Fox Valley Electric Auto Association

PO Box 214
Wheaton, IL 60187-0214

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JAN 2014 FVEAA Newsletter

The FVEAA is a Not-For-Profit Illinois Corporation and the Chicago Area Chapter of The Electric Auto Association

Next Meeting - CHANGE...HOLIDAY PARTY !!

January 17, 2014
Community Christian Church
1635 Emerson Lane, Naperville, Illinois 60540

at the intersection of Ogden and Rickert Drive in Naperville
Also called the "Yellow Box." We'll meet in the little theater west side, 1st floor
Map: Community Christian Church

DOORS OPEN 6:30 p.m. MEETING STARTS 7:00 p.m. ENDS 9:15 p.m.

Agenda

- 6:30 Doors Open
- 7:00 Call to Order, Welcome and Introductions
- Committee Reports
- Old Business / New Business
- Presentation:
- Break
- Presentation:
- 9:15 Close

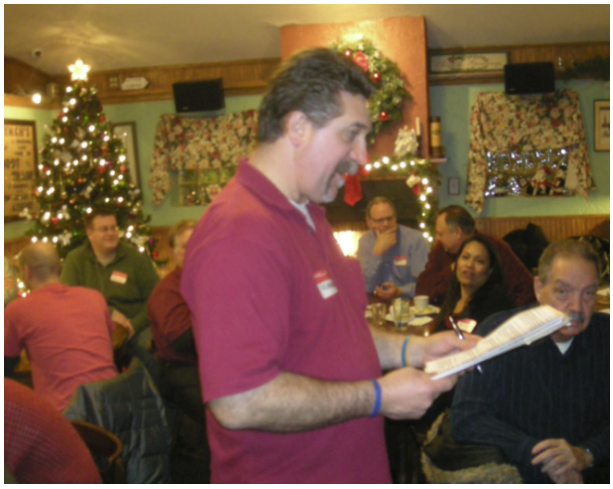
FVEAA is now on Facebook thanks to member Grant Gerke. Check it out and **Like** us at: https://www.facebook.com/FoxValleyElectricAutoAssociation

President's Words *Bruce Jones*

Hi EVeryone

Last month we had a wonderful holiday party at the Irish Times Pub in Brookfield thanks to the planning by treasurer Todd Dore. Despite the impending snow there was a nice turnout and we had excellent food. The evening included a presentation with slides summarizing the years' activities by president Bruce Jones, with handmade PEZ/ PEV door prizes and VP Rich Hirschberg provided a highly entertaining trivia contest that pitted the minds and memories of our members and guests. A great time was had by all.

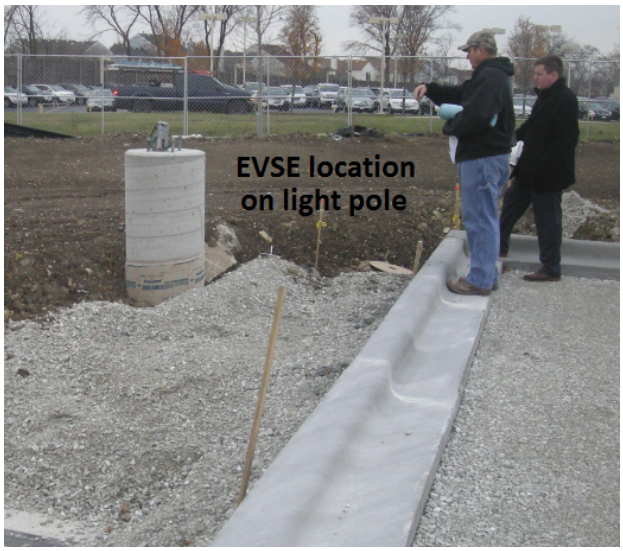
Party in the "Back Cottage" at the Irish Times Pub in Bookfield on 12/13/2013



FVEAA EV Trivia-meister Rich Hirschberg

CCC CHARGING STATION

Here are some photos showing the projected location of the future EVSE at Community Christian Church where we meet. The weather however has been totally uncooperative this Fall / Winter so construction on the new worship center has ground to a halt, and stopped any progress on EVSE installation. Lets hope there's a warm March and we can proceed with the installation! Luckily the State of Illinois pushed out the rebate deadlines until April . . so there's still a shot.



