
FVEAA NEWSLETTER

Fox Valley Electric Auto Association

An Independent Not-For-Profit Corporation associated with the National Electric Auto Association



April 2005

Meeting Location: Triton College, River Grove, Illinois
Industrial Careers Building, (East Campus) Room 108

Next Meeting: Friday, April 15, 2005
8:00 PM

MEMBERSHIP INFORMATION

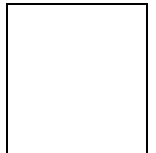
Any person interested in electric cars and alternative energy systems is welcome to join the Fox Valley Electric Auto Association. The cost for a full year's dues is \$20.00 which entitles members to receive our monthly Newsletter that contains useful information about electric car conversions, construction, news, policies and events. These member dues are prorated on a monthly basis for NEW members (not renewing members) joining after the beginning of the club's fiscal year.

Membership is not required to attend our monthly meetings.

Annual Member Dues of \$20.00 for 2005 are due and payable prior to January 2005.

\$5.00 discount if Newsletter is sent in electronic format only.

FVEAA Newsletter Publishing Office
12305 S. New Avenue
Suite N
Lemont, Illinois 60439



REMINDER:

MEETING DAY IS TAX DAY...

Mail To:

...The "REAL" April Fool's Day

1. Approval of March 2005 Meeting Minutes, as posted in this Newsletter
2. Treasurer's Report
3. Update of Frank Del Monico's electric vehicle
4. Alternative Fuel Vehicle event update
5. Reports from Alternative Fuel Vehicle Event committees
 - a. ~~Student Research Project Guidance Counselor Committee~~ - *Inactive*
 - b. ~~Technical Safety Inspector Assistance Committee~~ - *Inactive*
 - c. Event Participant Invitational Committee
6. New Business

PREZ-SEZ

Editorial by: Kevin Zak

I need to say how impressed I was at our last meeting. When I called for the formation of the various committees to assist with the Alternative Fuel Vehicle event – I was afraid I would need to invoke one of my presidential powers ... and appoint people to the committees. I was pleased to see such a strong level of volunteerism from our club members.

The committees formed are:

- **The Student Research Project Guidance Counselor Committee**, which will act as student guidance counselors prior to and during the day of the event. This committee is responsible for assisting the students in developing a testing program to allow the students to evaluate the various Alternative Fuel Vehicles donated by several automobile manufacturers. This committee will be active in the fall of 2005 thru the day of the event, involving the students and staff of the Joliet Township High Schools.
- **The Technical Safety Inspector Assistance Committee**, which will work with the vehicle safety inspectors at the race track on the day of the event. This committee is responsible for sharing their technical expertise to assist the Tech Inspectors in safely conducting safety inspections of all participating vehicles. This committee will have final authority in allowing or refusing individual vehicle participation in the event for safety related issues. All vehicles must meet or exceed safety guidelines as itemized in the 2006 NHRA Rule Book. This committee is active only during the day of the event.
- **The Event Participation Invitational Committee**, which will work to determine what types of Alternative Fuel Vehicles, which vehicle owners, vehicle teams, vendors, sponsors, advertisers, schools and government officials to invite to participate in the event at various levels. Depending upon the level of participation from the Joliet Township High Schools, this committee may work to include the students and staff in these efforts. This committee is active now, researching the previously mentioned entities, and will continue to work through the day of the event.

Staffing the three committees is an ongoing effort. Anyone interested in participating in any of the committees is welcome to join at any time. The more bodies involved, the easier it will be on everyone.

Meeting Minutes from February 18, 2004

as recorded by: Tim Moore

After calling the meeting to order President Kevin Zak asked for the approval of the minutes as well as the approval of the treasurer's report (\$3901.74 in checking and \$3459.85 in savings) both were approved.

Although Frank Delmonico's car had drawn no interest from the members, Kevin hoped he might still be able to help out the Delmonico family by putting the car on the list server.

The alternative fuel event at Joliet Speedway dominated the meeting, and rightly so as it has drawn the attention of huge names in the business, such as BMW, Toyota, Science and Industry Museum, to name just a few.

Kevin Zak laid out a game plan and a needs list for the event. One hold up is the cost of the Joliet high school teachers extracurricular work for the event, but this no longer is a sticking point as the race track may want to go on with the event with or without the students .

Men are needed to work with the track safety inspectors. We also need members to pick what type of vehicles to invite to the event and what funds the participants get for travel expenses.

