The Museum of Modern Art

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THE RACING CAR: TOWARD A RATIONAL AUTOMOBILE

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Supplementary Wall Label

The automobile driven by the ordinary citizen is far from being a rationally designed object. This is not only because automobiles, like other artifacts, are subject to the designer's subjective preference for one form rather than another, but also because the set of functions the automobile must serve cannot be given a single rigid definition. We want to be able to drive comfortably at high speeds. We associate comfort with one kind of form -- usually large and box-like; and speed with another -- usually curvilinear and low.

The relation between form and function is often psychological rather than real, and the effectiveness of certain highly specialized designs reinforces and often determines such associations. Thus, the GOLDENROD (1, 2), because of its extraordinary simplification of form in order to minimize air resistance, produces the compelling and pervasive image of an automobile as a kind of projectile. Designed and built by the Summers Brothers, the GOLDENROD holds the world's land speed record for wheel driven vehicles. It is powered by four Chrysler engines and has reached a speed of approximately 409 miles per hour.

Faster still is the "SPIRIT OF AMERICA" (3, 4), sponsored by the Goodyear Tire Company and driven by Craig Breedlove at speeds over 600 miles per hour. Although it holds the world's land speed record for vehicles that run on wheels, it is not a true automobile. The Federation Internationale de l'Automobile has created a special category for this vehicle because it is jet-powered, like an airplane. Its chief contribution to automobile technology is that it required the development of tires capable of withstanding such high speed.

The automobile as rocket ship or guided missile is an image to which children of all ages are readily attracted, and the American automobile industry has encouraged this preoccupation in a variety of ways. Of particular interest is the

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program established by the Craftsman's Guild of the Fisher Body Division of General Motors, which awards prizes both for the design of "dream cars" and the craftsman-like quality of the models by which they are presented. A recent winner in the Junior Division of the Guild's competition was Dale Gnage, 15, who earned a $5,000.00 scholarship for his "sports sedan which features a unique luggage compartment that can be used as a children's play area" (5).

For a slightly older age group, building and racing automobiles is a pastime that absorbs even more energy than designing "dream cars". The "dragster" (6) is built to obtain maximum acceleration over a standing 1/4-mile distance. Engine and driver are set well back for balance, and huge slick tires are fitted for greater traction. Engines are invariably highly supercharged, much-modified versions of the largest American production models available -- most often Chrysler "hemi-head" types set up to run on a fuel mixture of alcohol and nitro-methane. The best of these cars can accelerate from a standing start to something over 200 miles per hour within 1,320 feet.

Building and handling dragsters is perhaps marginal to the development of automobile technology, but it does at least develop thousands of young drivers and mechanics who know exactly how a car is made and how it operates. Their expectations regarding performance are naturally more sophisticated than those of the layman, whose curiosity about automobile design is likely to be met with such characteristic studies as the MAXIMA (7), which is designed to operate "probably faster than the speed of sound -- the MAXIMA is the product of research into the application of radical missile shapes to automobiles. At present this 3/8 scale model, developed in the Ford Motor Company Styling Center, is purely speculative from the point of view of both its styling and proposed function. However the car conceivably could serve as a test vehicle for the evaluation of automobile components at extremely high speeds and under controlled conditions. The three-wheeled model is designed for jet thrust propulsion."

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Inquiries into the technological problems of designing rocket automobiles are perhaps amusing, but even though no one takes them very seriously they do contribute to the fantasies with which popular understanding of automobile design and function are beset.

It is neither possible nor desirable to separate fantasy from the solution of functional problems, but no design solution for an automobile may be considered for excellence unless it first of all takes into account the primary requirements of function. The variety of ways this may be done is suggested by the cars in this exhibition.

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