EVSE planning begins (looking North) in new CCC parking lot. The unit will attach to the future light pole

Projected location of the light pole and EVSE with worship center in background. Electrical room is up around the corner and to the left (above word "North")

Here's wishing everyone has a happy, healthy New Year!

Bruce

This Month's Presenters

January

Rich's Ramblin's

Rich Carroll

Almost all cars and trucks made since 1996 have a means of signalling conditions on an electronic buss, This system is commonly used for diagnosis and reporting, and the system it uses is commonly called OBD-II, the second generation of Onboard Diagnostics. OBD-II systems in vehicles have a diagnostic port under the steering column, where a technician can access the system. There is quite a bit of reporting on the system, and while it may seem complex, it really isn't. OBD was designed by the Society of Automotive Engineers to be a system that could send information between any two online components without fear of any disturbance from electrical 'noise' on the system. If the wire happened to go by an electric motor, or a magnetic field, the system had to be designed to ignore that electrical noise, and continue to communicate.

There is a lot of information on this system, in most cars it is a fairly robust system. Not just information about your Exhaust Gas Recycling (EGR) valves and the venting of your gasoline cap and the amount of fuel remaining, but in some cars, the status of taillights and stop and turn lights. There is much more information on this bus than most enthusiasts would like to deal with, but you can put a reader on the system, and read either stored trouble codes, or current messages. Some of those messages include engine RPM, engine temperature, and vehicle speed, and most of the newer vehicles use dashboards that accept and use these signals. If one of a set of specific sensors sends a message indicating that the value is out of it's normal range, the system can be set to display that on the MIL (multifunction indicator light) on the dash. That has the label "Check Engine" Most of those codes that trigger the MIL light will switch it on. If the code is no longer sent, many codes are designed to reset the MIL lamp after the ignition key is turned on and off for 40 cycles. So, if you forget to tighten the gas cap in a gasoline car, the light will come on and stay on. If you tighten the gas cap, the light will go off after about 40 trips of the car.

Several EV manufacturers have implemented the OBD-II system for their motor controllers, and the system has a series of addresses reserved for messages that are unique to that specific manufacturer. The Jaguar sedan that is marketed now, has an OBD-II signal and code for the backup camera to trigger an overlay with curved lines if the steering wheel is turned while backing. That is a car specific code.

Most of the aftermarket EV controller makers used a second system, where the OBD-II system of the car was completely separate from the EV controller, but they used similar commands and similar internal structure. The two systems were each self contained, and at first, did not interchange information.

Later, as these systems matured, some EV controllers are now on the same bus as the normal automotive components, and these can coexist happily.

Early on, the issue of security in OBD-II systems was noted, but as there was no connection to the outside, and no radio communication attached to the system (the system can turn on and off the car stereo, and change stations, but cannot receive (or broadcast) radio signals.) Early uses allowed technicians to only access the OBD-II bus with expensive devices, which did not stay connected. Since each device and each receiver is a stand-alone component, there is no need for a central signal directing system, and therefore, no CPU and memory to get compromised by malware.

In the later years, two disturbing developments have occurred. It is completely possible to connect to the OBD-II port under the steering wheel with a small transmitter that can use a radio connection. Granted, most of these used Bluetooth connections, so you could do the OBD-II diagnostics on a smart phone, or use the screen of the smart phone to simulate a dashboard, completely customizeable. The adapters to connect are under $20, and the software is under $5. The one I like is called Torque, there is a free version and a $4.95 pro version. It can produce really slick looking gauges. Some kit cars use a ODB-II adapter and a 7 inch Android tablet as their entire dashboard.

This bluetooth adapter is supposed to ony carry a signal for a few feet, but many of us remember the 4W and 5W citizen's band radios of the 1970's which several folks attached to 'linear' antenna amps going up to 1000W. Now the 1-3 miles of CB reception was dramatically increased. There are bluetooth transmitters that will go well over the stated 10 meter range of the normal Class II Bluetooth device.

And to add to this problem, more and more functions are being assigned to devices on the bus, so some new cars have signals from the steering wheel input to the electronic steering box, and from the brake system to the ABS actuator. Someone with access to the OBD-II bus could have remote capability to steer or brake some (actually mostly the high end) cars. The bus normally has no radio communications, so there is no, repeat no, means of detecting malware, no means of selecting which signals are valid, which are not. Some of the 'tuners' who modify their cars for show and performance, leave that bluetooth adapter plugged in under the steering column, so that they can get acceleration, and quarter mile times, and speeds on their hand held device. However, someone with a high powered transmitter, near the car can also send signals to the bluetooth adapter, and can effectively set the brakes or worse.

