

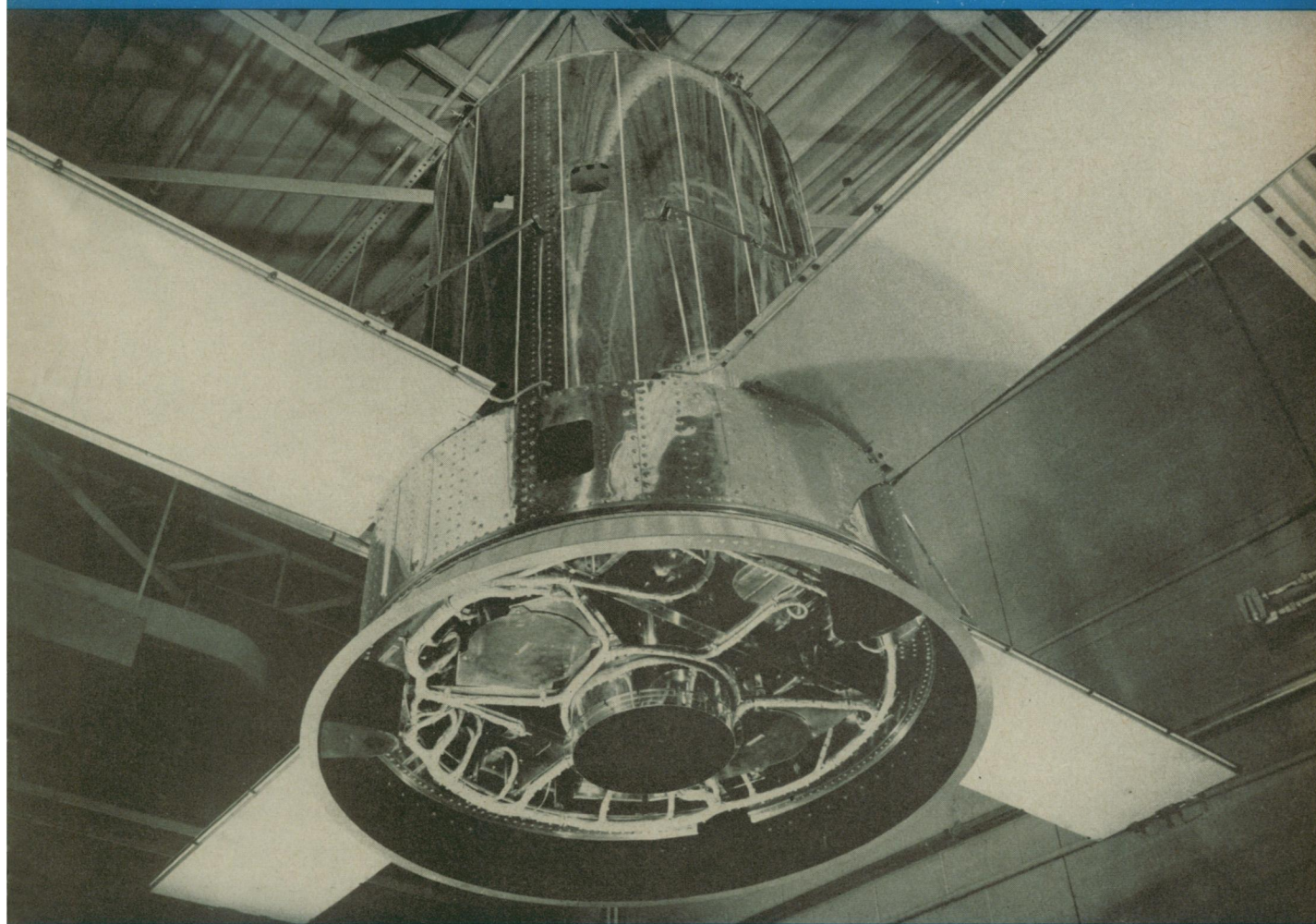
15¢
\$5.50 A YEAR

February 1, 1964

VOL. 85, NO. 5 PAGES 65-80

SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Republic Aviation

Space Stargazer
See Page 74

A SCIENCE SERVICE PUBLICATION



One of a series briefly describing GM's research in depth

HOW A CAR RESPONDS TO CROSSWINDS

A rocket engine is being used by an engineering research group at our Laboratories to study the effects of crosswinds on the directional behavior of passenger cars.

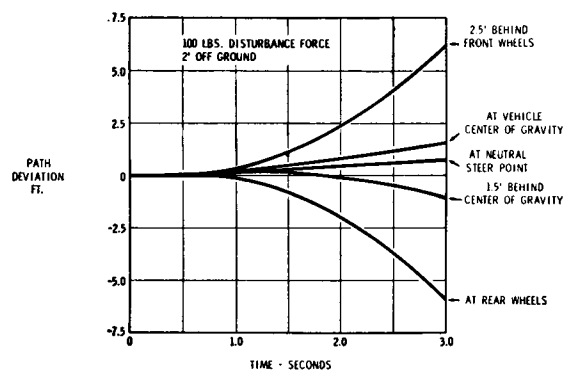
Mounted on the side of a full-size car, the lightweight engine can exert a maximum thrust of 200 pounds . . . a force equivalent to a 25-mph crosswind hitting a vehicle traveling 60 mph. Because a vehicle's aerodynamic center of pressure is a function of body shape, engineers—simply by shifting rocket engine location—have been able to evaluate the effects of body changes on a car's response to crosswind disturbances.

This flexibility of location is one of several advantages of the new system over previous attempts to study crosswind effects. Both force and time of the thrust is accurately controlled for each test run.

An important result of this work has been the experimental verification of theoretical equations of lateral motion. These equations form a mathematical model of the vehicle—a model we are now using in computer simulation of car handling.

This directed interplay of theory, experiment and analysis is another example of how GM engineers are working to find a better way—through research in depth.

General Motors Research Laboratories Warren, Michigan



Path deviation of a vehicle traveling