Volunteers for the student research project were Tim Moore and Peter Hartel.

Fred Kitch and Dave Aarvold volunteered for the participant invitation committee.

Kevin Zak plans to invited the NEDRA National Electric Drag Racing Association as well as request their sponsorship.

Dave Aarvold and George Gladic also volunteered to research solar energy affiliation.

Ken Simmermon will be contacting Illinois Propane and Natural Gas Vehicle Association.

Rob Glowacki volunteered to contact past members, as well as to develop biographies on present members to both draw people back, and also get to know our members more fully.

We are still in need of someone to work with our website to advertise the event.

As the event has tentatively been scheduled for May 6th or May 13th of 2006 there is a great deal of work to do, but Kevin Zak has started the process in grand scheme with a very professional packet, and has secured an attorney assigned by the track to write a grant for the event.

Kevin also highlighted a website and its novelty car kits Fuelcellstore.com

We had three guest in attendance: Timothy Black, Ray Musterman, and John Attig. Members introduced themselves to the guests.

Open-hood Alert

There is one driving hazard that has never received adequate coverage in any publication! This shocking omission has at least once been alleged to be the result of concentrated suppressive efforts of pressure groups within the automotive body repair industry - the one industry that most stands to profit from any increased incidence of collision damage incidents. This same industry has been alleged to be the force behind lobbying efforts aimed at encouraging so-called “*go straight on red*” legislation.

The hazard that we are not only daring to report here, but actually daring to try to prevent, is the danger of driving with the car’s hood open. This rolling death threat not only greatly diminishes a driver’s ability to see ahead, it also provides an opportunity for death by electrocution in the event of extremely saggy overhead wires.

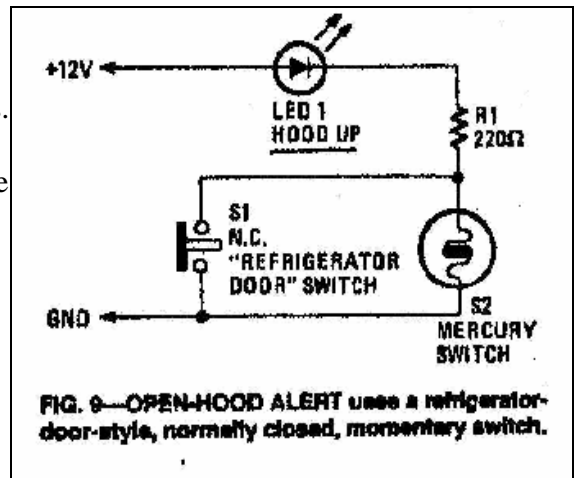
And there’s the potential damage to garage doors, plus potential for damage to your engine while it’s denied the protective covering of its hood.

We went through a great deal of trouble in going through several designs for an effective open-hood alert. Photoelectric techniques were tried, then rejected since the angle of a hood mounted reflector couldn’t be precisely predicted at every highway speed and road condition. Radar transmitters alongside, but shielded from, radar detectors proved effective (an open hood bounced the signal back and triggered the detector), but there are licensing difficulties.

We finally arrived at the fail-safe circuit shown in the schematic (fig 9). Switch S1 is a refrigerator-door style normally closed (open when held in) momentary switch, which is mounted in the engine compartment in such a way that unless the hood is closed securely, the switch is on. Switch S2 is a mercury type mounted on the hood itself in such a way that it’s off when the hood is down, but when the hood is up it signals “tilt”.

If the hood should swing open while you’re driving, the switches will close, lighting the *Hood Open* LED.

Due to the severe consequences of this potentially dangerous occurrence, we strongly recommend that you check this LED often while driving.

