



A new name for a new car — very likely the first machine to lap Daytona at 200 mph. On the high-banks, the back straight at Riverside, Bonneville, Pomona's asphalt quarter, Woodward Avenue this super snake works — faster, more stable, safer than any car before. Aerodynamics is the key.

KING COBRA is the name.



(continued)



Larry Shinoda, the man whose thoughts are streamlining an industry, smiles at speed in his playroom.

The King Cobra will not be produced by Ford. You will not be able to go down to your local dealer, place an order and take delivery

It wasn't supposed to be that way. In the beginning, the idea was to beat off the challenge of the Dodge Daytona Charger and remain competitive in NASCAR when the bullet-nosed hemis began to zip around the highbanks. Larry Shinoda, Director of Ford's Special Design Center, Chuck Mountain and Ed Hall, both of Ford's Special Vehicles Engineering, made a false start and then regrouped. In this reflective period, Jacque Passino, quiet firm guardian of the company's racing fortunes, laconically suggested a Le Mans Mark IV Torino fastback, a kind of ultimate weapon in the stock-car war between Ford and Chrysler.

Larry Shinoda has been aiming at such a machine, a car for the track but also desirable for the street, ever since he designed the Monza Spider back in the early '60s at Chevrolet. A vehicle to show that proper aerodynamics and pleasing shape were one in the same, in fact were inseparable. That aerodynamics were critical in every mode of transportation, for every mode of travel. The time seemed ripe. Spoilers and, now, even wings were growing in profusion on the street—many were simply fashionable ornaments but the public's consciousness was stimulated.

Where the Daytona Charger had utilized a nose extension and a fixed rear airfoil, the King Cobra would have a completely redesigned hood and fender assembly bolted to a '70 Torino fastback body. Since the low silhouette of the winning Le Mans Mark IV exhibited very acceptable drag and lift characteristics, the car would not only be slippery but not require an additional wing—an important omission because drag increases with the cube of the velocity.

Essentially, the total drag on the King Cobra is tire holding resistance which is further subdivided into form drag, skin friction, induced drag and internal drag. Of these form drag is the most critical, accounting for nearly 70 percent of the total. Air separation around front corners and edges of the car generated turbulence which consumes energy. Projections like door handles, trim and mirrors disturb flow stability. The very streamlined shape of the Mark IV front end, plus keeping all foils off the Cobra body, delayed the separation factor significantly.

Skin friction drag is a function of surface area, representing somewhere in the magnitude of 10 percent of the problem. The inherent friction of air passing over something creates a sheer stress phenomenon in the boundary layer as air nearest the object's skin tends to slow and stick while air above races on less unimpeded. Of course, a turbulent boundary layer, with its higher fluid velocity generates greater sheer stresses than a straight Laminar flow so the plan is to eliminate any turbulence-producing sections.

Induced drag occurs as a result of vehicle lift; and the more the car lifts the more induced drag there is both vertically and horizontally. It is a self-escalating cycle. That

The Shinoda styling trust. From left; Harvey Winn, assistant designer; Ken Dowd, body design; Bill Shannon, senior designer; Dick Petit, design manager. All boss.



is why a shovel type front spoiler on something like a Boss 302 Mustang is imperative. While air is trying to raise the vehicle, it is also flowing into the radiator and engine compartment and other gases. The King Cobra's grille radiator opening was designed to produce minimum turbulence and avoid air-flow separation, lowering internal drag. Its carburetor intake was deliberately placed close to the base of the windshield for the same reason they've done it in NASCAR for years, it is the highest pressure area on the upper surface of the car. Optimizing duct opening locations by understanding high and low pressure characteristics is heady stuff.

Shinoda and his guys knew all this and proved it on their scale models. Chuck Mountain and Ed Hall had to turn it into full-sized reality bridging such legalities as headlamp height, turn and parking light location, bumper heights, license plates, carburetor clearance and proper cooling without destroying the aerodynamics. The total drag factor of the King Cobra must be several percent better than the '69 Talladega and with an inch cut out of the lower body was far superior to the normal Torino. The King Cobra, then, is one of the best aerodynamic vehicles ever conceived.

Getting through the air quicker and more efficiently was only one problem. NASCAR demands at least 3000 units of a single body style to be built, to qualify it as a production car; i.e., you have to race what you sell. Now 3000 units are not 500. You cannot fake it, once committed you must at least break even on the deal and hopefully turn a profit. You and I know that the sales possibilities of what amounts to a scaled-up Mark IV practically sag the mind. It's guaranteed gold in your bank account. Yet, although the price-analyzed King Cobra appeared a sound financial venture, the car remains a design study.

The thing to do, fans, is patently obvious. If you want a 429 C.j. K.C. (Cobra Jet, King Cobra), take pen in hand and tell the people at Ford Public Relations, Ford Division P.O. Box 608, Rotunda Drive at Southfield Road, Dearborn, Michigan 48121. For openers there have got to be 3000 of you out there who would like a full-sized Detroit sedan able to keep up with, well, maybe a P-12 Ferrari. After all, it's going to come along eventually, anyway. It's a better idea, right?

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The King Cobra could very well be the fastest production car ever built



Could you see yourself drawing up next to some guy on the freeway? In a King Cobra? It's right out of tomorrow. The rear is stock, but stock is ultra slick as is.