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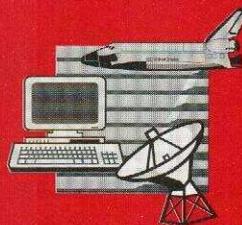
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Technology Today

Alan J. Pierce



The EVs Are Coming!

MANY environmentalists have dreamed that electric vehicles (EVs) would become a viable alternative to vehicles with gasoline combustion engines. The desire to reduce car emissions was so strong that California enacted legislation that would require 2 percent of 1998 vehicles to be electric powered.

Since September is the traditional roll-out month for new American cars, (this month we'll explore the current status of the electric-powered vehicle. After careful examination of current EV technology, the California Air Resources Board canceled the 1998 2 percent requirement while announcing that it will stand firm on its 10 percent EV requirement for 2003.

The EV prototype that General Motors has been developing is called the Impact. Built from the ground up as an electric vehicle, the Impact has been GM's EV laboratory on wheels. All other EVs on sale at this time contain a retrofit electric motor drive system installed in vehicles that were manufactured for gasoline engines.

General Motors, through their Saturn dealerships, plans to start selling the first true production model EV sports car this month under the new name EV1. The name Impact was to represent the environmental change that an electric powered vehicle would have on automobile pollution of our atmosphere. GM market research indicated, however, that the Impact name would be more often associated with banging into things, so it changed the name to EV1.

The EV1 will have a range of 90 miles per charge. Owners will be able to recharge its lead-acid batteries in 15 hours using a standard 110 V outlet, or three hours with a 220 V outlet. Special hook-ups will start to appear at upscale parking lots to recharge the vehicle in just 15 minutes.

Automobile research indicates that electric car sales should quickly reach 100,000 vehicles a year because these cars will meet the needs of the average person's 22 mile round-trip commute to work, as well as local shopping expeditions. EV1 owners will save two thirds of their current gasoline dollars, but they will have to plan on replacing the \$ 1,500 battery package every three years.

Chrysler, Honda, Toyota, and Solectra (a new automobile manufacturer) have all announced competitive EVs that they plan to sell toward the end of the 1997 model year. It is too early to tell if their announcements of up to 300 miles per charge and batteries with a 10-year life span are marketing hype or technological developments that the manufacturers will be able to carry into their production models.

The fact that a non-retrofit EV is going on sale by a major automobile manufacturer should help to feed a competitive development frenzy that will



Photo by Jeffrey G. Russell

GM's EV1

help lower prices, improve vehicle characteristics, and lay the cornerstone for the eventual replacement of combustion engine cars with a vehicle that uses a cleaner alternative fuel. Students might want to explore the world of the electric car further by using the Internet. Starting the search at the home page of the Electric Vehicle Association of the Americas, students will find links with great color graphics and other great stuff about EVs. The Internet address is <http://www.evaa.org>.

Recalling the Facts

1. In what way is the EV1 inferior to our current gasoline powered vehicles?
2. In what way is the EV1 superior to our current gasoline powered vehicles?
3. Why is California very concerned about its automobile emissions? **TD**

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