

Electric Car Workshop
At SEPS-AAPT Spring 09 Meeting
Villanova University

By Oliver H. Perry

Former physics teacher Cinnaminson High School

Present: adjunct physics teacher at Burlington County College

President of the Eastern Electric Vehicle Club of Valley Forge PA

The multi-theme of the workshop was the “utilization of electric vehicles in teaching physics principles” and “understanding the energy flow from well to wheel of electric and hybrid vehicles.” The goal of the workshop was to interest teachers in electric and hybrid car technology enough to stimulate further investigation and enable them to satisfy the curiosity of their students in days to come. We also hoped to enable teachers to separate fact from fiction when it comes to establishing the real practicability of electric and hybrid cars in our present energy dependent economy.

The workshop took place after a lengthy great luncheon and suffered a late beginning. The half dozen electric vehicle owners and specialists who made themselves available for questions were introduced. An overview of some of the terms used in electric and hybrid cars was attempted as well as a discussion of some surprising air flow coefficient of friction concepts common to all vehicles. It was difficult to compact a lot of technology and related vocabulary into an hour of time, especially after lunch. It became apparent that the attendees really wanted to look under the hoods of real electric vehicles rather than to sit through chalkboard explanations, so we terminated the classroom discussion in favor of the parking lot.

Typical of our students, the teachers perked up and showed real interest when they gathered around the vehicles for question and answer sessions. Members of the Eastern Electric Vehicle Club brought a total of six vehicles for display. We had one hybrid, one bio-diesel and four totally electric vehicle conversions available. Some of the instructors took the opportunity to drive the converted to electric Ford Escort around the parking lot and expressed surprise at the performance. The idea that electric cars perform like golf carts was quickly dispensed with the sound of the squeal of the tires during acceleration.

We passed out a lengthy packet that reviews the terminology (suitable for teachers and students) and explains the basic operational principles of electric and hybrid cars. This can be acquired by anyone by contacting Oliver H. Perry, perrydap@aol.com. Any teacher interested in learning more about electric cars or beginning an electric car project may also contact Mr. Perry at the above e-mail address.