

NOVEMBER 1985

MEETING NOTICE

THE NEXT MEETING WILL BE FRIDAY NOV. 15th, at MID AMERICA FEDERAL SAVINGS 250 E. ROOSEVELT RD. WHEATON, ILLINOIS. - TIME - 7:30 P.M.

GUEST SPEAKER

MR. VLADIMIR VANA (our club treasurer) WILL GIVE A SHORT TALK ABOUT THE CALIFORNIA E.V. RALLY HE ATTENDED IN LATE SEPT. OF THIS YEAR. VANA ALSO HAS A FEW PICTURES TO SHOW.

DUES ARE DUE

A MEMBERSHIP RENEWAL APPLICATION BLANK IS INCLUDED.

ELECTIONS

WE MUST VOTE ON NEW OFFICERS AT THIS MEETING.

MINUTES

MINUTES OF THE OCTOBER MEETING ARE INCLUDED.

PRESIDENTS NOTES

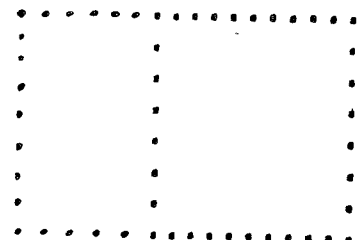
THE CLUB HAS ACQUIRED A NUMBER OF GROUP 1, 36 MONTH, 6 VOLT BATTERIES. A SAMPLE BATTERY WILL BE AT THE MEETING. - SOME BRAKE WORK STILL HAS TO BE DONE ON THE "RAFFLE CAR". - WE NEED SOME NEW IDEAS FOR GUEST SPEAKERS OR MEETING SUBJECTS.

NEWSLETTER ITEMS

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 IN ORDER THAT IT BE PUBLISHED IN THAT MEETINGS NEWSLETTER. SEND TO: John Emde F.V.E.A.A. Editor, 6542 Fairmount Ave. , Downers Grove, Ill. 60516



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



FIRST CLASS

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MINUTES OF MEETING...OCTOBER 10/18/85

The meeting was called to order by acting President Dana Mock at 7:45 P.M.. Vladimir Vana gave the following Treasurer report.

August '85 Balance.....\$ 606.31

Income

Memberships.....	\$17.50		
Interest Sept....	2.59		
Interest Oct.....	2.55	22.64	Total checking account balance 628.95
			Total savings account balance <u>722.82</u>
			Total available funds..... 1451.77

(no checkbook was present so we didn't spend any of the clubs' money this time)

The Treasurers report was approved as reported. Minutes of last meeting were not available and were not reported, but some tidbits were..a guest and possible new member, Bill Klages, 747 Montgomery Rd., Montgomery, Ill. 60538, has a 1979 Vanguard, drove about 1000 miles last summer...Dick Ness had a triple bypass.. He's out of the hospital now and back home, recovering. We all wish him a speedy return to health. Naturally his activities will be a little subdued so he would like to sell a 400 Amp. generator...Call for a price.(End of last meeting)..... John Emde reported 2 new members were added to our roster in October, also that dues for coming year are payable in November....Our "Raffle Car" is in Dana's driveway still awaiting a brake job. Also Dana will contact the State Police to try to get a Serial number for the car and get a title and plates.. John Stockberger made a motion that the club give a placque to Mid America Fed. for the hospitality they have given us over the years..A suggestion was made that John Ahern present the placque. Dana will have his wife look into having one made up...Paul Harris brought up a fund raising project. It would consist of a coupon book for 86 restaurants in our area that have a coupon for value of from \$5.00 up to a "Two for One Deal" dinner or lunch etc. The book would sell for \$5.00 (which you would make up by just going out to one or two of the restaurants), and the club would make as much as \$3.25 per book and it would be a great fund raiser. These books could be used as XMAS presents or Birthday gifts..etc...Our program consisted of a very informational talk by our resident expert on C.V.T..... Joe Seliber...Welcome back Joe...The meeting was adjourned at 9:00 P.M.. Respectively submitted,

Paul P. Harris, Acting Sec'ty.

