



News Release

North American Automotive Operations, Dearborn, Michigan 48121
Telephone: (313) 322-1300

IMMEDIATE RELEASE

A concept car considered to have the ideal aerodynamic shape has been developed by Ford Motor Company.

Called Probe I, it was designed as a typical car of the late 1980's or beyond with projected fuel economy of 39 miles per gallon at steady-state driving of 55 miles per hour. It was introduced at the Frankfurt Motor Show, Frankfurt, West Germany, September 13-23.

The sleek-surfaced car was designed in Ford's Dearborn, Mich., Design Center and underwent extensive testing to achieve an aerodynamic "drag" rating of .25 -- lower than any American car on the market today (drag measures a car's wind resistance).

The car is a three-door hatchback about the size of a Ford Mustang or Mercury Capri. It seats four people and would be powered by a four-cylinder engine with turbocharging capacity.

"Probe I's sleek shape makes it the ultimate aerodynamic car," said Donald F. Kopka, executive director of Ford's Advanced and International Design Studio. "It's a practical, feasible, packaged-for-people car of the next generation. The car has been designed realistically for a driver and three passengers, and should not be considered just another test exercise.

"Probe I was created through the close cooperation of three major areas of the Dearborn Design Center -- the Advanced and International Studio, the Interior Design Office and the Aerodynamics Department."

Because Probe I's aerodynamic efficiency makes it best suited to long-range, freeway-type driving, the car's interior has a modern, living-room atmosphere to eliminate the boredom of long trips. There is an electronic message center, providing important trip information; an electronic entertainment center, allowing riders to play computer games, watch regular television and send messages; the ultimate in stereo sound, and many other features.

A retractable instrument panel is coordinated with the opening and closing of the doors. Headrests are functional and electrically controlled, and the car can be started by a universal credit card which also can be used to buy gas and pay tolls.

Mr. Kopka said the name Probe I was selected because "the car is probing into the future with a dynamic new shape and overall design."

The silver-colored Probe I is 188.5 inches long, 72.8 inches wide, 49.8 inches high and weighs 2,750 pounds. Wheelbase is 105.1 inches.

The car is made of composite body panels, including extensive use of plastic alloys and thin glass. The aerodynamic effect even is carried out in the use of clear plastic wheel covers and plastic fender skirts to help keep wind drag at a minimum.

The application of aerodynamics to the design of automobiles has been intensified in recent years because of the resulting fuel-economy benefits. Through wind-tunnel testing, Ford design engineers have been working to reduce the air drag coefficient of vehicles, because a lower drag means less power is required to propel them, thus, requiring less fuel.

As a car moves through the air at 50 miles per hour (mph), the air velocity over the surface varies from zero at the "stagnation point" on the front bumper to about 70 mph as it accelerates over the hood and roof.

Changing velocities modify pressures acting on the surface, developing pressure differences. The imbalance of these pressures is the primary cause of the aerodynamic "drag," or wind resistance.

"A car's drag results from the size of its front, the density of the air through which it travels, its speed, and its 'coefficient of drag,'" Mr. Kopka explained.

"The car's overall dimensions, of course, dictate the frontal size. Nature decrees air density, and the driver chooses the speed. So, our designers and engineers can influence only the drag coefficient. That's a dimensionless expression for vehicle body shape efficiency -- the lower the better."

###

9/18/79