



DECEMBER 1985

NOTICE

NO DECEMBER MEETING



MEETING NOTICE

THE NEXT MEETING WILL BE FRIDAY JAN. 17th, at MID AMERICA FEDERAL SAVINGS 250 E. ROOSEVELT RD. WHEATON, ILLINOIS. - TIME - 7:30 P.M.

GUEST SPEAKER

NO GUEST SPEAKER - - - - - NO DECEMBER MEETING

DUES ARE DUE

A MEMBERSHIP RENEWAL APPLICATION BLANK IS INCLUDED.

MINUTES

MINUTES OF THE NOVEMBER MEETING ARE INCLUDED.



PRESIDENTS NOTES

HAVE A MERRY CHRISTMAS AND A HAPPY NEW YEAR. SEE YOU ALL AT THE JANUARY MEETING.

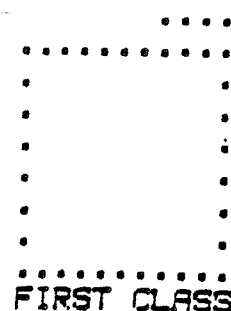
NEWSLETTER ITEMS

(Ads will run for 2 months at a time unless I hear otherwise)

ANY CLUB MEMBER WISHING TO SUBMIT ARTICLES, DRAWINGS, WANT ADS, EDITORIAL COMMENTS, SPECIAL NOTICES, ETC. SHOULD MAKE SURE IT REACHES ME NO LATER THAN 2 WEEKS PRIOR TO THE NEXT MEETING (about Jan. 6th) IN ORDER THAT IT BE PUBLISHED IN THE JANUARY NEWSLETTER. SEND TO: John Emde FVEEA Editor, 6542 Fairmount Ave., Downers Grove, Ill. 60516



FOX VALLEY ELECTRIC AUTO ASSOCIATION  
624 PERSHING ST. WHEATON, ILL. 60187



MERRY CHRISTMAS



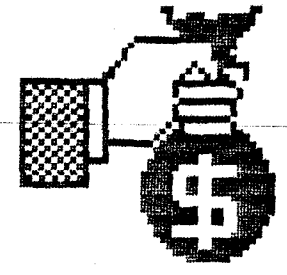
Minutes of Regular Meeting of The Fox Valley Electric Automobile Association.

November 11, 1985

The Meeting was called to order by Acting President Dana Mock at 7:40 P.M.

The following Treasurers Report was given by Vladimir Vana:

Balance as of 11-15-85	Checking	\$ 718.17
	Savings	725.57
	<hr/>	
	Total	1443.74

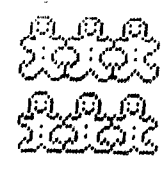


The Treasurers Report was accepted and approved as read.

The Minutes of the October 1985 Regular Meeting were approved as submitted by Acting Secretary, Paul P. Harris and as published in the November 1985 Newsletter.

A slate of candidates for Club Officers for the next year was presented. They were subsequently unanimously elected by the members present. They are:

- |                |                |
|----------------|----------------|
| President      | William Shafer |
| Vice-president | John Newton    |
| Treasurer      | Vladimir Vana  |
| Secretary      | George Zarins  |
| Dir. at Large  | John Emde      |
| Propt'y Mgr.   | Dana Mock      |



As a fund raising activity, it was agreed upon to pursue a "coupon book" sales program. The books entitle the bearer to purchase 2 meals for the price of one at selected restaurants in the Chicago area. The club pays \$1.25 for each book. We expect to sell them for \$5.00 each. They are now available through Dana Mock. They need not be paid for in advance!

Our liason with Mid America Savings, John Ahern assured members that we have approval for use of the meeting room for another year. Official confirmation should follow shortly.

Thanks to our member, Horace Wetherby, the club has received a donation of 70 - 6 volt, dry charged, lead acid batteries. They are new and only need the acid to activate them. They are not deep cycle batteries but rather the standard automotive battery with the old style round lug terminals. (POSTS) A motion was made and carried to rese~~ll~~ these batteries at \$5.00 each.