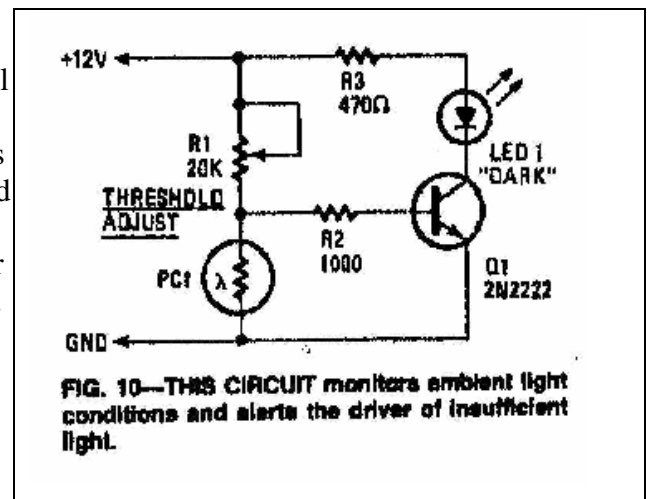


Ambient Illumination Insufficiency Alert

You’ve been driving since dawn, about 17 hours straight. Nightfall just kind of snuck up on you - you’re a little tired, anyway - and before you know it you’re driving in the dark with no headlights. Or you’ve pulled off the bright, sunlit street and into a dark parking garage or tunnel - and in the confusion, you forgot to check your headlights.

Either way, your visibility is greatly impaired. But this handy little circuit (fig 10) monitors the ambient light level and alerts you to conditions of ambient illumination insufficiency by lighting a dark LED (not to be confused with the D.E.D., or Dark Emitting Diode, introduced by National Semi last April).

Light sensitive resistor (or photocell) PC1 is placed where it can sample the ambient illumination. Potentiometer R1 adjusts the light level that triggers the dark response. Resistor R2 limits current to the base of Q1, and R3 limits current through its collector and the LED.



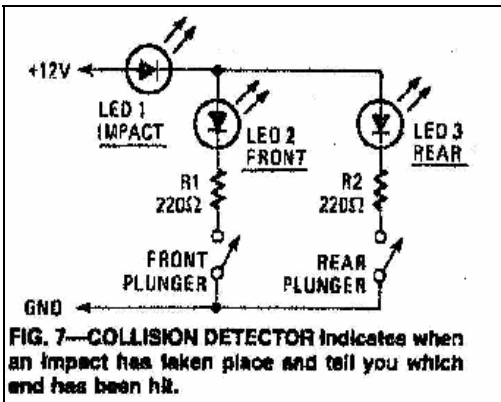
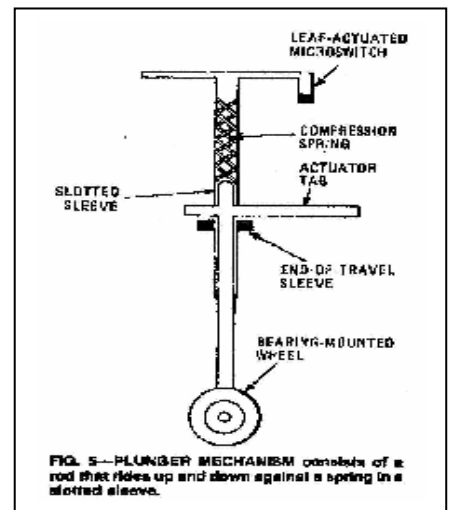
Collision Detector

The plunger mechanism (fig 5) is the crucial switch element in a collision detector.

You know the problem. You need to go downtown and the only available parking is parallel parking. Well, everybody knows the only practical approach to parallel parking is the touch system. But let your brakes get just a little bit soft or your acceleration just a little bit peppy and before you know it, your car is an instrument of sculpture, providing design refinements that Detroit never anticipated.

Or your changing lanes on the freeway, only some idiot isn't going fast enough ahead of you. You know nobody can hear horns at freeway speeds, so you give him a little nudge to get his attention.

Or you park the car on a hill in neutral and forget to set the parking brake. Could happen to anyone. Next thing you know, your car's missing from its parking space and off on a little trip of its own.



Any of these situations could lead to a serious collision, but how can you tell when it happens? Well, our little collision detector not only alerts you to the collision, it even tells you if you've been hit from the front or the rear. And if you're simultaneously hit from both front and rear, the "impact" LED glows twice as brightly. The circuit is shown in fig. 7.

The plungers mount to the front and rear bumpers; on recent models with impact-absorbing bumpers, they can mount between the inside of the bumper and the body - or on standard bumpers, they can mount externally, between the bumper and the colliding person or object.

