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Samohi Students Convert “Punch Buggy” into Electric Vehicle

By Team Marine (Electric Car Team)

www.teammarine.org

<http://www.teammarine.blogspot.com>

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Charged up and ready to go, Team Marine may be the first teen group to convert a gas guzzling car to run on lithium ion batteries for 100+ miles. Team Marine, a student run organization at SAMOHI, received a VW Super Beetle from the Poon-Fear family to raise awareness about tailpipe pollution. The project has been steadily progressing for roughly a year, and its completion is scheduled to be reached in one month if adequate funding for batteries is received.

The EV conversion process consists of removing the gas engine and its components. These are replaced with the electrical motor, motor controller, batteries, DC-DC converter, pot box, fuse with fuse block, etc. Among these, the batteries are the most important component of the car, as they store the energy that propels the car forward. The team is using lithium ion batteries due to their large energy density and convenient size- meaning they can pack a lot of punch in a small space. Unfortunately, the lack of funding is hindering the conversion process as the team struggles to fund the batteries that power the car.

Team Marine plans to use the car as an example for teaching people of all ages. The team has composed a manual explaining the steps involved in converting a gas powered car into an electric vehicle. The step-by-step manual with pictures is intended to help community members repeat the process. Additionally, the guidance of local electric car experts, notably Seth Seaburg of Trexa, Paul Pearson of Gas to Electric Conversions, Samohi's automotive teacher Dan Cox, Rick Sikes of the City of Santa Monica and Reverend Gadget of Left Coast Electric have provided invaluable feedback and suggestions from day one. The ultimate goal for the car is to serve as a template that future students and others can learn from. Once completed, the electric car will be a lesson plan on wheels, traveling to all local schools to raise awareness about reducing global warming emissions.

Team Marine will teach people about the consequences of tailpipe pollutants as well as solutions. The



Team Marine's "Car Team" from left to right: Ivan Morales, Angelina Hwang, Justin Tavaf, Cassandra Kliewer, Annie Wiesenfeld, Talal Alabdali, Kalon Cheung, and Patricio Guerrero



environmental problems which arise from the emissions are ocean acidification, climate change, smog, and black carbon. These matters directly affect global ecosystems and become more pronounced with increasing population size and the need for transportation. The world's living conditions and health are in rapid decline due to a reliance on fossil fuels. The electric car is one solution to these issues as it produces zero emissions. While it is not a perfect remedy, since the electricity used to power the car has some power plant emissions, EVs greatly reduce carbon dioxide emissions due to the higher efficiency of power plants. Also, as the electric grid gets greener with more solar and wind power, so will the EV.

As of late, the members of Team Marine have been busy presenting their lesson plan at Lincoln Middle School and John Adams Middle School to teach students about the effects of internal combustion engines and better alternatives, like walking, biking, public transport, and electric vehicles. If the project proceeds as planned, local institutions will soon be visited by Team Marine and its electric VW Beetle by March of this year.

