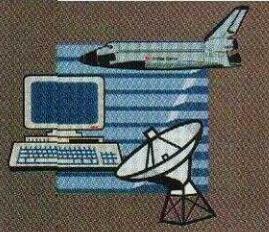


Technology Today

Alan J. Pierce



Prowling in an Aluminum Automobile

If you were to place all 1997-98 American automobiles on a continuum with the GMEV1 ("Technology Today," September 1996) at one end, what would you put at the other? Did you just think of the Chrysler Corporation's Plymouth Prowler? At first glance, you might think that this car is a low tech, steel hot rod with a muscle car engine. But the Prowler will surprise you.

The Prowler is a powerfully sculpted retro-styled hot rod. (See photo.) The systems and materials used to build this car, however, are on the cutting edge of auto and aerospace technology.

The Prowler was designed with a Dassault Catia computer-aided engineering system, the same system used to design fighter jets. Furthermore, the car is built of aluminum instead of steel. In fact, the Prowler can be considered aluminum-based rather than steel-based. The Prowler shares this distinction with only the Audi A8.

The Prowler's street weight is just 2,800 to 2,900 lbs. Re-engineering automobiles for weight reduction is a goal of auto manufacturers because each loss of 100 lbs. increases a vehicle's fuel economy by about a mile per gallon. In the case of the EV1, this means going farther on an electrical charge. For the



Photo courtesy of Chrysler Corp.

Prowler, it means lightning acceleration as well as much better gas mileage.

Chrysler's approach to weight control was to build the car mainly of alumi-

num. In fact, just about a third of the Prowler's weight is aluminum, the same metal planes are made of. The car's frame is made entirely of extruded aluminum alloy. The cockpit and bucket seat frames are also made of tough, strong, lightweight aluminum.

Many of the Prowler's non-aluminum parts are of other space-age materials—reaction-injection-molded urethane, acrylonitrile butadiene styrene, magnesium, composite plastics, and high-strength carbon fiber composites. The car has a 3.5 liter, 24-valve, V6 engine that develops 214 hp at 5,850 rpm. To provide quick, responsive handling, the Prowler has electronics one

might expect to find on any new auto, and it has dual air bags, dynamic side-impact protection, and Autostick—a new automatic shifting system.

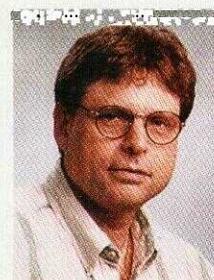
Chrysler will produce about 2,000 Prowlers this year. If one should reach the showroom of your local dealer, go see it and take along a refrigerator magnet to search for steel. There's not much there!

You can build a virtual Prowler on the Internet. There is a virtual production line on Plymouth's home page (<http://plymouthcars.com>). Just click on the Virtual Prowler icon. I didn't download the free software, so I can't report on the experience. If you do test the virtual production line, e-mail us (tdedit@techdirections.com) and let us know how you made out.

Recalling the Facts

1. What is the major difference between the Plymouth Prowler and the GM EV1?
2. How does the construction of the Prowler differ from that of most other automobiles?
3. What effect does weight have on a car's performance? **TD**

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