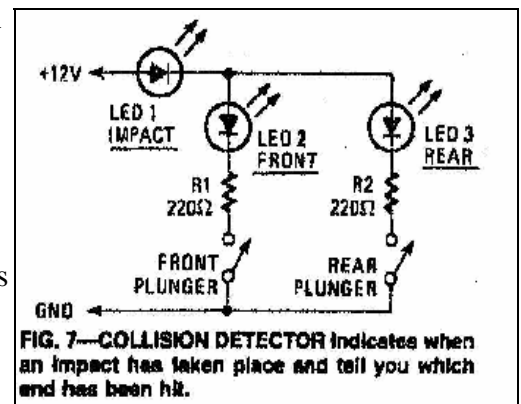
Wiper-blade Maintenance Check

Safety officials insist that one of the worst hazards to good vision - especially in inclement climatic conditions typified by substantial precipitation - is a set of poorly-performing wiper blades. In addition to now clearing weather off the window effectively, bad blades can streak the windows miserably, further impairing a driver's view of the road, and his ability to drive safely.

This useful circuit (fig 8) helps you keep your wiper blades up to snuff by prompting periodic checks under actual conditions of inclemency.

An array of conductive fingers, SW1, separated by narrow non-conductive paths is used as the sensor. Copper foil cut in a manner similar to the schematic symbol and glued to the outside of the car's windshield (outside the wiper sweep area) can do the job handily. The remainder of the circuit is a simple PNP transistor switch, which turns on the *check wipers* LED any time the SW1 array detects water or snow on the windshield.

This device helps assure that the wipers are checked during rain and snow falls for proper operation; similar maintenance checks performed without precipitation present could precipitate inaccurate conclusions and unneeded maintenance costs.



Flat Tire Alert

Nothing's more embarrassing than motoring nonchalantly along a comfortable stretch of highway only to discover you have one or more flat tires. Other drivers on the road honk and wave at you, but they're not just being friendly, nosiree. First thing you know, you've stopped at a roadside rest for a stretch of the old legs and an absolute stranger walks up to you and says "Hey buddy, you've got a flat tire !" Well ! Is your face Red !

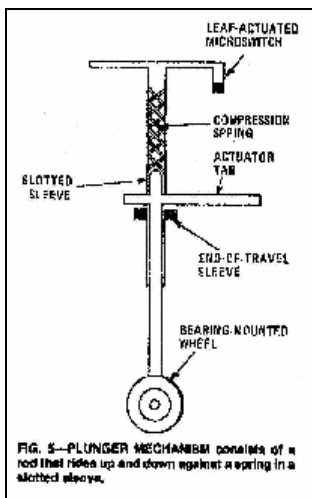
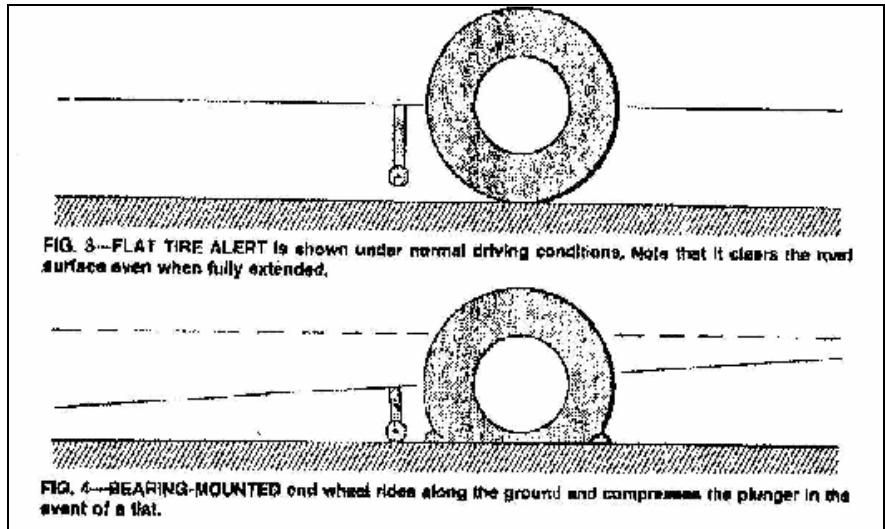
But you don't have to put up with that awkward social situation. You can prepare yourself in advance with this simple flat-tire alert that not only tells you that you have a flat, it is so advanced that it even tells you which tire has let you down.

This circuit, while simple, represents a more complicated design problem than you appreciate. Originally, we tried placing a simple visual system (camera and one light) inside each tire, but results were not promising. We even tried placing the light across from the camera hoping the change in air pressure would change the image, but it was no-go. In addition, the tires became very difficult to balance and we experienced some problems with the camera cables twisting.

