

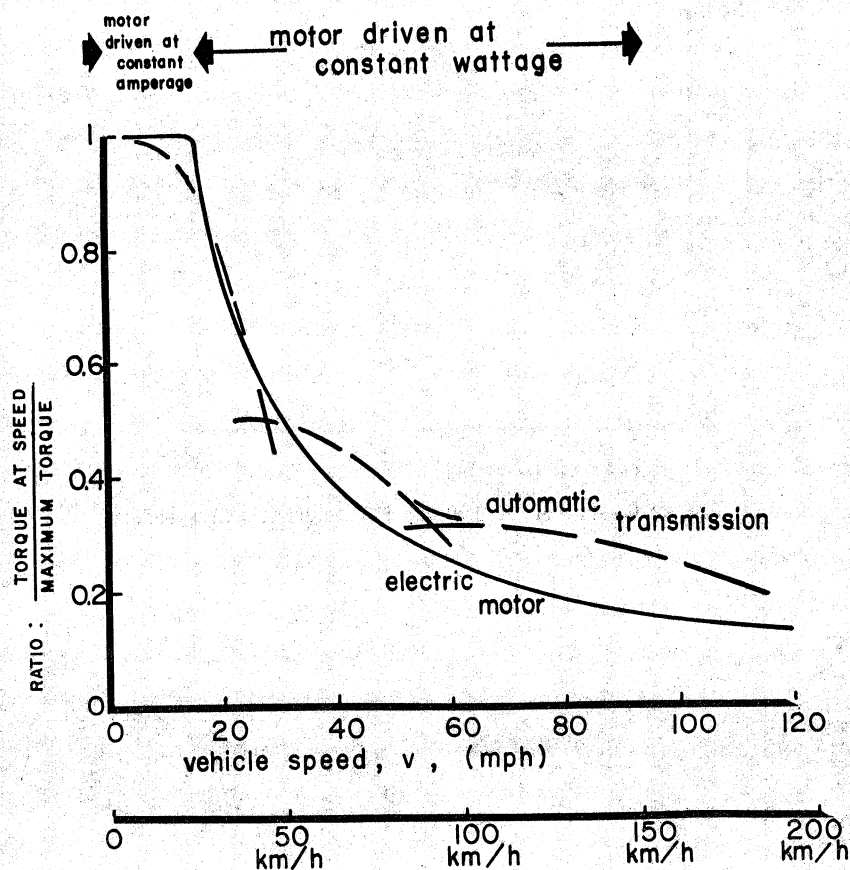


FIGURE 5.—Wheel torque versus speed characteristics of conventional automobiles and constant-power electric-motor-driven cars.

The tire-rolling drag force of passenger car tires is between 0.01 and 0.02 of the curb weight and increases with speed. For good quality, properly inflated tires (the lower bound of the band in fig. 6), the rolling tractive force⁴ is about

$$(0.01 + 5 \times 10^{-5} v) \times W \dots \quad (3)$$

The aerodynamic drag force at 60 miles per hour of various 1960 model vehicles is shown in figure 7, indicating that this resistance for recently styled automobiles may be assumed to be

$$30 + 0.015(W + 150) \dots \quad (4)$$

where 30 pounds is the drag force at 60 miles per hour of a driver's body reclining, as in the car seat, and 150 pounds is the weight of the driver.

⁴ R. D. Stiehler et al., "Power Loss and Operating Temperatures of Tires," Journal of Research (of the National Bureau of Standards), vol. 64-C, No. 1, 1st quarter, 1960, fig. 8.