The evenings presentation was given by Vladimir Vana on his recent trip to the EV Rally held August 17, 1985 near Sunnyvale, California. Vladimir had numerous photographs of the vehicles in the Rally. Much of the vehicle performance data that was discussed at the meeting will be published in the Newsletter. (pages 5 & 6)

The Meeting was adjourned at 8:50 P.M.

George Zarins, Secretary





FOX VALLEY ELECTRIC AUTO ASSOCIATION  
624 PERSHING ST. WHEATON, ILL. 60187

Rev. Dec. 1984

### 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 1st TO OCTOBER 31st OF THE FOLLOWING YEAR. THE DUES ARE \$15.00 PER YEAR PAYABLE AT THE NOVEMBER MEETING. NEW MEMBERS JOINING AFTER NOVEMBER SHALL ONLY PAY \$1.25 FOR EACH MONTH REMAINING BEFORE THE FOLLOWING NOVEMBER. (see chart below)

NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
15.00	13.75	12.50	11.25	10.00	8.75	7.50	6.25	5.00	3.75	2.50	1.25

THE FOLLOWING FORM MAY BE USED TO APPLY FOR MEMBERSHIP OR TO RENEW YOUR MEMBERSHIP.

cut-----cut

### APPLICATION FOR MEMBERSHIP OR RENEWAL

DATE \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

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

PHONE # \_\_\_\_\_

- JUST INTERESTED IN ELECTRIC VEHICLES
- I HAVE AN ELECTRIC VEHICLE (describe) \_\_\_\_\_
- I WISH TO BUILD AN ELECTRIC VEHICLE

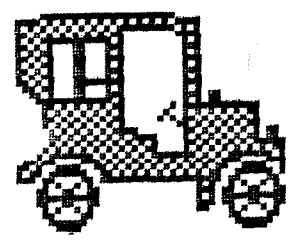
AMOUNT ENCLOSED \$ \_\_\_\_\_ FOR \_\_\_\_\_ MONTHS.

MAKE CHECKS PAYABLE TO: **FOX VALLEY EAA**

MAIL TO: MR. VLADIMIR VANA, FVEAA TRES.  
5558 FRANKLIN  
LA GRANGE, ILL. 60525

RENEW Now, Don't MIS.  
A SINGLE COPY OF OUR NEWSLETTER.

AMPERES AREN'T ALL THAT'S NECESSARY FOR EFFICIENT OPERATION OF THOSE CARS OF THE PAST AND FUTURE - THE ELECTRICS. SO SAY FORD MOTOR CO. RESEARCHERS DAVID TENNISWOOD AND HELMUT A. GRATZEL. REFINED AERODYNAMICS, TIRES AND BODY CHASSIS MATERIALS, THEY SAY, COULD EXTEND THE RANGE OF PROPOSED ELECTRIC CARS BY 80%. DRIVING RANGE, LIMITED BY NECESSITY FOR RECHARGE, HAS BEEN THE MAJOR HURDLE FOR RE-INTRODUCTION OF ELECTRIC AUTOMOBILES. THE RESEARCH ENGINEERS SAY THE RANGE PROBLEM CAN BE SOLVED IF, ECONOMICALLY, THE STORED ENERGY PER POUND OF BATTERY CAN BE INCREASED, AND IF THE VEHICLE'S ENERGY REQUIREMENTS PER MILE OF TRAVEL CAN BE REDUCED. THE RESEARCHERS AGREE THAT AN EFFICIENT ELECTRIC CAR MUST BE DEVELOPED AS AN ENTIRELY NEW VEHICLE FROM THE GROUND UP. ELECTRIC CAR BUILDERS MUST AIM FOR REDUCTION OF DRAG, THROUGH MORE EFFICIENT AIR INTAKES, FLUSH GLASS, AND EXTERIOR CLEANNESS; MINIMIZATION OF ROAD LOAD THROUGH TIRES THAT OFFER LESS ROLLING RESISTANCE; AND REDUCTION IN BODY WEIGHT, THROUGH USE OF NEW MATERIALS AND COMPONENT DESIGN.



*Energy efficiency and conservation are all-important from now on.*

TENNISWOOD AND GRATZEL ENVISION A 4-PLACE VEHICLE OF 2500 lb., POWERED BY SODIUM SULFUR BATTERY, CAPABLE OF TRAVELING FREEWAYS AS WELL AS CITY STREETS. THEY ADD, "IT IS ESSENTIAL THAT THE DRIVING RANGE OF THE ELECTRIC CAR PER BATTERY CHARGE BE SUFFICIENT TO FULFILL THE NEEDS OF THE GENERAL PUBLIC."