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.



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.

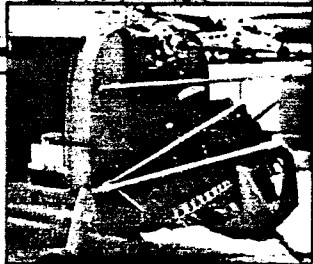
MAKE CHECKS PAYABLE TO: **FOX VALLEY EAA**

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



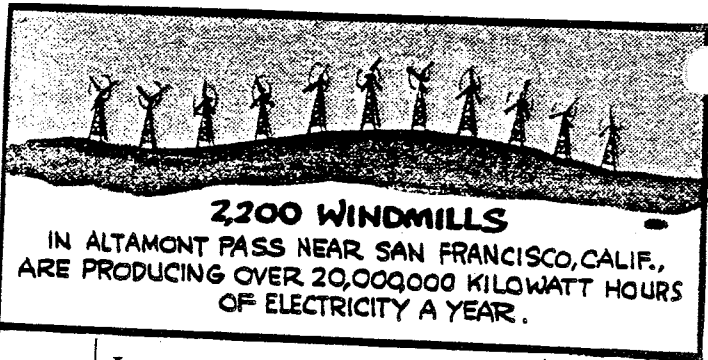
Silent chopper

How about a helicopter that makes virtually no noise, produces no heat to attract heat-seeking missiles and has none of the complex engine parts found in a conventional chopper?



Four electric motors drive rotor on this modified Sikorsky S-52.

Give up? It's an electric-powered copter—the world's first—under development by Orlando Helicopter Airways of Orlando, Fla. Due for flight testing soon, it will use lithium hydroxide batteries that are quickly recharged by merely replacing their lithium plates.



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

Is more better?

Regarding windmills: If two or three blades are good, why wouldn't four, six, or more blades be even better? And why can't the great amounts of energy present in high winds be captured?

Charles R. Harrison, Sikeston, Mo.

Large prototype windmills have used more than three blades with good results. However, if too many blades are used, each blade can find itself in the wake of the preceding blade. The resulting turbulence would reduce efficiency. Wind machines that can handle high wind speeds have been built, but the greatly increased cost of building a unit to survive those conditions usually dictates a lower design speed. It's a trade-off.

Why you're driven to buy that special car

The 1986 model year boasts of its aerodynamics and high-tech touches. There are subcompacts, sports cars, luxury cars and minivans.

With so many options, choosing a car can be perplexing. Take a tip from market experts, who look at more than your wallet in deciding which car fits you best. They look at your sex, age and how you feel about cars. According to J.D. Power & Associates, a Westlake Village, Calif., marketing analysis firm, car buyers can be divided into six psychographic groups.

There's always some crossover, but these six types represent a sound generalization of the car-buying public.

Auto-philes

Characteristics: They're enthusiastic about driving and like to service their own cars. Of all buyers, auto-philes are the lowest income group, but spend a greater percentage of their income on cars. Auto-philes are 24 percent of the total population. Median age: 36. Median income: \$20,000. Sex: 72 percent male, 28 percent female.

Car type: Sports and sporty cars, such as the Pontiac Fiero.

Necessity drivers

Characteristics: They hate cars. In fact, necessity drivers would just as soon do without a car. This group is the best educated, and is 13 percent of the population. Median age: 43. Median income: \$27,800. Sex: 47 percent male, 53 percent female.

Car type: Low-end cars, such as the Chevette.

Auto-phobes

Characteristics: They prefer to let someone else do the driving. Safety is important, and they prefer large cars. Auto-phobes are 12 percent of the population; most are women. Median age: 44. Median income: \$29,200. Sex: 15 percent male, 85 percent female.

Car type: Basic large cars, such as the Chevrolet Caprice.

Auto-cynics

Characteristics: This group thinks driving is fun. Sporty looks are important, but auto-cynics don't admit to liking anything. They are

independent types, the youngest group of car buyers, and 14 percent of the population. Median age: 32. Median income: \$26,800. Sex: 57 percent male, 43 percent female.

