

FVEAA NEWSLETTER
July 1984

MEETING NOTICE

The Fox Valley Electric Auto Association meets on the third Friday of each month in the lower level of the Mid-America Federal Savings Building which is located at 250 E. Roosevelt Rd. in Wheaton, IL. Our meeting this month will be on July 20 at 7:30 p.m. We will have a panel discussion by members who have an operative car. The audience will be asked to submit questions for guidance of their projects. Hoping to see you all there. Those of you who have electric cars and can bring them, please do so again this month.

LETTERS

Letter written by Leonard Fisher to John Stockberger - April, 1984

Hello from Columbus (Ohio): It was Good Friday, 1980 when you, Ken and I first drove the Subaru out of your shop. Well, it was Good Friday, 1984 when I put in a new set of batteries. The original set actually lasted 3 years and 8 months before the range of the car became less than practical (6 miles.) Anyway, I put in a new set of Exide Ev IV's and an Exide Trolling Motor battery. I thought you, Ken, and the club might be interested in the following statistics regarding the operation of the Subaru:

Total cost of first set of batteries - \$627
Total number of miles on first set of batteries - 5235
Battery cost per mile - $\frac{\$627}{5235} = 12\text{¢}$ per mile
1983 cost of electricity \$42.41
1983 total miles driven - 675
Cost per mile for electricity - $\frac{\$42.41}{675} = 6.28\text{¢}$ per mi.
Total 1983 cost for fuel - $\$6.28 + 12.00\text{¢} = 18.28\text{¢}$ per mile

The car appears to be taking to the new batteries just fine, and Ann is learning to drive the Suburban for extended distances. (She's up to a 12-mile round trip.) So I think I'll be able to continue to drive the Subaru to work for awhile.

Bill Schaffer might be interested in knowing that my average cost for electricity here was 7.44¢ per KWH during 1984. The lowest cost per KWH was in Jan. when it was 6.85¢ and the highest was in Nov. when it was 7.84¢. Cost per mile was the lowest in January when it was 4.18¢ and highest in July when it was 9.98¢. (The batteries were probably a bit low on water in July since I put 3½ gal. in at the end of August after we finished handling claims from the Detroit hard t

storm.) Please say "Hello" to Martha, Ken, Everett, Ahern and the gang.

Sincerely, Len Fisher



Fox valley electric auto association inc.
624 Pershing St. Wheaton, Il.
60187

M.C.P.

by F. Delmonico

A system whereby only one electric device is used for both traction and regeneration.

A shunt, or permanent magnet motor, has what is called a "no load speed" which is the maximum speed the motor will run for a given applied voltage. If you attach another motor to the shaft of the shunt or P.M. motor and operate it at a higher R.P.M. than the "no load speed" of the shunt or P.M. motor, it then becomes a generator.

A shunt motor of approximately 2800 R.P.M. "no load speed" when attached to a 3600 R.P.M., I.C.E. (Internal Combustion Engine) and run at anything over 2800 R.P.M., will generate. The same thing applies when a shunt motor is used in a vehicle and it is going down a hill and is making the motor run faster than its "no load speed" the motor is now acting as a generator, not only generating, but also slowing the vehicle, or at least not letting the vehicle, go any faster.

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If we couple a 3600 R.P.M., I.C.E. to a shunt motor, of say 2800 R.P.M., and we then put these two units in a vehicle coupled to the wheels with an I.V.T. (Infinitely Variable Transmission) we have a "Hybrid" vehicle. As stated previously, with the I.V.T. disengaged, the power unit is acting as a generator (above 2800 R.P.M.) now as we engage the I.V.T. the power unit will slow down, somewhat, depending on the rate of acceleration; if we accelerate slowly, and the R.P.M.'s do not drop below 2800, the power unit is still generating and also moving the vehicle. If the acceleration rate is increased to the point where it pulls the power unit R.P.M.'s below 2800 (approximately 2000 R.P.M.), then the motor generator is now pulling current from the battery pack so both the I.C.E. and the motor generator are producing power and they are added together. If the shunt motor produces 10 H.P. at 2500 and the I.C.E., 15 H.P., we then have 25 H.P. available, if we change the I.V.T. rapidly in order to accelerate faster, the power unit R.P.M. is reduced to about 1500 R.P.M. The shunt motor draws more current and produces more H.P., about 20 H.P. and the I.C.E. produces 15 H.P., we now have 35 H.P. available. When the desired vehicle speed is reached and the power unit R.P.M. is back up, above 2800 R.P.M., the I.C.E. is now driving the vehicle and also generating to charge the battery pack.

