

#65 120

SPINOFF 1978

*Outtakes available*



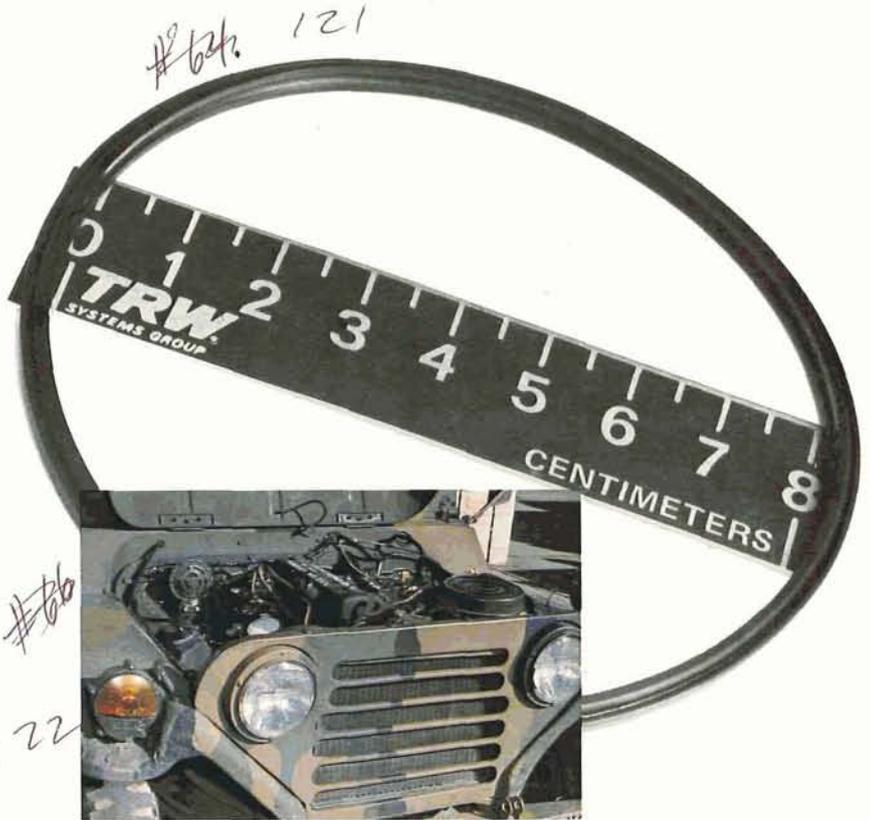
**Heat-resistant Paint** The racing car shown is one of many coated with an inorganic paint that protects "hot parts" of automotive vehicles. Developed and manufactured by Sperex Corporation, Gardena, California, the durable, heat-resistant paint is used on car and truck exhaust systems, firewalls, brake drums and engine manifolds.

NASA technology contributed to development of the paint. Sperex was provided a technical support package detailing the research of Goddard Space Flight Center on long-life inorganic coatings. The information helped Sperex perfect its own formulations.

**Oil-saving Seal** Driven under difficult field conditions, the Army Jeep shown went more than 22,000 miles without an oil change in a test conducted by the U.S. Army Mobility Equipment Research and Development Command. Key to this exceptionally long oil life was a set of piston ring seals made of a new synthetic rubber formula called RC-34; the seal pictured, photographed *after* its arduous Army trial, shows no signs of deterioration. The seal and the RC-34 material, which may soon be available for use in the family auto, were developed by Ramsey Corporation, St. Louis, Missouri, a division of TRW Automotive Worldwide.

The oil in an automobile engine must be replaced every few thousand miles not because it wears out but because it becomes contaminated. The contamination sources are gasoline and combustion gases which blow by the piston rings to mix with the oil, reducing the oil's ability to lubricate properly. Seeking to prolong oil life by eliminating "blowby," Ramsey Corporation looked for a better way to seal piston rings and used NASA technology as a departure point. The parent company TRW, under contract to NASA's Jet Propulsion Laboratory, had developed seals and bladders from a type of material called elastomers which were designed to withstand the environmental extremes of interplanetary flight. That effort formed a knowledge base for research which culminated in Ramsey's RC-34 elastomer.

The RC-34 ring functions as a sealing gasket between the metal piston ring and the piston. The synthetic rubber ring is designed so that gas pressure increases the sealing effect. As the outer metal piston ring wears under long



use, the RC-34 seal expands to fill wear gaps and therefore maintains a tight seal to prevent blowby. Still improving the design, Ramsey Corporation hopes to achieve automotive oil life of 30,000 miles or more. That would save about five of every six quarts of oil put into an auto engine during its lifetime, an extraordinary benefit to the family budget and to national energy conservation.