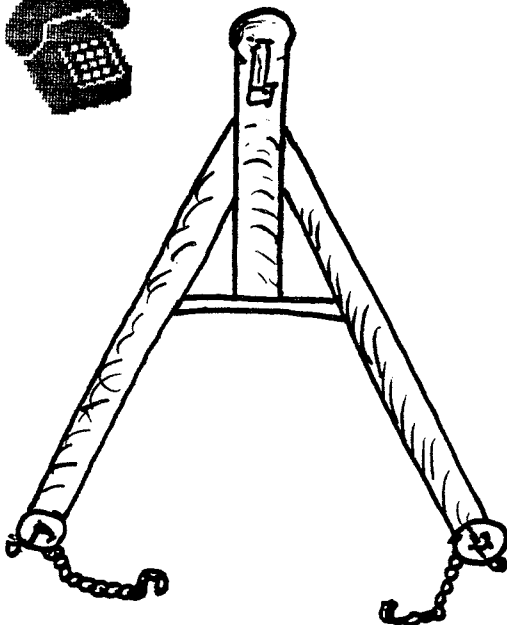
NOW COMES THE DIFFICULT PART - TRANSLATION OF CALCULATIONS INTO HARDWARE.

From : CAR LIFE MAGAZINE APRIL 1967 !!!!

1967 ?

NEED TO TOW YOUR CAR ?

The F.V.E.A.A. club is now in possession of a universal type tow bar. Seems to be the type which can be attached to most any vehicle. FREE use for club members. Contact Dana - 759-8033



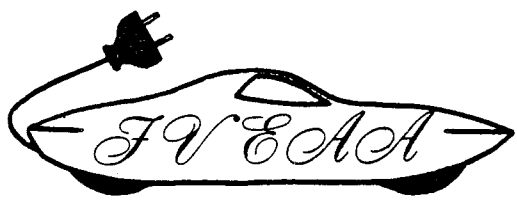
**"FOR SALE" PARTS**

ELCAR

- Chassis with fiberglass body --- 100<sup>00</sup>
- 10 Trojan batteries ,
- less than 800 miles on them --- 200<sup>00</sup>
- Lester batt. chgr. 48v & 12v --- 100<sup>00</sup>
- Lambert transistor controller --- 400<sup>00</sup>
- 6 H. P. GE series wnd. 48v Mtr. - 150<sup>00</sup>
- Don Kubick 437 - 0453
- 249 Arlington Heights Rd.
- Elk Grove Village, Ill. 60007



*MUST SELL !!*



# SYMPOSIUM '85

Mr. Bob Aronson of Electric Fuel Propulsion Corp from Ft. Lauderdale, Florida started the symposium off on a good note. He told us he just returned from Japan where the Daihatsu organization is expecting to have 200,000, two passenger electric cars on their home market in 1986. In addition they plan to manufacture 50,000 small electric vans. He says that his corporation is working on the specifications for a 1/2 ton electric van. One goal for this van is quick charging.

Joseph Callaham of NiCal Products (Thermo Batteries of Calif. showed pictures of their "Thermo" battery and the "oil" mixture they use in their lead-acid battery. They were of course pleased when John Wasylina won the award for the most efficient vehicle using a complete set of their Thermo Batteries on board.

Bill Palmer presented view graphs of the data accumulated by TVA at their Electric Vehicle Test Track. The Lucas Chloride Lead-Acid battery test pack has been tested to 21,000 miles and the Eagle Pitcher Ni/Iron battery to 24,000 miles. The Alco "2400" battery now has explosion proof caps and a 20% increase in capacity. You will not find these on sale for golf carts. They are specifically designed for electric cars. This seems to be a first.