I.C.E.

12.2 H.P. @ 3600 R.P.M. 18 FT. LBS. Torque

Shunt Motor:

6 H.P. @ 2400 R.P.M. 13 FT LBS. Torque

AS I.C.E. & Shunt motor R.P.M.s ARE Pulled Down, AS UNDER HARD ACCELERATION THE ELECTRIC MOTOR TORQUE RISES I.E.

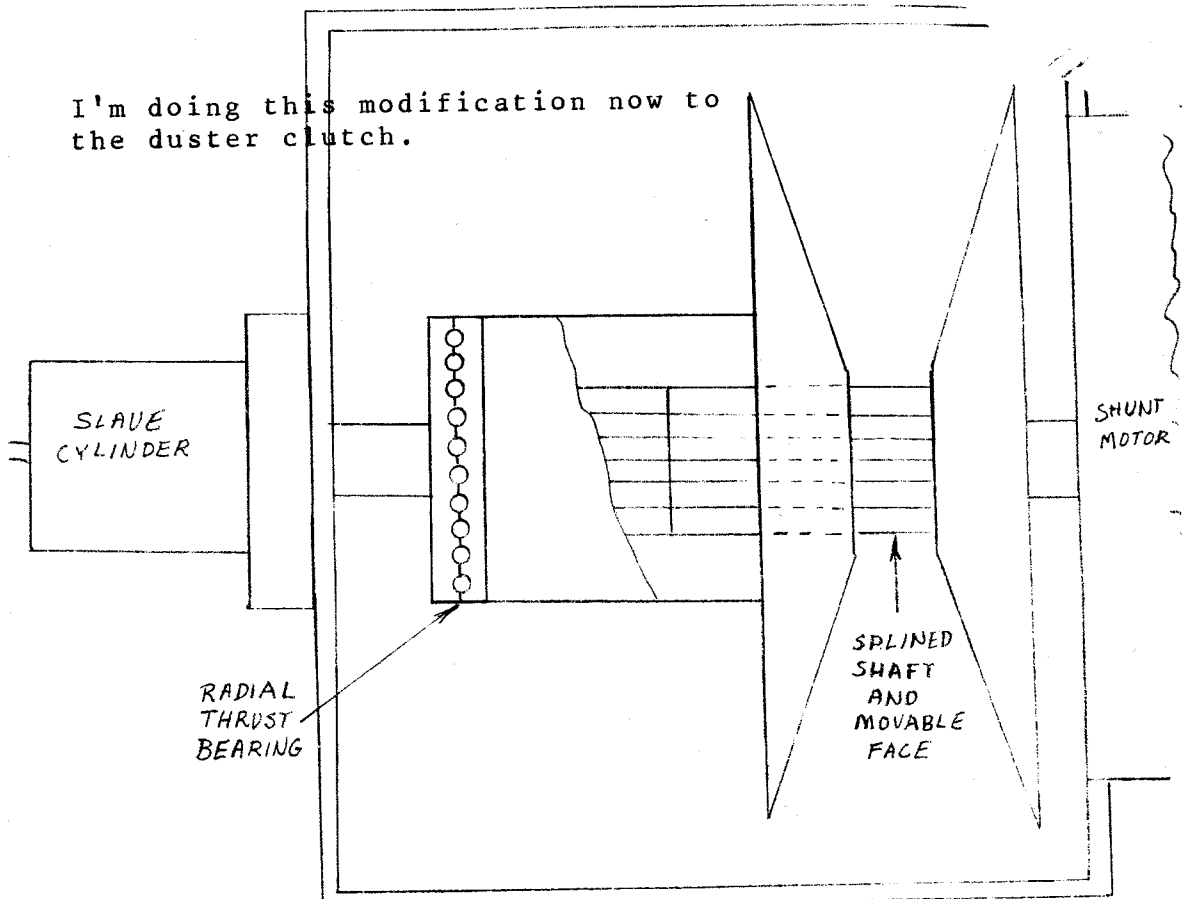
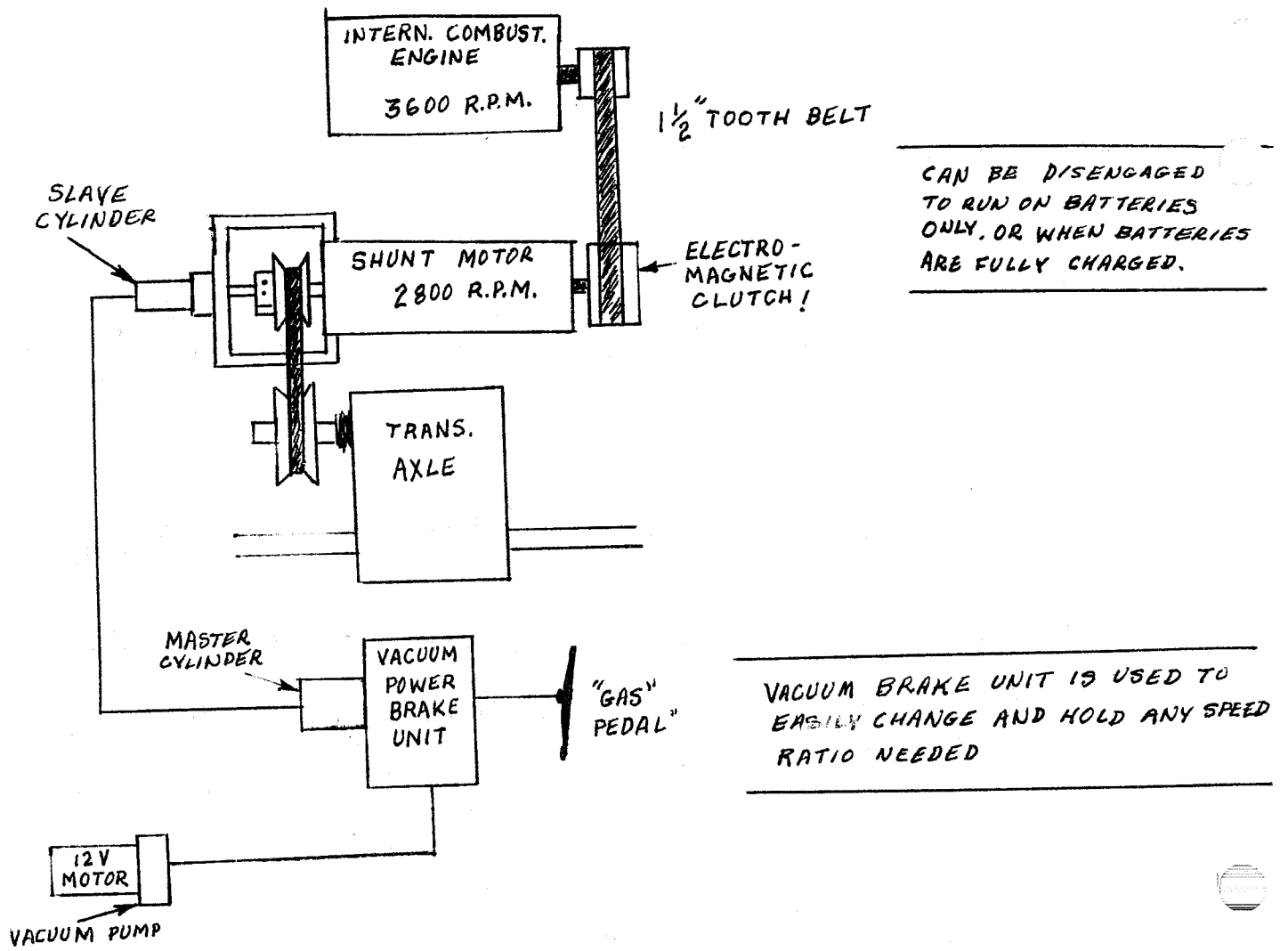
AS MUCH AS 9 TIME ITS RATING AT THE RATED H.P. (13 AT 2400 RPM)

$9 \times 13 = 117$ LBS.FT. AND H.P.

