EEVC NEWSLETTER

Published by the Eastern Electric Vehicle Club

Peter Cleaveland, Editor **Vol 26 No 2**
Club Address: P.O. Box 134, Valley Forge, PA 19481-0134 **FEBRUARY, 2006**
email: easternev@aol.com. Web site: www.eevc.info
President: Oliver Perry, 5 Old Stagecoach Turn
Shamong, NJ 08088, (609) 268-0944

Now affiliated with EAA

NEW NEV LOOKS LIKE AN SUV

A company called Miles Automotive has begun importing a Chinese-built neighborhood electric vehicle that may appeal to Americans who otherwise wouldn't be interested in EVs — or who perhaps dislike the wimp image some associate with them.

The ZX40 from Miles Automotive is an NEV that looks like a little SUV.

Their ZX40 looks like an SUV, and weighs much more than a conventional NEV: 2500 lb compared to the usual 1600. It also has an array of luxury bells and whistles that few NEVs can boast: a reinforced steel frame, vacuum-assisted power brakes with antilock (in keeping with its greater weight), variable intermittent windshield wipers, rear window wiper, remote locking and security system, roof rack, power windows and side mirrors, power door locks, adjustable leather seats, side-impact door beams, and dual front air bags.

With all that stuff one might hope the thing would be fast and powerful, but remember it's an NEV, so it can't be by law. Powered by a 5.6 hp brush-type motor with a Curtis controller and a 48-volt lead-acid battery pack, its top speed is 25 mph, while claimed range is 40+ miles.

The car is 11.1 feet long, 4.8 feet wide and 5.5 feet high. The wheelbase is 7.7 feet (92 inches). Standard seating is two people, with an option for four.

The company claims to be planning two bigger models: the ZX90, promised for

March of 2007 and claiming a speed of 50 mph and a range of 70 miles; and the XS200, which claims a range of 200 miles and highway speeds. This one is supposed to be out in September of 2007.

In a telephone interview Benjamin Texter of Miles Automotive reported that initial deliveries will be to fleet users, and that some vehicles (number not given) had gone to a U.S. Navy installation in Texas. We were unable to get any more details, nor a price; if we hear anything more we'll let you know.

STATE OF THE UNION ADDRESS
Oliver Perry

I remember coming out of a meeting in my junior year of college in a jubilant mood. The new president had finished a rousing speech promising great days ahead. One of our faculty advisors, also on the way out of the meeting, asked the question to those nearest him, "Aside from rhetoric, what did he really say?" "Our president made me feel like cheering but I am not sure what for." "Everything he said was just rah, rah, rah!"

My professor's question (and his comment that followed) quickly set me into my critical thinking mode.

Previous to the faculty advisor's comment, I had shaken hands with the president and complimented him on his speech. For some reason he had replied, "Coming from you I take that as a real compliment!" Apparently he saw me as a critical thinking member of the student body, to put it nicely.

On the national level, in his State of the Union Address a week ago President Bush gave a rousing speech that should have all of us cheering. Statements that we have been making for decades, from "Americans are addicted to oil!" to "We must also change how we power our automobiles!" should have brought all of us to our feet in a standing ovation had we been personally present. If was refreshing to hear of the Advanced Energy Initiative, a plan to put more tax dollars into research that would create cleaner power plants and cars powered by hydrogen, electricity and ethanol.

To those who maintain that the Bush presidency has been totally committed to the petroleum economy, Bush provided what in football is known as a "reverse" play. He may have taken his opposition totally by surprise. It is hard for the conservationists or the environmentalists to totally blast Bush for making no attempt in his administration to solve our energy problems in a more environmentally friendly manner. And those who doubted that the oil baron Republican had it in him to address transportation concerns our way, now have some things to reconsider.

Should we cheer and dance for joy over the remarks that Bush made in his speech to the nation? Or, should we, as my college professor once advocated, critically analyze the speech to the point of losing our enthusiasm?

Ronald Bailey in the Opinion section of the February 2 edition of *The Wall Street Journal* points out that the past 35 years of failed presidential energy initiatives doesn't bode well for Bush's new proposals. During the 1973 Arab oil embargo Richard Nixon asserted, "In the year 1980, the United States will not be dependent on any other country for the energy we need to provide our jobs, to heat our homes, and to keep our transportation moving." Like Mr. Bush, Nixon also promised federal dollars to produce "an unconventional powered, virtually pollution free automobile within five years."

Gerald Ford moved the date for achieving American energy independence up to 1985. In 1975, Mr. Ford signed the Energy Policy and Conservation Act, which set federal standards for the energy efficiency in new cars for the first time.