Erwin Ulbrich, an EV expert from Whittier Ca. informed us about his bench testing of batteries. He told us about one set of batteries that were 6 years old and had the equivalent of 6,000 miles on them. They were considered useless but when put into "regular use" as simulated in the bench tests they had an additional 8,000 miles in Los Angeles traffic, a total of 14,000 miles. Not bad for 6 year olds! He showed us a unique DC-DC converter, an ordinary hand drill coupled to a generator. A noisy charger for your control battery, perhaps? He also let us view his imaginative 1000 lb. was towed by a skate board underneath the car. No joke he has data from these tests! The skate board is forced along the roadway by a linear motor in the roadway.

Now see what you missed if you were not at the symposium. John Newell....

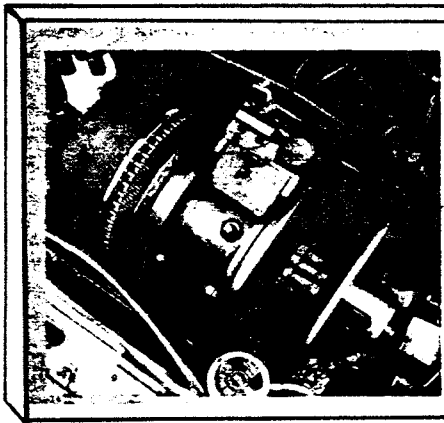
# Winterize your automobile



You don't have to be a mechanic to know that certain precautions should be taken to winterize your auto from the harsh effects of snow, ice, and road salts. Take the time this fall to protect and prepare your car for the cold winter ahead.

Out-of-sight should not be out-of-mind when it comes to protecting the under-body of your auto from road salt, alkali, acids and other contaminants. Check these areas and touch-up exposed sections with an easy-to-use aerosol spray such as Krylon auto body under-coater. It provides a tough protective film which dries quickly and resists those chemicals and elements that cause abrasion and rust.

Your winter fitness products should include an all-purpose silicone spray. Cold temperatures tend to make everything from rubber gaskets to weatherstripping insulation inflexible. Use a spray such as the Krylon all purpose silicone type to lubricate rubber mountings and keep the parts soft and flexible. It also prevents doors, locks, and trunk lids from freezing. †



**A Prototype Auto Transmission** developed by Gates Rubber Co. has passed a 52,000-mile certified road test. The belt-driven continuously variable transmission, says Gates Rubber, will last the life of a compact-sized car with a 1.7-liter engine, and is 17-percent more mechanically efficient and provides 15-percent better gas mileage than a conventional automatic three-speed gear transmission.



*This is the latest Swiss-built electric Carville. It now has a four-speed gear box from Citroen, and both motor and battery are located between the rear wheels. Top speed is said to be 80 km/h, and range 100 km. It is a luxury model, costing about \$17,500 in Switzerland.*

# THE STAR OF THE SHOW

## JOHN WASYLINA

### RENUALT 4DR. 4 PASS. 69.3

By far the biggest crowd seen at the September International Rally Sunnyvale Ca. was gathered around JOHN WASYLINA'S NEW RENAULT.

John is our most prolific member, having converted at least 10 cars completely. He lost count at 10, however, if you checked 2 out of 3 of the 40+ cars at the Rally you would find John's handiwork, at least connected with the machine work (motor mount). This in spite of the fact that John's expertise is Electrical.

John was a pioneer in the development of Silicon Valley. From 1935 to 1974 John owned and operated Excel Transformer Co. which was a major supplier of transformers to most of the manufactures in the area. John probably developed his machinist skills keeping all those winding machines running.

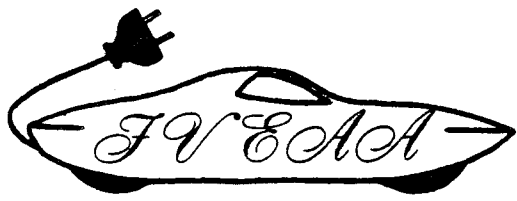
The 1983 Renault that John drove in the Rally was voted the best looking car and also won the efficiency award which John has won almost every Rally.

How can any of us say we're too old to start a new project when we have a role model like John who is 76+?

#### RESULTS OF 1985 ELECTRIC AUTO ASSOC RALLY - STANDINGS BY EFFICIENCY SANTA CLARA - 6.3 MILE COURSE (GROSS WEIGHT INCLUDES 300 LBS FOR DRIVER AND PASS.)

