disc brake rotors. New dynamometer test procedures were developed to efficiently perform these tests. The candidate linings were burnished, then applied 100 times at each of a sequence of rotor temperatures. The friction, wear, squeal, roughness and groan properties of the linings were recorded for each test condition and the overall cast iron wear of the rotor was measured. Rotors with two different rubbing surface wall thicknesses and three different fin configurations were tested to determine cooling rate and effect upon lining wear rate for a prescribed stopping sequence.

At the request of the Advanced Chassis Department, the friction and wear behavior of a new prototype disc brake pad formulation (Bendix D-7131X) has been examined on the FAST machine. The material is essentially an iron wire-graphite composite held together with about 10% of a resin binder. The material exhibits fairly good friction and wear behavior; however, there is a slight increase in the coefficient of friction with temperature which could result in brake temperature imbalance. The material showed a tendency toward brake squeal at rotor temperatures above 500°F. The friction level is low at ambient temperatures with high humidity, so the parking brakes may develop inadequate holding capability and high pedal efforts on the first few brake applications may be experienced.

B. Disc Brake Roughness

Car Engineering requested assistance in solving a disc brake roughness condition exhibited by the initial production of 1972 Thunderbirds. Of the two lining suppliers, Delco 5490 provided definitely greater roughness although some roughness was found with the Bendix 7133 linings. Rotors and linings from Wixom tests were evaluated on our brake dynamometer. Delco linings produced about 60% greater torque fluctuations than Bendix linings. This roughness became significant above 500°F rotor temperature and with repeated use produced some rotor coating.

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