Car type: Small, middle and sporty cars, such as the Ford Mustang.

Comfort-seekers

Characteristics: They like cars, particularly comfortable, well-equipped cars. They comprise 17 percent of the population. Median age: 40. Median income: \$28,700. Sex: 36 percent male, 64 percent female.

Car type: Luxury cars; Lincolns and Cadillacs are favorites.

Sensible-centrists

Characteristics: Fuel economy and price are important. They like cars, but look for functional, economical models. They're the oldest group and 20 percent of the population. Median age: 49. Median income: \$21,800. Sex: 39 percent male, 61 percent female.

Car type: Small and middle cars, such as the Toyota Corolla and Ford Tempo.

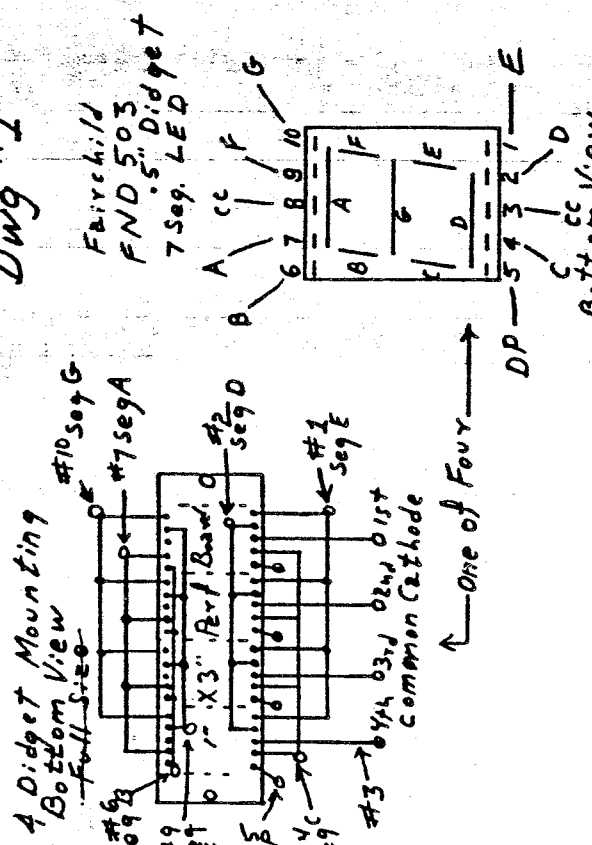
Digital Multimeters

MODERNIZE YOUR CAR

Almost anyone can build this simple meter. On the .2 scale with a 500amp. 50 MV. shunt the last 3 digits will read direct. I now recomend I.P. 5082-7633 Green digits, Green is much brighter in sun. Smoke colored plexiglas makes a good black out dash, very spectacular when lit up.