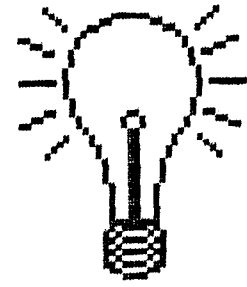
RANK	EFFIC RANK	NO. LAPS	ENTRY NO.	OWNER NAME	CAR TYPE	GROSS WEIGHT	CLASS	AREA SQ-FT	NO. BATTS	AMPHR RATING	MILES FACTOR
1	2.76440	11	20	JOHN WASYLINA	BROWN RENUALT	2830	STOCK	22	10	95	25.0687
2	2.21684	17	2	BILL WILLIAMS	HONDA	3250	STOCK	22	18	105	49.3118
3	1.88592	15	11	FRED SCHILLEIL	VW CAR	2630	CUSTOM	21	16	217	59.1000
4	1.71417	15	21	LLOYD WENZEL	WHITE 2DR HONDA	3100	STOCK	18	18	05	55.1284
5	1.45509	16	29	WILLIAM KUEHL	73 RED HONDA	3200	STOCK	18	24	105	69.2736
6	1.40071	12	23	STAN SKOKAN	JET ELECTRA	3530	COMMERCIAL	22.5	16	250	53.6661
7	1.36777	9	25	PAUL AKMAN	HOMEMADE M.C.	675	2/3 WHEEL	9	4	105	41.4542
8	1.36471	17	1	SAIED MOTAEI	GREEN FIAT	3700	CUSTOM	22.1	32	105	78.4781
9	1.28568	9	32	G. SCHAEFFER	DATSUN PICKUP	3640	STOCK	23	18	217	44.1909
10	1.21560	11	16	G. HARGREAVES	DUCATI	1100	2/3 WHEEL	10	8	217	57.0088
11	1.14939	8	7	D. GILLIS	VW	3150	CUSTOM	22	16	105	43.8492
12	1.14730	0	4	BILL WILLIAMS	BLUE DATSUN	2622	STOCK	21	14	105	43.9291
13	1.07503	13	9	RUSSCO ENGS	1937 CHEVY	3100	CUSTOM	20	20	140	76.1834
14	1.05025	5	17	ROY PAULSON	HOMEMADE M.C.	385	2/3 WHEEL	10	3	95	29.9929
15	0.91909	3	18	D SCHAEFFER	RENAULT	2431	STOCK	26	8	95	20.5636
16	0.79980	5	10	S & A CORNELL	VW	3100	STOCK	21	14	105	39.3045
17	0.77318	7	22	BRUCE MCDASKIE	VW	2950	STOCK	24	16	244	57.0366
18	0.73023	7	8	BOB STEINFELD	HOMEBUILT SPECI	1800	CUSTOM	21	12	244	60.3913
19	0.72390	2	24	KEN AKMAN	HOMEMADE	550	2/3 WHEEL	10	2	95	17.4056
20	0.69795	6	31	ALAN BURGOS	BRUNN MAIL DEL	1550	COMMERCIAL	25	14	105	54.1582
21	0.67935	6	12	DAVID HORTON	LANER	1050	2/3 WHEEL	11.3	6	140	55.6411
22	0.67335	7	5	JOHN BENNETT	LEKROKAR	3500	STOCK	1	10	105	65.4926
23	0.61295	6	30	LOU MACHILLAN	VW	3300	STOCK	1	16	105	61.6682
24	0.57139	3	20	BILL FALKER	CHEVY	3580	STOCK	20	16	140	55.1284
25	0.55877	5	34	L. LINDELL	PINTO	3650	STOCK	17.5	16	250	56.3730
26	0.51950	5	19	AL HARDAGE	VW	2500	STOCK	1	12	105	60.6349
27	0.51864	4	35	ED SCHANZ	KING MIDGET	2100	CUSTOM	16.2	13	105	40.5861
28	0.51000	6	6	W.L. SCHRUM	MAZDA	3200	STOCK	1	14	250	74.1165
29	0.37557	3	14	BETTY ELLEFS	007 SEDAN 2DR	3600	COMMERCIAL	20.8	20	105	50.3222
30	0.22101	1	26	SAH BOEGES	COMUTA CAR	2200	STOCK	20	8	105	28.5044
31	0.20444	1	36	R SWENSON	EINCLAIR M.C.	430	2/3 WHEEL	4	2	95	30.0154
32	0.15104	1	27	MAE BENSON	VW	2600	STOCK	1	10	95	41.4889
33	0.11634	9	33	ISRAEL TILLIN	HONDA	301	STOCK	1	14	105	487.340
34	0.10251	1	15	CLARENCE ELLERS	ASTEC	1900	CUSTOM	20.5	16	105	61.4526
35	0.00000	0	37	NONE	NONE	300	STOCK	1	1	1	0
36	0.00000	0	3	NONE	NONE	300	STOCK	1	1	1	0
37	0	0	13	JOHN NEWELL	FIAT	2800	STOCK	20	12	105	36.7175