In 1977 Jimmy Carter notoriously declared energy independence an issue of such vital national interest that it was the moral equivalent of war. Mr. Carter swore, "Beginning this moment, this nation will never use more foreign oil than we did in 1977 — never." He proposed a sweeping $142 billion energy plan which would achieve energy independence by 1990, moving the date forward again.

In 1992, Bill Clinton proposed a tax of 59.9 cents per BTU on crude oil to discourage dependence on foreign oil. The next year he launched the $1 billion Partnership for New Generation Vehicles with the Big Three automakers aiming by 2004 to produce a prototype car that was three times more fuel-efficient than conventional vehicles.

Ronald Bailey sums up his article, "Presidential Energy" by stating that despite bold

proclamations by our presidents, the only way we will ever reach energy independence will be a response to higher prices at the pump. Despite more than thirty years of government sponsored initiatives only a half a million alternative energy vehicles roam our US highways. Bailey concludes that higher prices at the pump will do far more for energy technology innovation than a government sponsored "Advanced Energy Initiative."

Let's Cheer the Bush Address, Anyway!

Even if our critical minds conclude that little real change will occur as a result of Bush's speech, let's applaud the speech anyway. Someone has said that "Truth is truth no matter who states it!" It was good to hear the president say that "Americans were addicted to oil!" And it has been equally good to hear the press debate whether or not this is true.

Several days after Bush's speech I enjoyed watching several commentators on TV banter about the notion that they might be "gasoholics."

What are the symptoms? Do any of you have these tell-tale symptoms?

Number one, you drive an SUV "by yourself !"

Secondly, you take a drive first thing in the morning, and if you can't get your solo drive in you become irritable!"

Thirdly, you spend more of your paycheck on gasoline than you do on groceries!

I believe the time has come for the EEVC to offer a "Gasoholics Anonymous" program for our neighbors. Please bring your addicted friends to the next meeting. It's the right thing to do.

Conclusion

It never hurts to have the top politician in the country shout the need for reform, even if it is only rhetoric. In this case I don't think it is. But then again I didn't think Nixon lied either.

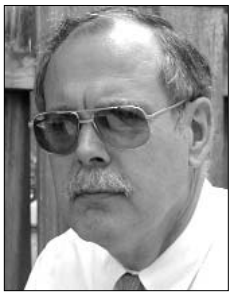
We need change. We have cheered before and those cheers at the time may have been in vain. We may have finally reached the state of mind where we think we can only cheer when the real revolution finally comes. I have stood and cheered many times, falsely thinking that the team I rooted for was going to cross the goal line. They didn't. When they didn't I felt let down. It is not an uncommon feeling. One of my friends once said after the Eagles lost a football game, "I'm never going to waste another Sunday afternoon watching them lose again!"

But guess what? It may be more fun to cheer for something that might happen, hoping that it will, even if it doesn't, than to sit like a critical grump (in a purple funk) pointing out to everyone that we are going to die anyway, so what is the use of cheering.

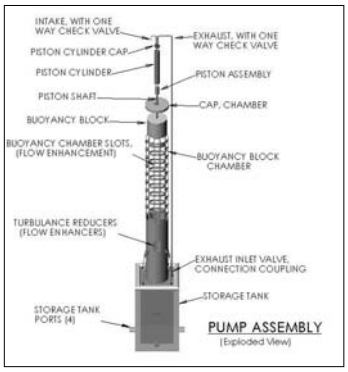
Three Cheers for Bush! Rah, Rah, Rah. He has said some things that we like to hear.

USE OR MISUSE OF WATER IN CAL

By California Pete



The California coast is famous for its surf, and with recurrent energy shortages it's not surprising that at least one entrepreneur is busy with a scheme to harvest energy from some of it. An outfit called Independent Natural Resources, Inc. (Edina, MN; www.inri.us) has a system they call SEADOG that consists of a series of floats connected to pump cylinders. As each float goes up and down with the passing waves it strokes the piston in its pump; this can pump water into an elevated reservoir. The water in the reservoir can then be used to turn a turbine to generate electricity, which makes it a variation on the theme of pumped storage already in use.



The company quotes an estimate from the World Energy Council that "if less than 0.1% of the renewable energy (tides, waves & thermal) within the oceans could be converted into electricity it would satisfy the present world demand for energy more than five times over." The company claims that its system can harvest a significant fraction of that:

"With swells of at least 5 ft, a 1 square mile pump field (containing 20,400 SEADOG pumps) could generate approximately 242 MW of Hydroelectric energy," according to INRI CEO Mark A. Thomas. INRI proposes to install a demonstration pump off the coast of Humboldt County, in northern California.

According to the August 2005 draft of the "Humboldt County General Plan 2025 Energy Element Background Technical Report," there is enough wave energy along the Humboldt County shoreline that "assuming 20% of [the available] area is exploitable and a 50% capacity factor ..., the total estimated capacity and annual energy production for Humboldt County are 1153 MW and 5050 GWh per year, respectively." That's about five times what the county itself uses, so the rest could be exported to other parts of the state.