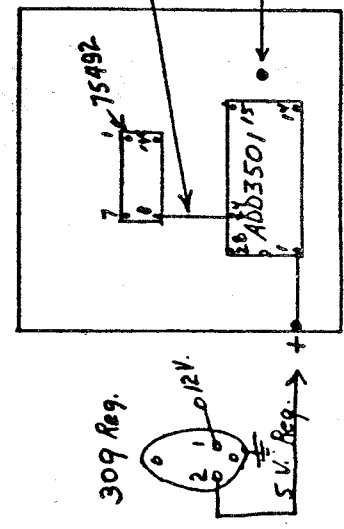
CLARENCE

DWG #1



Layout for Panel Meter
3" X 3" Perforboard

Use Figure 5
NAT'l Note



Courtesy
National Semiconductor

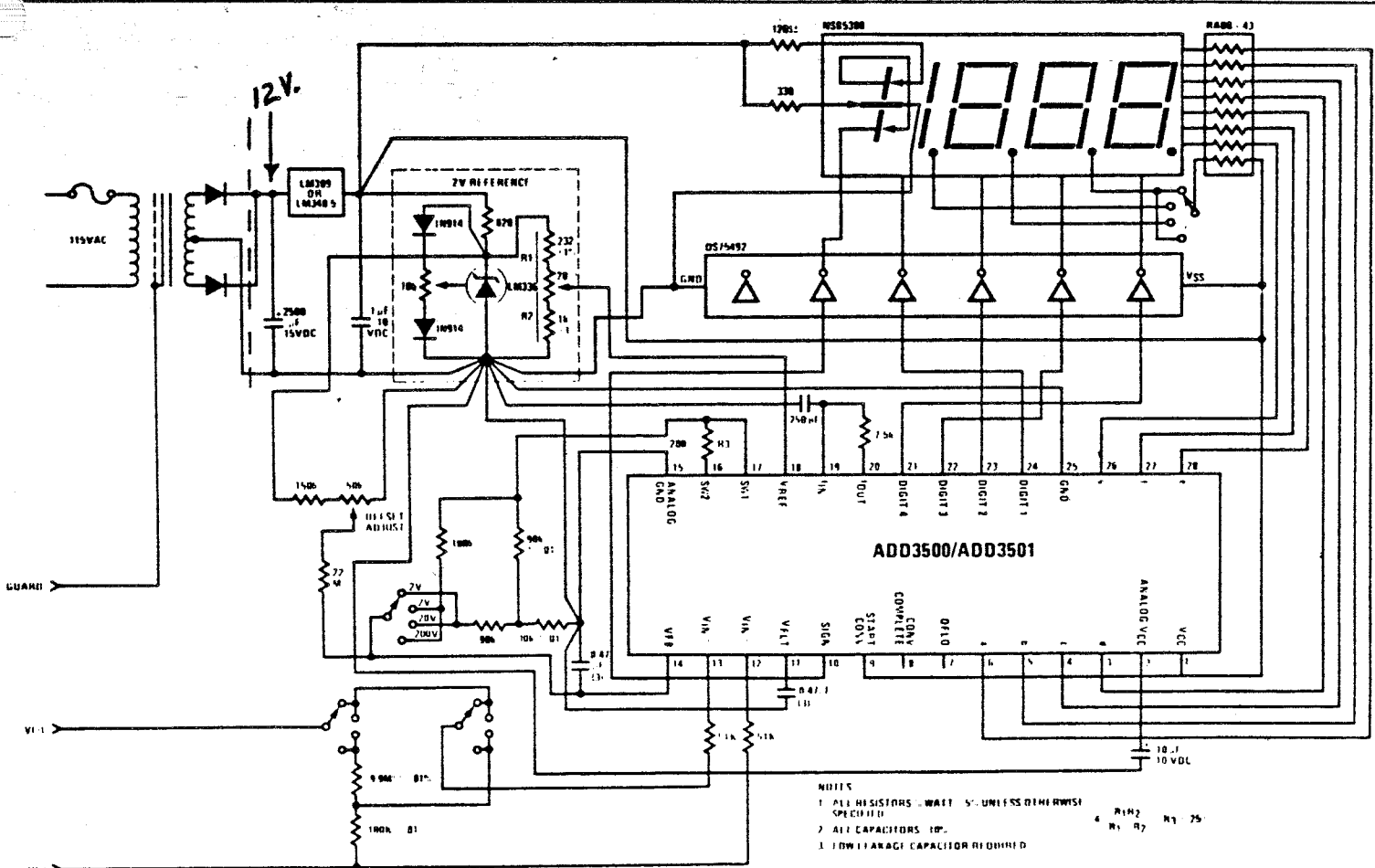


Figure 6 3 1/2 Digit DVM Four Decade .0.2V .2V .20V and .200V Full Scale



WORLD DISTANCE RECORD HOLDER BRUCE MCCASKIE'S 20 AMP. FIELD CONTROLLER USED ON COMPOUND (CM77) FULL FIELD SHOULD BE USED ON ALL SHUNT MOTORS

