DOES A VEHICLE THAT GETS 2,000 MILES PER GALLON read like a typo with too many zeroes? It’s not.

Members of Cal Poly’s Super Mileage Club have received national media coverage for their “eco-car” that runs on standard gasoline and achieves almost that level of fuel efficiency – more than 1,900 miles to the gallon!

However, you probably won’t see this model on the market anytime soon according to Thomas Heckel and fellow mechanical engineering students David Ulrich, Estevan Negrete, Mike Kerns, Vann Chau, Kevin Fang and brothers Jason and Josh Kempenaar.

And even if it does, comfortable leg room and cargo space will not come standard.

The car is small, weighing approximately 96 pounds. It can seat one person – and only if that person is under 6’ feet tall and under 150 pounds. However, it can achieve a top speed of 40 to 45 mph using a Honda 50cc engine.

The students entered the car in the Shell Eco-Car Challenge earlier this year at the California Speedway in Fontana. Seven laps later, a distance of approximately 10 miles on the speedway’s inside track, contest officials measured the team’s amazing accomplishment. The car was achieving an astonishing 1,902.7 mpg.

To measure mileage, a mark was placed at the top of the 100ml fuel tank. The car was driven, and the engine was then shut off. Officials measured the amount of gas – standard Shell 89 octane – it took to fill up the tank.

How was this incredible mileage accomplished? Besides the weight, there are three significant factors at work, according to Heckel: the engine, the tires and the vehicle’s shape.

“Standard engines fire at the same time regardless of the speed,” he explained. “The engine was modified to have timing advance, allowing the spark plug to fire at different times in conjunction with the speed of the vehicle. This increases fuel efficiency.”

As for the tires, you won’t find them at the local auto shop. Measuring 19 inches in diameter and 1.5 inches in width, they are custom made by Michelin for very little rolling resistance.

“Combined with the vehicle’s aerodynamic shape and weight, these factors allowed the vehicle to cover ground with very little resistance,” Heckel said.

To achieve the light weight, the car’s frame was built from scratch using a composite material, carbon fiber soaked in epoxy resin. Molds were then used to shape the frame and harden it. To harden the material, an oven was needed, something that was not available on campus.

“C&D Aerospace in Santa Maria really helped us out with this part of the process,” said Heckel. “We laid the carbon fiber into the molds at their shop and used the oven. It worked out great.”

Surprisingly, nearly everyone can relate to the most challenging aspect of this project – and it was not developing the technology. “Organization was the biggest hurdle, keeping everyone on track and on schedule,” admits Heckel. “A lot of deadlines needed to be met.”

Many lessons were learned from the experience. One lesson has implications for everyone, according to Heckel. “High-mileage cars are a definite possibility in the near future – it’s just a matter of the public wanting them,” he said. “If the perception changes, the technology is there to make it happen.”

The Super Mileage Club is under the guidance of faculty advisors Joseph Mello, Peter Schuster and John Fabijanic. The current club was started three years ago by the Kempenaars, Ulrich and Nick Wilde. The last active Super Mileage Club at Cal Poly was in 1993. □