Of course there have been scores, if not hundreds of attempts to capture wave energy, and few have succeeded. We'll have to wait and see how this one develops. So far we have no reports of comments from the surfers.

A repeat of New Orleans in California?

California has an interesting relationship with water. What rain the state does get falls in only one season (roughly October to April). San Francisco and the Bay Area get their drinking water from the Hetch Hetchy reservoir near Yosemite, which was created despite the pleas of naturalist John Muir that the site, more beautiful than Yosemite, should be preserved. San Francisco needed the water and that was that.

But much of the water that goes to the agricultural regions of the Central Valley and beyond doesn't come from Hetch Hetchy; it comes from the Sacramento-San Joaquin River Delta, an area extending south and west of the state capitol and eventually emptying into San Francisco bay. Over the years large parts of the delta have been surrounded by levees and drained for farmland or development. In addition, a huge amount of fresh water is diverted by more levees and exported via a system of aqueducts to the rest of the state, including Los Angeles.

Now, driven by rapacious real estate developers and the leaders of nearby communities desperate to expand their fiefdoms, there are proposals to built thousands of additional housing units on the land behind the levees.

But there's a problem: the land has subsided over the years and is now as much as six feet below the level of the delta, and many of the levees are simple dirt structures a century old. One good earthquake (which is inevitable) and those levees will collapse. According to the *San Francisco Chronicle*, "Nearly 40,000 homes that could get flooded if a levee failed are planned in the cities of Lathrop (San Joaquin County), Oakley and Stockton alone." And, of course, a levee collapse will cut off water to Southern California. This is beyond dumb, but there's an old saying that in the West, water flows uphill towards money.

"State elected officials and bureaucrats," according to the *Chronicle,* "are worried about the potential economic and social effects of a levee failure next to new developments or existing urban areas in the delta and other parts of the state, particularly the Central Valley. They are considering selling bonds to fund levee improvements, better mapping of risk zones and requiring all homeowners behind levees to have flood insurance, among other measures." And our senators are pushing a proposal to spend upwards of $100 million of federal money to fix the levees, but chances of passage are dubious. So with the next earthquake we may see more and higher-priced real estate flooded than we saw in New Orleans' ninth ward.

NEWS UPDATE

New Li-ion battery for HEVs

Altair Nanotechnologies Inc. (www.altairnano.com) has announced that it has completed testing on a new lithium ion battery cells containing nano-structured lithium titanate electrode materials, and that the results exceed the system-level power requirements set forth by the U.S. Council for Automotive Research FreedomCAR Energy Storage System Performance Goals for hybrid electric vehicle (HEVs), as well as those requirements published by major U.S. automakers.

The cells demonstrate a useable state-of-charge range twice that of conventional nickel metal hydride (Ni-MH) and claim rapid

charge and discharge, longer cycle life and more inherently safe performance than either currently available nickel metal hydride or lithium ion. This should,the company says, make possible a battery pack half the size of those currently being tested for HEV applications. The batteries also retain 90 percent of room temperature charge at minus 30°C.

Previous tests had shown a three-minute full recharge and more than 9000 cycles of sequential three-minute, 100 percent recharges and discharges, compared to traditional lithium ion batteries with a cycle life of 300 to 500 recharges and discharges.

New plug-in hybrid

In February, 2005 a company called AFS Trinity Power Corporation announced it had developed a plug-in hybrid powertrain that would enable a car to achieve 250 mpg after being plugged in overnight. Called the Extreme Hybrid™ it used a flywheel as an energy storage device. The claimed advantage of the flywheel was this it could absorb regenerative braking energy at rates much higher than could a battery, and combined with a battery bank could store enough energy for 40 or 50 miles of driving.

Nothing was heard from AFS for some time, but they have recently issued a press release that says essentially what they said a year ago. Will they ever have a product?

More biodiesel

Perhaps the increasing publicity about Willy Nelson's biodiesel is having a worthwhile effect. DaimlerChrysler announced on January 20 that it is approving use of B20 (20 percent biodiesel) in Dodge Ram pickup trucks starting with the 2007 model year. The company had previously endorsed use of B5 (5 percent biodiesel) fuel in the Jeep Liberty CRD diesel SUV.

Along the same line, Exelon, parent company of PECO, has announced that it will be making biodiesel the main fuel for its fleet of more than 2500 vehicles.

This is all very nice, but it doesn't do much to solve our petroleum problems, because B20 is 80 percent conventional diesel fuel and only 20 percent bio fuel. And the B5 that the Jeeps use is only 5 percent.