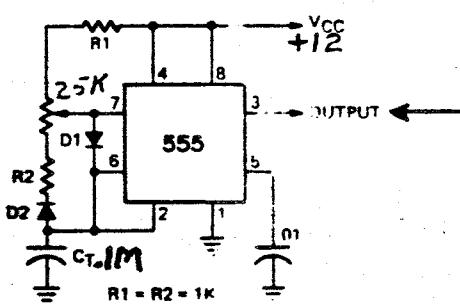
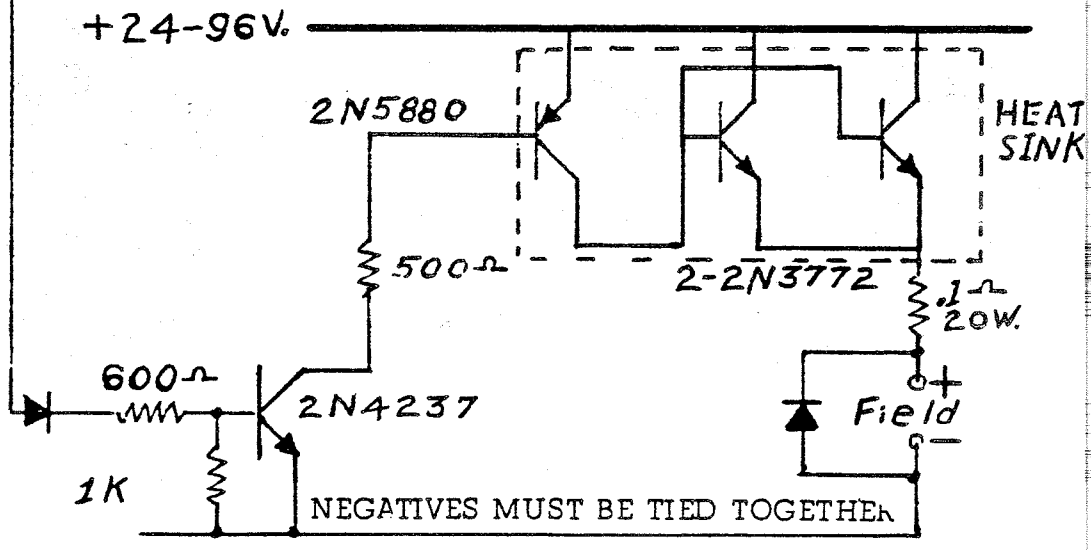


FIG. 17—ASTABLE MULTIVIBRATOR with duty cycle variable from 0 to 100% and frequency constant.

In some applications, we may need to vary the duty cycle of a multivibrator from about 0 to 100% while holding the frequency constant. In this case, replace R_{T-} and R_{T+} with a single linear-pot as in Fig. 17. Resistors R1 and R2—approximately 1,000 ohms each—are connected in series with the pot. R1 limits the maximum current through the discharge transistor. Resistor R2 establishes a minimum value for R_{T+} and to compensate for the addition of R1 to the network.



POLITICS

RICHARD MILNSEN

Electric Rebels

Armed with peach pits and windmills, a new group of entrepreneurs is challenging the electric utilities' monopoly on power generation—and succeeding.

AMERICA'S UTILITIES are on the run. Since 1973 electricity rates have tripled. At least 180 proposed power plants—more than the combined electric generating capacity of Texas and California—have been cancelled. A dozen power plants teeter near bankruptcy. Problems promise to accelerate as consumers face rate shocks when nuclear power plants join the utility grid.

But America still requires reliable, reasonably priced power. To satisfy this need, a new generation of electricity entrepreneurs is emerging, bringing with them innovative technologies and aggressive marketing practices that are beginning to provide alter-

natives to the utility monopolies' power. These entrepreneurs—who use cogenerators, burn wastes, and harness the sun, wind, falling water, and geothermal steam—are banding together to become one of the nation's fastest-growing industries. In California, where this phenomenon has been most rapid, independents supplied only 100 megawatts of the state's electricity in January 1982, enough to power 50,000 homes. Three years later they had signed contracts with utilities to supply more than 6,000 MW of electric power—almost the entire potential output of California's six nuclear reactors combined. According to utility company records, by 1988 these electricity

entrepreneurs will double their capacity again to supply 13,000 MW—35 percent of the state's electricity demand.