PARTS FOR SALE



FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE

- 1 300 amp 30 volt Aircraft generator  
Self contained blower. Needs brushes.  
96# \$150.00
- 1 New Welding Generator approx. 150 amps  
or more. With link chain coupler.  
\$85.00




Contact : Frank DelMonico 544-6312  
or see items at club meeting.

Also for sale - - Ohmmeter , Ampmeter , Multimeters , Wheatstone bridge , Etc.

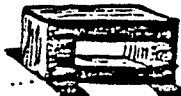
"FOR SALE" "FOR SALE" "FOR SALE" "FOR SALE" "FOR SALE" "FOR SALE"

SOLID BRASS BATTERY CONNECTORS  
older 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

400 AMP. RELAY \$145.00



12 V COIL

Single Pole  
Single Throw

Overall Dimensions  
1 5/8" L., 2 1/4" W.

LIMITED SUPPLY


200 AMP. RELAY




\$15.00  
ONLY A FEW LEFT

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

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.

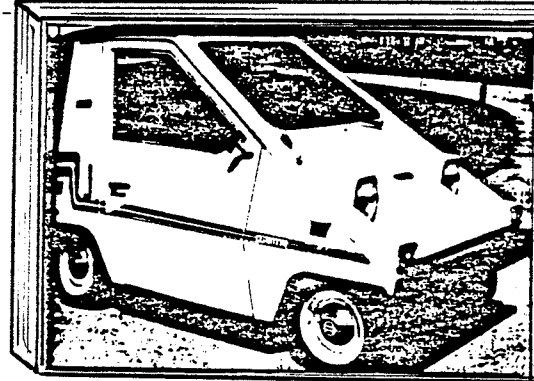


50 ¢ per foot



ALSO  
SINGLE HEAVY  
BATT. CABLE  
+ FINE TUBING

ITEMS AVAILABLE AT CLUB MEETINGS



FOR SALE

1976 CITICAR  
48 VOLT SYSTEM  
UNDER 5000 MILES  
NEW BATTERIES - APRIL '84  
MOTOR REBUILT - AUGUST '84  
VERY GOOD CONDITION  
CALL : GREG - 469-2739

A BATTERY CHARGER CAN BE ANY DC SUPPLY THAT WILL PRODUCE MORE VOLTAGE THAN THE FULLY CHARGED VOLTAGE OF THE BATTERY. THE CURRENT YOU CAN SAFELY USE IS DETERMINED BY THE AMPERE RATING OF THE COMPONENTS IN YOUR CHARGER, i.e. transformer, diodes, wire.

Electric car batteries are best charged at about 30 amps. At approx. 80% charge, current should be reduced to about 10 amps. If batteries bubble profusely or show any sign of temperature rise - they are either over charged or being charged at too high a rate.

The only test for charge is a hydrometer which measures the specific gravity of the acid. It is usually labeled 1250 which is 1.25. This is considered charged. A good hydrometer is a must. Those sold at most auto supply stores for \$1.50 to \$2.50 are almost worthless. Check the float, it must be small and rounded so it does not drag on the side of the tube. Go to a battery shop, check their hydrometer, (the one they use). You may have to have them order you one. The cost is \$8.00 to \$10.00.