What we'd like to see is a commercial line of vehicles that will run on 100% soybean oil or WVO (waste vegetable oil).

***Fortune* touts ethanol**

An article by Adam Lashinsky and Nelson D. Schwartz in the January 24 issue of *Fortune* magazine makes the case that better technology will make ethanol increasingly attractive as a vehicle fuel. They start out by revealing that more than five million vehicles already on the road are able to run on ethanol-based fuel; the automakers, the article says, "quietly added the flex-fuel feature to get a break from fuel-economy standards."

What makes ethanol more attractive now, the article points out, is that it has begun to attract business interest, and that new technologies are becoming available to make it out of wood chips, corn stalks, and switchgrass and other things (biomass) — so-called cellulosic ethanol. The key to making cellulosic ethanol economically feasible is to find a way to break cellulose down into fermentable sugars, and, says the article, the biotech firm Genencor claims to have found a way to cut the production cost of a gallon of ethanol from "from $5 five years ago to 20 cents today."

We paid a visit to Genencor's new plant in Cedar Rapids, IA some years ago; at that time the company's main products were enzymes used to help laundry detergents do a better job of cleaning. Now they make enzymes for a wide variety of applications. A look at the company's Web site reveals a press release on the cost reductions, but it says that the cost of $0.10-$0.20 per gallon of ethanol is just for the cellulase enzyme, not for the rest of the process. Oh well, it's a start.

More demand for PHEVs

On January 24 a group of more than a dozen cities, including Austin, Baltimore, Denver, Los Angeles, San Francisco and Seattle; plus more than 100 public power utilities, businesses and national policy groups campaign announced the start of a nationwide campaign to urge automakers to accelerate development of plug-in hybrid vehicles. Called the "Plug-In Partners" It is estimated that "a plug-in vehicle with even a 20-mile range could reduce petroleum fuel consump-

tion by about 60 percent," according to Bob Graham, Manager of EPRI's Electric Transmission program.

For more on the effort, take a look at www.pluginpartners.org.

COMING EVENTS

Clean Heavy Duty Vehicle 2006
Feb 22-24, San Diego, CA. Contact: Susan Romeo or Monica Alcaraz, 626-744-5600, Srromeo@weststart.org or Malcaraz@weststart.org, www.weststart.org.
Symposium: Hydrogen Internal Combustion Engines
Feb 22, San Diego, CA. Contact Lawrence Wnuk, 626-744-5600, lwnuk@weststart.org.
2006 SAE World Congress
April 3-7, 2006, Detroit, MI. Contact Nancy Lewis or Shawn Andreassi, both of SAE International at 724-772-4068 or pr@sae.org.
5th EVer EAA Chapters Conference
May 13-15, Chicago area, hosted by Fox Valley EAA, http://fveaa.org.
Fuel Cell 2006
June 6-7, Raleigh/Durham, NC. Contact Marsha Hanrahan, marshah@infowebcom.com.
Michelin Challenge Bibendum 2006
June 9-12, Paris. Contact at http://www.challengebibendum.com/challenge/front/affich.jsp?codeRubrique=45&lang=EN, or go to www.www.challengebibendum.com.
Convergence 2006
October 16-18, 20, Detroit, MI. Check www.sae.org.

MEETING SCHEDULE

Meetings are held in Room 35, Plymouth-Whitemarsh High School, 201 East Germantown Pike in Plymouth Meeting, PA, and begin at 7:00 p.m.

March 8

April 12

May 10

June 14

July 12

ADVERTISEMENTS

FOR SALE

1992 Dodge Colt with 18,000 miles. (Yes, you read correctly. There is minimal wear and tear on it.)

First-generation fully electric vehicle, converted for my aunt and uncle, Quakers who have been on the cutting-edge of the EV movement. The car is a fully-functional, fully-approved vehicle for use on all roads, with current PA inspection.

20 hp motor, multi-speed transmission (regular gear shift with no clutch)

Range of 20 miles. Goes up to 40 mph quite comfortably. Goes up to 60 easily, but has little power at higher speed, so highway driving is not recommended.

110-220 V Lester charger, off board. Using 110 takes about 5 hours for full charge Was purchased in 4/95 and has been repaired several times. You need to be able to park it fairly closely to an outlet.

Present Deka batteries were bought 9/03. #8C12 battery.wet (weighs 928 lbs) from East Penn Manufacturing Co. 12 V. six in back, two in front

No air conditioner (removed, since added weight)

Ideal buyer would be interested in tinkering, and in the technical aspects of the workings of a fully electric vehicle.

It is quirky, but any decent mechanic will be able to perform maintenance on most of it. Indeed, we have found that most mechanics have fun with it!

We are asking $2,500.

Interested? Tom Hoopes, Wayne, PA, 610-688-1522, eithercoe@comcast.net.