The hottest new item in industrial energy is cogeneration, an ingenious system that simultaneously produces heat and electricity. The final generation may even double the power a business receives for each dollar invested. A utility plant producing 100 megawatts of electricity, for example, can be 32 percent efficient; a cogenerator using the same amount of fuel can be 80-percent efficient.

With utility rates soaring, cogeneration is becoming increasingly popular among petroleum refiners, wood and food processors, steel and chemical producers, cement mixers, and other companies that need both heat and electric power. "There is more business out there than you can possibly imagine," says one cogeneration promoter. By late 1984 cogeneration produced more than 15,000 MW of power in the United States, matching the output of 15 large nuclear reactors. Another 200 projects with a total capacity of 6,000 MW were under construction. Analysts expect cogeneration to be a \$63-billion industry by century's end, supplying 15 percent of the nation's total electricity, more than is now produced by nuclear plants.



Space-Age Fuel Cell Provides Power for San Francisco Office Building

A device that provided American astronauts with electricity in space is being used by PG&E to provide electricity and hot water for a large state office building in San Francisco.

The device is called a fuel cell and PG&E is testing one to get a better idea of cost and efficiency on earth.

PG&E has installed a 40-kilowatt package plant powered by fuel cells in the six-story office building at 350 McAllister Street.

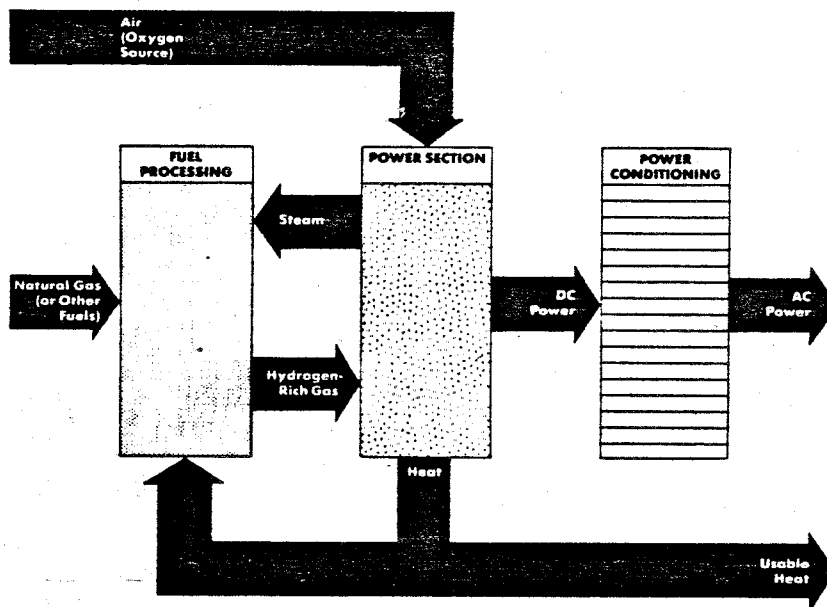
The building houses the State Supreme Court and offices of several agencies, including the Franchise Tax Board, Board of Equalization and The California Public Utilities Commission.

In a residential setting, this unit would be able to meet the average needs of about 40 typical family homes.

The fuel cell package plant weighs about 8,000 pounds and is nine feet long, about five feet wide and stands six and a half feet high.

The heart of the plant consists of stacks of fuel cells. Each uses an electrochemical process to combine hydrogen with oxygen to produce cogenerated electricity, heat and steam, as shown in the diagram on this page.

Direct current electricity from the fuel cells is converted



This diagram shows how a fuel cell generates power.

to alternating current for customer use. The heat from the process is captured and used for water heating in the building. And the steam is piped to another part of the small plant where it converts natural gas to hydrogen-rich gas needed to sustain a reaction in the fuel cells.

