



Memorandum

To: Howard County Sheriff's Department
ATTN: Sheriff Talbert
1800 W. Markland Ave
Kokomo, IN 46901

From: Vehicle Maintenance

Date: 25 May 04

Re: Patrol Car Brakes

Sheriff Talbert:

I'm writing to let you know about our experience with braking problems on our patrol cars. All of the incidents were a result of heating of the brakes during pursuits. Perhaps you will find this information useful.

To get a better understanding of the problem, I have been riding along with our officers. During one dispatch the officer I was riding with used her brakes in four distinct applications—she did not ride her brakes. On the fourth application we experienced severe brake fade coupled with intense oscillation of the steering wheel due to the brake rotors warping.

The next day I drove the same car and the brakes worked perfectly. I was surprised there was no pulsation in the pedal or oscillation in the steering wheel. At that time I knew we needed to find a better brake system.

Command Automotive provided the better brake system. According to their information the Indiana State Police is one of their customers. I've enclosed a partial listing of their references.

I ordered several sets of rotors from Command Automotive and installed a set on a patrol car. I only told Major Smith which car had the new rotors. Subsequently we took that car and one other car (same make and model) to the Kokomo Airport to evaluate the different rotors. Neither officer driving the cars was aware of which car had the new rotors.

Chief Ricks and Major Smith each rode in the cars while they accelerated to 60-70 MPH and on command executed emergency stops. The technique used was for each officer to press the brake pedal with both feet and let the ABS modulate the brakes. The cars ran side by side and braked on visual signal. They were able to use the taxiway centerline as a visual lane reference.

Initially each car stopped relatively quickly (less than 180 feet). As the brakes began to heat up the car with the Command Automotive rotors consistently stopped under full control while the car with our normal replacement rotor experienced brake fade and had difficulty maintaining a straight line during the stop. We then switched drivers and let them experience the other car's braking characteristics.

Each officer preferred the Command Automotive rotors over our standard rotor. These rotors totally eliminated the oscillation warping rotors induced in the steering wheel and the car consistently stopped in a straight line under total control. Not only are these rotors heat resistant, the distributor also claims that they will last up to 300% longer. Obviously, I can't verify that claim yet but even if they don't we are satisfied with the better braking action and vehicle control they provide to justify the additional expense.

It is our intention to replace all rotors on patrol cars with the Command Automotive rotors. Currently the only source for the rotors is from the distributor; however, Kurt at Kokomo Auto Supply (457-4433) is working to become a local distributor of the rotors. Command Automotive provides rotors for all police package vehicles.

Please feel free to contact me, Chief Ricks, or Major Smith if you have any questions.

David J. Wallace
Director, Central Garage
dwallace@cityofkokomo.org
765-456-7561
765-456-7547 (fax)