



# THE Heartbeat OF AMERICA

66GM Sunraycer is a triumph of teamwork and technology. Projects like this are a stimulus to technological development that will lead to important practical applications for our customers. We also believe that the Sunraycer will be an inspiration to high school and university students. The Sunraycer's victory is just one example of the exciting technological exchange taking place today among the many divisions and subsidiaries of the 'GM family.' 99

> Roger B. Smith Chairman General Motors Corporation

### The World Solar Challenge

The GM Sunraycer won the inaugural 1,950-mile transcontinental World Solar Challenge race in Australia, finishing two and one-half days, or more than 600 miles, ahead of its nearest competitor. Twenty-five cars from seven different nations competed in the event.

GM Sunraycer completed the race from Darwin at the top of Australia to Adelaide at the bottom of the continent in an elapsed time of 44 hours and 54 minutes, averaging 41 miles per hour. Although unofficial, this was faster than the 35 mile-per-hour world speed record for solar-powered cars, set by Sunraycer on September 17, 1987 at GM's Desert Proving Ground in Arizona.

GM Sunraycer performed flawlessly over its five and one-half day race run, November 1-6, 1987. There were no electronic or mechanical failures; just three flat tires.

#### The GM Sunraycer Team

Sixteen different General Motors' organizations as well as AeroVironment Inc., and several other suppliers con-

tributed to Sunraycer's successful performance. The design, engineering, development, testing, transportation, race support and logistics for the GM Sunraycer were supplied by:

 AeroVironment, Inc.—Monrovia, California

#### **GM Organizations:**

- Chevrolet Motor Division
- Chevrolet-Pontiac-Canada Group Advanced Vehicle Engineering
- Delco Products Division
- · Delco Remy Division
- GM Advanced Concept Center
- · GM Advanced Engineering Staff
- GMC Truck Division
- GM Current Engineering & Manufacturing Services Staff
- · GM Design Staff
- GM Desert Proving Ground— Mesa, Arizona
- · GM Proving Ground-Milford, Mich.
- · GM Research Laboratories
- Holden's Motor Company—GM's Australian subsidiary
- Hughes Aircraft Company—GM Hughes Electronics subsidiary
- New Departure Hyatt Division
- Adam Opel, AG—GM's West German subsidiary

## GM SUNRAYCER

- Dimensions: 19.7 feet long; 6.6 feet wide; 3.3 feet high.
- Weight: 390 pounds; Gross weight with driver: 573 pounds.
- Speed: Averaged 41.6 mph during 44.9 driving hours over the 1,950-mile race.
- Construction: Aluminum tube spaceframe chassis; body of composite sandwich materials.
- Solar array: 90 square feet; designed and built by Hughes Aircraft; same type cells as used in satellites.
- Motor: 3 kw, 4 hp Magnequench brushless DC, weighs 11 pounds and was developed by the GM Research Laboratories. Magnequench magnets were manufactured by GM's Delco Remy Division.
- GM Sunraycer represents the development and demonstration of advanced technology as applied in aerodynamic design, lightweight structures and materials, high-efficiency batteries, lightweight electric motors, lightweight suspension and steering systems, and high-efficiency solar arrays and power electronics.