INCREASES 4 TIMES (24 HP)

SO YOU CAN SEE THAT EVEN THO WE ONLY HAVE $12.2^{HP} + 6^{HP} = 18.2^{HP}$ UNDER NORMAL CONDITIONS, WE HAVE AS MUCH AS 125 LBS.FT. AND 30-35 H.P. WHEN NEEDED.

ALSO YOU CAN SEE THAT ANYTIME WE'RE NOT USING THIS MUCH AND I.C.E. IS AT 3600 RPM AND OVERDRIVING THE SHUNT MOTOR WE'RE DRIVING THE VEHICLE DOWN THE ROAD AND ALSO CHARGING THE BATTERY



FOR SALE

MECHANICS ILLUS. Electric Car



Restored 7 beefed-up '71 Volkswagen frame
New front axle assembly (retorqued to designer's specs.)
Rebuilt rear assembly (retorqued to designer's specs.)
New brake shoes rebuilt wheels 7 master cylinders
New tires mounted on 1½ offset wheels adapted to VW drums
All battery racks professionally welded and mounted
Body foam covered with 10-oz. plus 6 oz. fiberglass cloth
No electrical units
Stopped building due to retirement. Must sell to best offer
John Woodville 11711 S. Carolyn Ln.
Alsip, IL Phone (312) 385-2993

FOR SALE '64 Renault Dauphine fully-restored car - \$1500 - Roger Sutfin. Call 858-4788 or 858-2189 and leave message.

FOR SALE '81 Fiat Strada four-door hatchback with sun roof - Electric Leopard - blue - Model 96A - 3000 miles. Runs perfectly. Cost \$14,000 new - asking \$3400. By John Kennedy. Call 687-6398

FOR SALE '75 Ford Pinto - two-door - Engine and the exhaust and fuel systems have been removed. Would like to get \$500. By Richard Cole - 682-9317 or 665-8045

TOWING If you have any towing needs or problems, call Dana Mock (312) 759-8033

FOR SALE I have a 1975 Citi-Car SU-48 with 5148 miles. The batteries and electric contact switches were replaced last year, so I believe it has a lot of use left in it. Plastic side windows are opaque from age and the body has one crack in the rear fender. Asking price is \$2500. Ken Dunn 5476 S. Woodlawn, Chicago 60615 Phone (312) 241-6616

FOR SALE "I have a 1973 Subaru for sale. It has been converted to electric and data on it is as follows: 1973 GL1400 Subaru Coupe, 86,258 miles. Converted, using a 2LM77 GE motor/generator - Eight Gould 220 6 volt batteries. On board charger. Voltage switching speed control thru high amperage solenoid relays. Control and charger are home-made. Body is in good condition. Interior is in good condition except for one seat cushion. Six wheels and five tires. Spare clutch plate. Complete circuit diagrams, drawings of mechanical conversion parts, and a Subaru Manual. Tow-bar included. I am asking \$1500. Someone capable of arranging a solid state control for the vehicle could greatly extend its capability". Paul L. Hatleberg - 2027 Meadow Dr. Beloit, WI 53511 Phone (608) 362-6752

ITEMS AVAILABLE AT THE CLUB

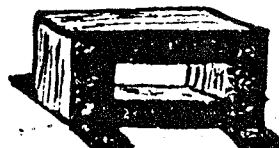
"FOR SALE" "FOR SALE" "FOR SALE" "FOR SALE" "FOR SALE" "FOR SALE"

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.)



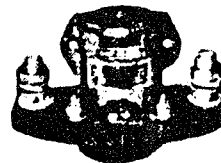
\$5.00

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

NEW ITEM
LIMITED
SUPPLY

400 AMP. RELAY



\$45.00

12 V COIL

Single Stage

Overall Dimension:
5 1/4" L., 2 1/2" W.
Shipping Weight

ITEMS AVAILABLE AT CLUB MEETINGS