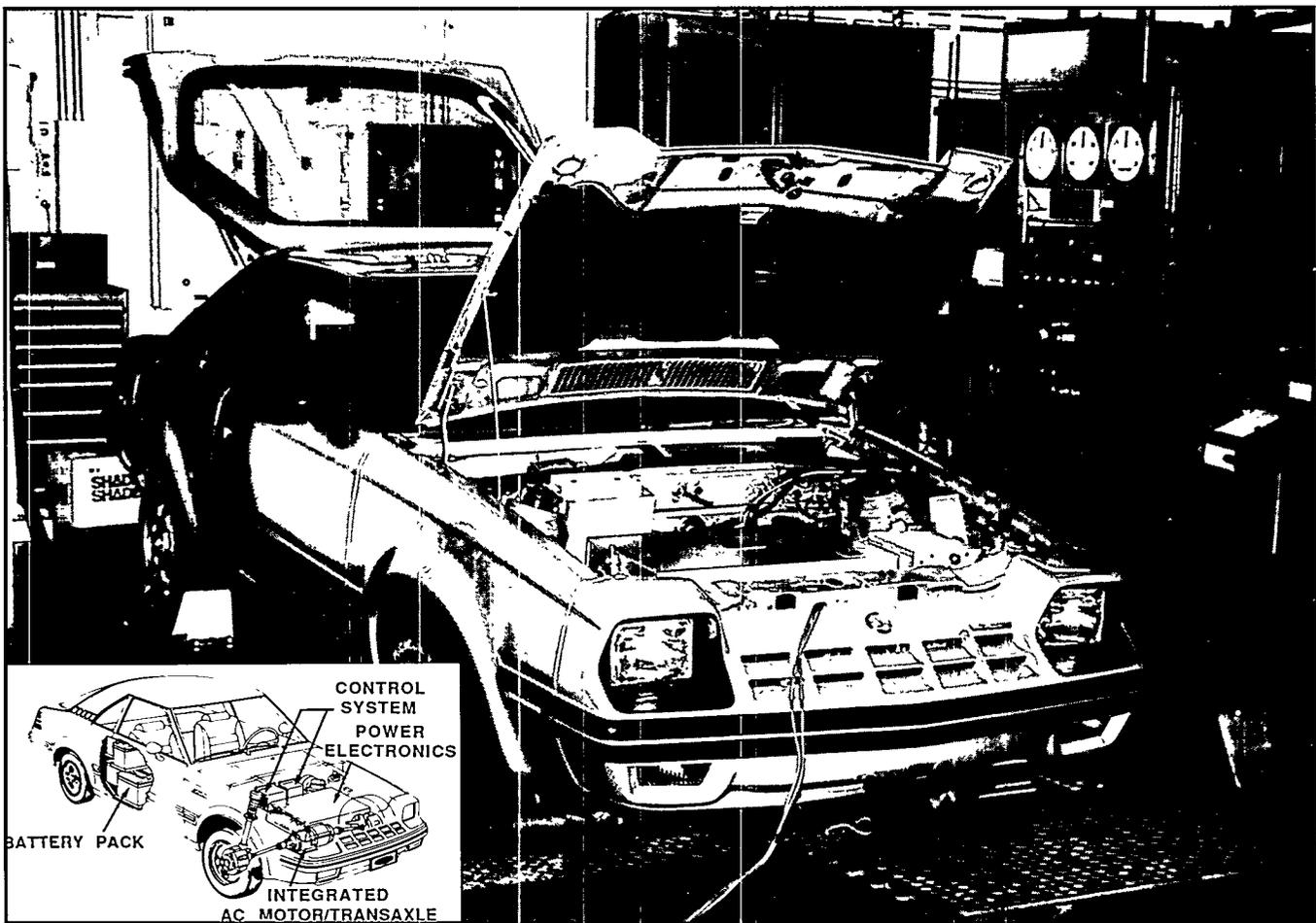


power generation systems has already occurred, and demonstrations of Stirling engine technology sponsored by other federal agencies and private sector firms are currently underway.

### Single Shaft Electric Propulsion Vehicle

One of the most successful of DOE's electric vehicle (EV) technology research programs was the ETX-1 project, conducted by the Ford Motor Company, General Electric Company, Exxon Research and Engineering, and Lucas Chloride EV Systems. Applying an integrated systems approach, this project advanced EV technology through the use of alternat-

ing current (instead of direct current) and zinc-bromine, sodium-sulfur, and tubular plate batteries. The ETX-1 vehicle is the first electric vehicle to demonstrate a useful range in excess of 100 miles. The ETX-1 powertrain met or exceeded its design objectives for energy efficiency, acceleration, gradeability and driveability. In comparison to earlier electric vehicles, such as the ETV-1, the ETX-1 demonstrates significant technological improvements such as a 50 percent weight reduction, a 40 percent reduction in size, and a 25 percent improvement in acceleration, without compromising efficiency. The ETX-1 research program has demonstrated that EVs can effectively compete with conventional vehicles in certain market segments. The project validated the use of the integrated sys-



**With the use of alternating current and advanced battery technology the ETX-1 electric vehicle demonstrated that EV's can compete with conventional vehicles in certain markets.**