We opted for an external plunger assembly located adjacent to each tire. Under normal driving conditions (fig 3), the plunger handily clears the road surface even when fully extended. But in the event the bottom of the tire becomes flat (fig 4), the bearing-mounted end wheel rides along the ground while compressing the plunger assembly.

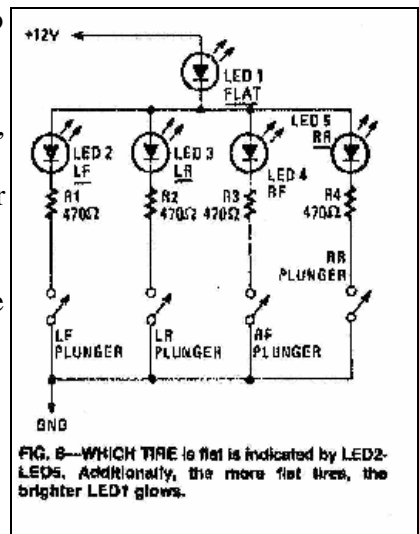
The mechanism itself (fig 5) consists of a rod that rides up and down against a compression spring in a slotted sleeve.

An actuator tab protrudes through the slot in the sleeve and contacts the actuator leaf on a microswitch, which provides the electrical signal to the circuit (fig 6).



A plunger is located adjacent to each tire. LED's 2-5 correspond to each tire. In addition, LED 1 is connected as a current-summing *wired-or* indicator; it not only glows any time any tire is flat, the more flat tires, the brighter that LED glows.

Calibration of the circuit is simple. After installing the plungers, release air from the tires until they represent the tire shown in fig 4 (if your tire goes flat at the top or side instead of the bottom, write for advice). Adjust the switch and tab position until the corresponding LED lights. As you proceed through all four tires, you should observe LED 1 glowing progressively brighter. When all four plungers have been calibrated, restore the tires to their appearance as in fig 3.



This circuit should be wired into an accessory circuit, since the 80-milliamp drain that would be represented by all four tires being flat could eventually discharge the battery if you do not notice the lighted LED's.

And Now . . . Here's Johnny.

Sorry, but I can't take credit for the preceding work. John Emde forwarded those pages (several months ago) for inclusion in the April Newsletter. OK now, let's be honest. How many of you were taken in by the articles? Will all the real **April Fools** please stand up?

Speaking of John, he called me last Wednesday to inform me that two additional electric vehicles will be available for viewing at this month's club meeting. Dave Lewis plans to have his Chevy S-10 Pick up truck there, as well as the unveiling of Steve Grushas' rebuilt Ford Escort. I have not spoken with Dave, but Steve and John Emde spent many long hours over the winter doing upgrades to Steve's Escort – and I understand it is now back on the road.



Last – But Not Least . . .

A few final notes on the Alternative Fuel Vehicle event. As things stand today, we are still waiting to hear a final decision from the Joliet Township High Schools as to whether or not they intend to participate.

With all that needs to be done, we told the schools that we needed a FIRM commitment from them by the first week of May 2005. The reason for such an early decision is simple. Nothing will be decided till fall, once the schools let out for summer. Logistically, it would be impossible to coordinate an event like this with only a few months lead time.

Right now, we are planning for full inclusion of the schools – but we do have a tentative fall back position. That is, we simply proceed without them. At this point, the track officials are considering hosting the event with or without the high school's participation. There are pros and cons both ways, but my personal preference would be to include the schools.

If the schools are not interesting in joining the festivities, we have the option of inviting other schools, universities, junior colleges . . . or run it as our own event.

Things should come to a head by our next meeting on May 20, 2005. See you there.

FVEAA MEMBERSHIP APPLICATION

November 2004 thru October 2005

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Newsletter Option (Check One)

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\$20.00 Annual Dues *\$15.00 Annual Dues* *\$20.00 Annual Dues*

Prorated Membership Dues

FVEAA annual membership is \$ 20.00. The fiscal year begins November 1st.

Dues for **NEW** members (not renewing members) joining after that date is adjusted according to the following schedule:

Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.
\$ 20.00	\$ 19.00	\$ 18.00	\$ 17.00	\$ 16.00	\$ 14.00	\$ 12.00	\$ 10.00	\$ 8.00	\$ 6.00	\$ 4.00	\$ 2.00

Make your check payable to the FVEAA and mail to:

Dale Corel, FVEAA Treasurer
595 Gateshead North
Elk Grove Village, IL 60007-3433

Please List Any Comments, Questions, Suggestions or Discussion Topics Below
