

Ford Motor Company

Intra-Company Communication

February 3, 1965

TO: Mr. Fletcher N. Platt

cc: Mr. Michael Ference, Jr.
Mr. J. E. Goldman
Mr. A. L. Haynes
Mr. James Knowles
Mr. E. D. Marande

From: F. J. Hooven

I have always been an enthusiastic advocate of anti-skid brakes, but I find that our engineers in general share the opinions expressed by Stonex of General Motors in your attached copy of the presentation to the AAMVA Committee. I would be forced to agree with them if it were found that all anti-skid devices exhibited the same characteristics as that tested by Stonex. However, in an exhibition film loaned to us by Hermann of General Motors there were shown a series of English tests run on wet pavement in which it was claimed that there were shorter stopping distances obtained with the anti-skid system than with locked wheels.

Skidding can be prevented without the capability for steering control by a relatively simple system which prevents locking the back wheels only. This avoids slewing and consequently avoids roll-over and sidewise impacts. It also involves, at the worst, a minor increase in stopping distance. In order to maintain steering control however all four wheels must be prevented from locking. This kind of a system is much more complicated and costly, and it also involves a greater risk of increasing the stopping distance. It would be useful to us if you and the Haynes group could answer the following questions:

1. What is the relative safety value of a system which prevents skidding but does not maintain steering control as compared with the system which does both?
2. Would the average driver who panics on the brake pedal be able to make any good use of steering control if it were maintained for him?

In response to your request we seek your agreement on the following recommendation for early action: That we proceed with the development of a rear wheel only anti-skid device which will prevent skidding and slewing but which will not maintain steering control.

In support of this recommendation we cite the following:

1. The rear wheel anti-skid device will substantially accomplish your expressed objectives of recognition by public and official agencies and favorable effect on the number and seriousness of traffic accidents.

2. The recommended two-wheel-only system is relatively low in cost compared with the four wheel system.

3. The time and money required for the necessary research and development is much less for the two wheel system than the four wheel system.

4. The two wheel system involves at the worst a much smaller loss of stopping power than the four wheel system.

5. There is some question whether or not the majority of drivers would benefit from the maintaining of steering control.

At this time there is insufficient knowledge of the behavior of tires to answer the questions which relate stopping distance to lateral control. We prefer to conduct more fundamental investigations into the effects of wheel slip on stopping power and lateral transmission of forces before we decide whether or not to recommend the design of an all-wheel non-skid system.

F. J. Hooven

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