



Rally drivers and computers take instructions from Julie Lovinger.

Speed doesn't decide the outcome of a rally. In order to win, a driver must be the most skillful — or the one whose navigator gives him the most accurate calculations and directions in following the route. Julie Lovinger, a research mathematician, is a rally driver's ideal navigator.

You see, every day Julie gives directions to computers on her job at the GM Research Laboratories in Warren, Michigan. And these kinds of directions debug programs, solve prob-



lems, or manipulate stored data. Julie designs programs for an interactive graphic system. In this system a number of conversational consoles (a TV screen plus type-

writer keyboard) serve as terminals for a large remote computer. Julie's programs enable the time-sharing computer to locate data and display information on the console. For example, a design engineer using the terminal may want to ask questions about stored data in order to solve a problem. The computer will answer the question using Julie's graphics programs. Her programs also direct the use of the

keyboard and "light pen" (an electronic pencil) in the designer's question and answer session with the computer.

Julie Lovinger is one of the team of GM computer-researchers that solve problems in areas such as design, safety, and automotive emissions. With the help of Julie, and other interesting GM people, more drivers will enjoy the benefits as quickly as possible.

General Motors
Interesting people doing interesting things.

NOTE: This advertising is being sponsored by General Motors in several youth publications. It is hoped that the subjects featured will serve to increase teenager interest in scientific studies and can be used, perhaps, to show how the things your students are learning are utilized in actual industrial activities. Reprints of this ad are available upon request. Simply write to General Motors, Advertising & Merchandising Section, P. O. Box 5446, Detroit, Michigan 48211.