The fuel cell plant operates quietly and emits no pollutants. It is also highly efficient in extracting usable energy from fuel, attaining cogeneration efficiencies of 80 percent compared with about 35 percent in large conventional power plants.

Installation and operation of the fuel cell package is sponsored by 30 participating com-

panies. Funds for research and development for the fuel cell power plant program come from the Gas Research Institute and the U.S. Department of Energy.

When the research is completed and large scale production can begin, the cost of energy generated by fuel cells will be competitive with other methods of generating electricity currently being used in PG&E's service territory.

The state building is one of 45 field sites throughout the United States, Mexico and Japan where the fuel cell plant is being tested.

Shopping for an auto alarm?

Here's what to look for.

Protecting your car is too important to just buy the first alarm you see. You've got to shop.

Shop for price and shop for protection. And shop for a dealer who knows what he is doing. These points should help you know what to look for.

Take this page with you the next time you buy an alarm.

Automatic Reset Timer

If your alarm is set off, the automatic reset timer shuts off the alarm after 1-2 minutes and resets it.

Current Sensor

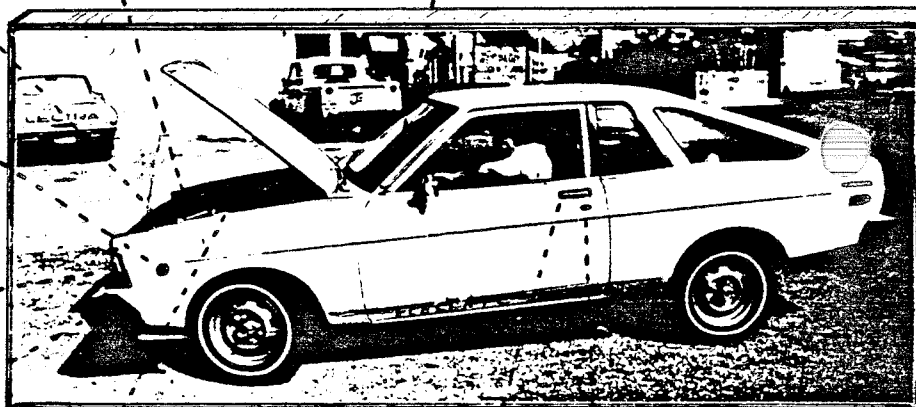
Detects any current flow from the battery. Sets off alarm if any light or accessory is used.

Underdash Emergency Panic Switch

Keeps you and your family safe. Lets you trigger loud siren and flashing lights whenever you are threatened.

High Security Armored Lock With Ignition Cut-off

Sets alarm and deadbolts hood to protect engine parts and alarm. Cuts power to starter. Stops thief by showing him that the car is protected. Lock should be installed in such a way that it is protected. Should have a mercury switch to protect against tampering and act as an outside emergency panic switch.



Flashing Lights

Headlights flash whenever someone hits or tampers with your car. Identifies location of car and scares off the offender.

Motion Detector With Cut-off Switch

Sets off alarm whenever car is bumped or jacked up. Should be set with the right sensitivity for your needs. Make sure it comes with a cut-off switch for disarming alarm on windy nights. Otherwise you'll have to disarm the entire system or listen to false alarms.

Ultra Loud Siren

Loud mechanical siren calls for help and demoralizes the thief. Should be as loud as possible and should be rugged enough to last a long time in all kinds of weather.

Instant Protection

Demand instant protection, an alarm that goes off *immediately* after the car is tampered with. Avoid systems that have a delay. They give the thief time to work on stealing your car or to steal things from your car. Alarm should stop the thief at once before he can do any damage.

Shocker (Optional)

Detonates alarm by sound and vibration. Protects glass, wheel covers, and body parts. This inexpensive feature can pay for itself in no time.

An alarm contains intricate and mechanical parts. So insist on a good warranty to back them up. The best warranty is a lifetime warranty on all parts and labor. It should be transferable to your next car, if you decide to re-install your alarm on that car.



GUARDIAN