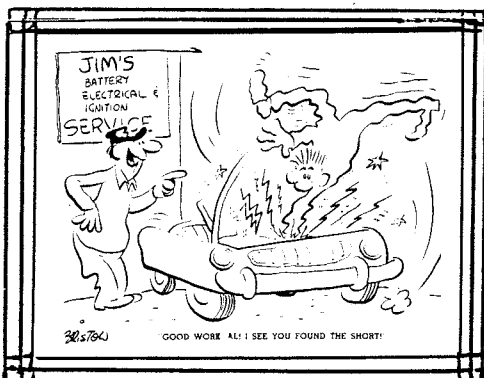
Ned Jago emerges from the deep in a miniature submarine during a test run in Axmouth, England. Jago, who designed the one-ton, 7 foot, six inch battery-operated sub, concluded after successfully completing the tests: "It was comfortable and stable and best of all there were no leaks."

# HAMFEST

Sunday, January 20, 1985



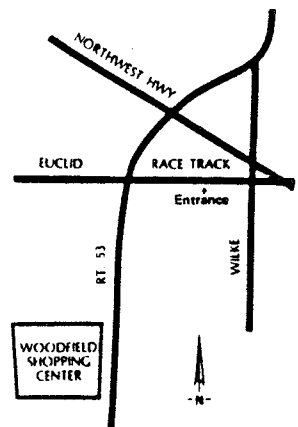
**2,200 WINDMILLS**  
IN ALTAMONT PASS NEAR SAN FRANCISCO, CALIF.,  
ARE PRODUCING OVER 20,000,000 KILOWATT HOURS  
OF ELECTRICITY A YEAR.



SHOULD HAVE SOME  
AT JAN. MEETING

Doors open 8 a.m.

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Expo Center**  
Arlington Park Race Track  
Arlington Heights, Illinois  
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- FREE FLEA MARKET TABLES
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- ALL IN ONE BUILDING
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**TICKETS:**  
\$3.00 in advance  
Special "Double Chance"  
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**Hourly Grand Prizes!!!**

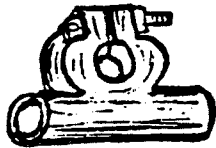
Beginning at 10 am

6 Yaesu FT-209RH H T's  
3 Commodore 64 Computers

FOR GENERAL INFORMATION:  
Call (312) 231-7497

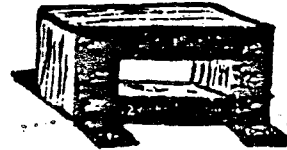
Talk in on 146.01/.61 Mhz.

SOLID BRASS BATTERY CONNECTORS  
solder on type fits # 00 & 000  
can be used on either pos. or neg. terms.



75 ¢ each

STEEL LAMINATED CHOKE CORE  
can be wound with 10 turns of # 00  
cable. (approx. 12 ft.)



\$5.00

BLACK HEAT SHRINK TUBING  
use to finish end of battery cables.  
shrinks from 3/4" to less than 1/2"  
using a gas flame or heat gun.



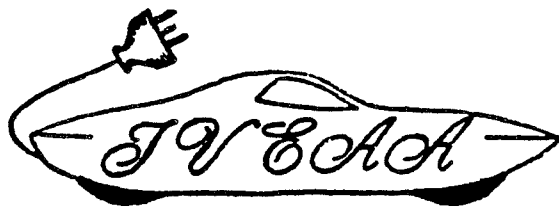
50 ¢ per foot

200 AMP. RELAY



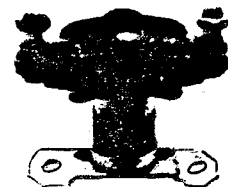
24-28 Volts D.C. U.S.A.F.

\$15.00  
ONLY A FEW LEFT



ALSO -  
SOME HEAVY  
BATT. CABLE  
+ FREE TUBING

400 AMP. RELAY



\$245.00

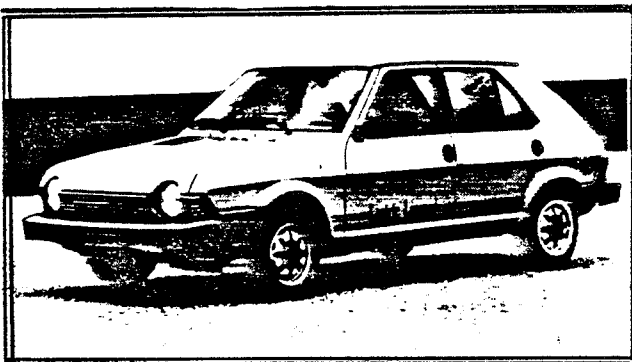
12 V COIL

Single Pole  
Single Throw

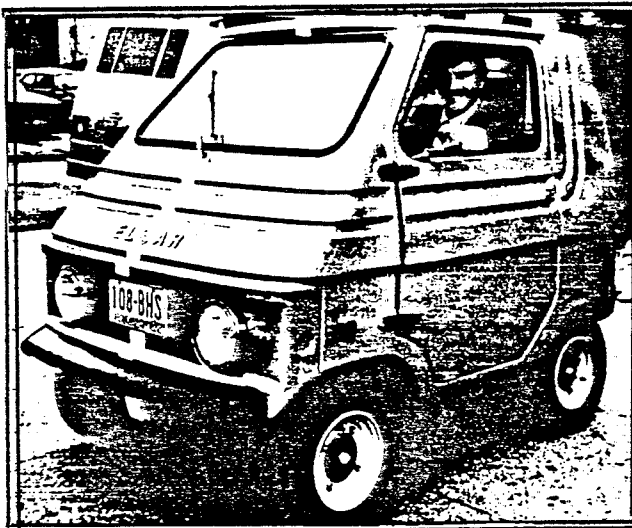
Overall Dimensions  
5 1/4" L., 2 1/2" W.

LIMITED  
SUPPLY

ITEMS AVAILABLE AT CLUB MEETINGS



FOR SALE 1981 LECTRIC LEOPARD  
Model 96A Fiat Strada 4 door  
with sun roof Runs perfectly \$2000.00  
John Kennedy 687 - 6398  
15800 Terrace Dr.  
Oak Forest, Ill. 60452



FOR SALE ELCAR complete \$950.00  
or will sepearate. Needs differential -  
can use Citicar rear-end.  
Chassis with fiberglass body - \$175  
10 Trojan batteries , 105 Amp with  
less than 800 miles on them - \$275  
Lester batt. chgr. 48v & 12v - \$135  
Lambert transistor controller - \$495  
6 H.P. GE series wnd. 48v Mtr. - \$295  
Don Kubick 437 - 0453  
249 Arlington Heights Rd.  
Elk Grove Village, Ill. 60007