The second development is the tiny micro, micro nature of some of these chips. The manufacturers are incuding a tail litght socket with a printed circuit board inside the socket, which will accept OBD-II commands to turn the tail light on and off. Most of these tiny printed circuit boards are much smaller than a dime, and in quantity, priced at just pennies. Security analysts in the industry have shown tail light sockets with not a simple OBD-II receiver in them, but with a radio signal receiver combined with the OBD-II signal interceptor. If you have your tail light socket replaced with an off-brand part, it is possible that it has a complete radio receiver in it which would allow a car close to you access to some of your OBD-II commands.

Several manufacturers have demonstrated that it is completely possible to actuate your car's brakes by using one of these two means while driving next to you, or behind you. Most automobiles have no method of saving the information that is sent on the bus, unless it is a trouble code. But that doesn't stop aftermarket folks from

creating recorders that snap on the port under your dash and capture the signals into a memory chip. I think that would be a good way to protect yourself, but the only one using this so far is Progressive Insurance. They provide you a small OBD-II connected memory module called a Snapshot device, and let you drive with it for a while. usually 30 days. It measures speed, engine RPM, throttle openings, and many more parameters. Take it back to Progressive and see if you driving will qualify, but they will see an EXACT picture of how you drove, how fast you accelerated, the amount of time you were above 55 MPH, and the amount of time you had the accelerator pedal on the floor. Yikes!

I'm not sure if I am more scared of the thought of some devious person applying my brakes for me, or of some insurance company analyzing in detail my driving.

Membership Update

Ted Lowe

Let's GROW the FVEAA in 2014! Happy Holidays to All!

Pictures

See first page

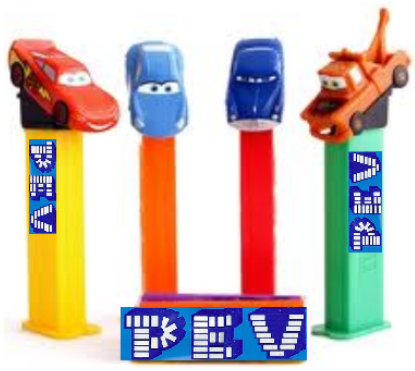
Meeting Minutes

President Bruce Jones opened the December 13th Holiday party at the Irish Times Pub and welcomed all guests spouses and newcomers. It was cheerful and cozy in the back cottage room, with excellent food.

Presentation

Bruce Jones presented a slide show of the year's activities, along with a presentation showing the monthly meeting presentations. (Thanks to Keith Baubkus who assisted with the PC and setup!) and after dinner, Rich Hirschberg led a mind stretching FVEAA Trivia contest that pitted each table against one another.

Surveys were also handed out showing all of the presentations and activities this year. Please continue to hand in your recommendations and ideas for monthly presenters and activities!



We ordered PEVs for everyone but somehow they misunderstood the order again and we received homemade "PEV" ornaments! Ha Ha Ha Happy New Year - Bruce

Membership Form

Ted Lowe

FVEAA Membership Application Form - Version 2014-01-01

Name:_____
Address:_____
City, State Zipcode:_____
Phone:_____ Phone Type: Home ___ Work ___ Cell ___
Email:_____
Please check one: New Member _____ Renewal _____

How did you hear about the FVEAA ? _____

Membership Types and Annual Dues (please circle one):

Individual	$20
Business	$100
Premier Business	$250
Charter Business	$500

Newsletter Delivery Type (please circle one): No Newsletter Electronic

Please make checks payable to "FVEAA" and postal mail it with this membership application form to:
FVEAA
PO Box 214
Wheaton, IL 60187-0214
Attn: Membership

FVEAA Business Members

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WWW.GO-EV.COM

800 S State St. Suite 4
Lockport, IL 60441
630.243.9100

Bob's Hillview Auto
Gas • Electric • Hybrid
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Bob's Hillview Auto
Bob Baker
4c Hillview Dr
Lake Barrington, IL 60010
Work: 847-842-9543
Email: bobshillviewauto@gmail.com
Web: www.bobshillviewauto.com