By CLARENCE ELLERS  
PLEASE SEE SAFETY IN MAY ISSUE

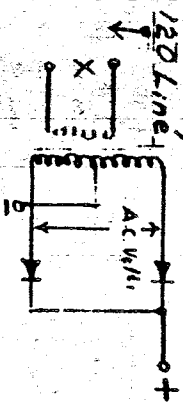
# CHARGING

## COMMON CHARGER CIRCUITS

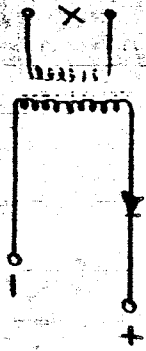
To determine the AC voltage needed, multiply the number of cells by 2.2.

EXAMPLE: 2.2 volts per cell fully charged.  
3 cells per 6 volt battery. 2.2 x 24 = 52.8 volts.

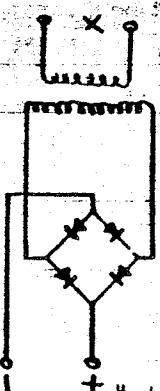
In other words if you have a 48 volt system (8 batteries) and your charger is 52 to 54 volts you can never over charge. HOWEVER NEVER TRUST ANY BATTERY keep watch when charging or use a timer.



Full Wave  
With Center Tap  
D.C. Volts = A.C. Volts



Half Wave AC Volts =  
DC Volts But Time  
Takes Twice Time To Charge



Full Wave Bridge  
D.C. Volts = A.C. Volts  
4 Diodes or Bridge Assm.



Variac (Variable Transformer)  
Use To Vary Charging Current  
Connect X to X on Charger Cir.

Fig. 1

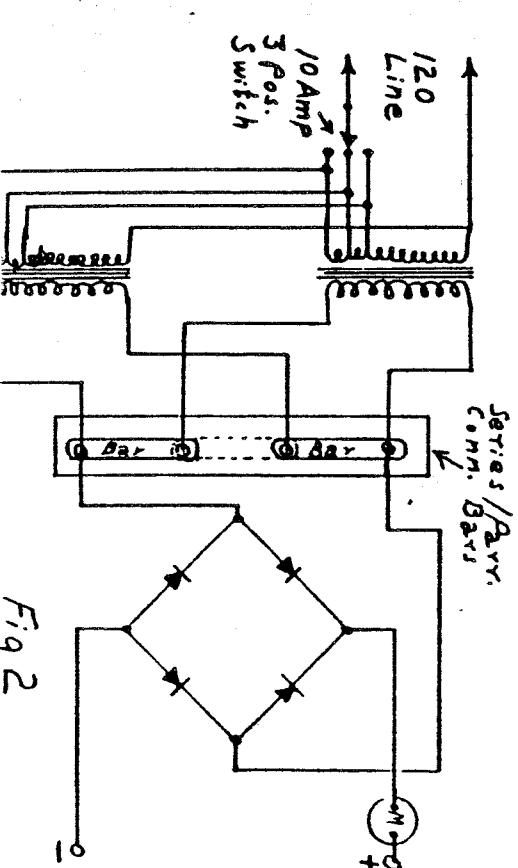
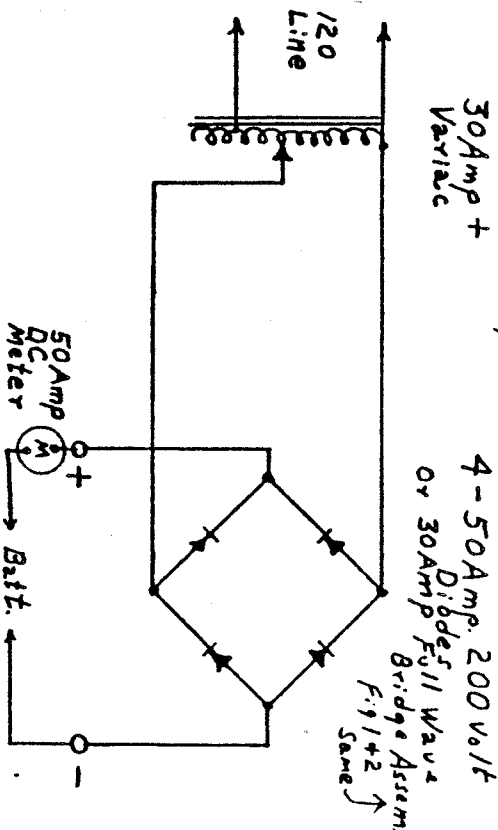


Fig 2