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2007 JUL -6 PM 12: 29

27 June 2007

National Highway Transportation Safety Administration
Office of Defects Investigation
1200 New Jersey Avenue, SE (West Building)
Washington, D.C. 20590

Subj: Design Flaw, Disk Brakes, Front, 2001 Dodge Dakota 2WD

Ref: Parts page from Daimler / Chrysler, 002-Front Suspension, part #13

History: My son and I own a 2001 Dodge Dakota, 2WD which he purchased new. It now has only 72,000 miles registered on the odometer. Last week he had the occasion to apply his brakes, when suddenly and without previous warning, his vehicle pulled sharply to the left. There was NO previous telltale signs of brake degradation, wear, or failure, or other potential abnormality which would alert him to a very dangerous malfunction.

When he arrived home, he jacked up the vehicle, set it on stands and removed the front wheels in order to inspect the brake pads, rotors and calipers. We also removed the left and right calipers assuming the right caliper was inoperable, but also thinking it prudent to replace both left and right calipers, rotors and pads. However, upon further inspection, the pads did not indicate unusual or appreciable wear. The rotors were not gouged or excessively worn nor did they seem to be out of round or flat.

What we did find during this inspection truly shocked us and leads us to believe there is a severe design flaw in the braking system of 2WD Dakota and Durango vehicles spanning several years of production. I shall attempt to explain our findings, but please excuse us for using "lay-mans terms" as we do not have a Dodge Parts Catalog identifying the exact or proper Daimler Chrysler nomenclature identifying each part at our disposal.

AA 7/9/07

Background: These braking system include a "Caliper" with piston which is secured to the body of the "Knuckle" identified as part # 13 of enclosure (1). (It is important to observe that the knuckle is identified under the "Front Suspension" Section of the Dodge Parts Lists and not under the "Brakes Section." Accordingly, any problem with it (them) would therefore fall under the suspension category.) The Caliper is held in place by two (2) hardened slide bolts which allow lateral movement of the caliper as the brake pads wear and also allowing it to 'slide' when brake pedal is depressed and hydraulic pressure is applied to the caliper piston to compress or sandwich the brake pads against the rotors, and therefore applying braking friction. Tremendous "rotational" force is thereby applied to the caliper, brake pads and backing plate, which attempts to make the pads rotate in the rotational direction of the rotor and wheel. The only item which prevents the pads from being driven out of the caliper assembly are two 'lugs" or slide bars cast as part of the "Knuckle" assembly, The top lug for "top Forward rotation" or forward vehicle movement and the bottom for top-rearward or reverse. (Please note that the knuckle also holds the axle shaft and spindle for the hub and wheel assemblies in addition to the upper and lower ball joints.) As a result of this mal-design, as the brake pads wear, the backing plate of the pads "slides" on those protruding "lugs" or slide-bars. Further, these lugs or slide-bars are flame or case hardened meaning that the wear surface on the lugs or slide-bars may only be hardened a very minute fraction of an inch deep. Constant braking, vibration and the rotational frictional forces exerted by the pads rubbing against the rotors, the hardened surface of the lugs or slide-bars is being worn away in a "wedge" or wide "U" shaped pattern, which creates a severe hazard to life and limb as the vehicles suffer the wear and tear of daily braking.

The more "stop and go" traffic condition the vehicle is subjected to, the greater the hazard. Every time the piston in the calipers compress the brake pads (or attempt to) against the rotors, the pads are forced to move in the direction of the rotation of the vehicle's wheels. The backing plate on the pads are stopped from rotating by the "lugs" or slide bars on the "Knuckle", that backing plate is constantly and continually hammered and driven into the lugs. The harder the brakes are applied, the harder the pad backing plate is driven into the continually wearing lug or slide-bar. The wear is gradual, therefore little warning occurs that the problem exists.

The Problem: The wear becomes so critical that at some point, when the driver applies his or her brakes, brake failure occurs. The depth of the wear on the surface of the "lugs" or slides continually increases each time the brakes are applied, which ultimately inhibits or worse, prevents lateral movement of the brake pad and prevents the pad from being compressed against the rotors for braking in-part because the contact ears of the pad backing plate can NOT ride up and over the valley created (or worn) in the slide bar of the knuckle.

The harder you apply brake pressure, the greater the force driving the pad backing plate into the worn soft spot making the worn area even deeper. The consumer is unaware that a catastrophic accident is eminent, as it is only after realizing that you have no brakes when needed that something is amiss So, when you need your brakes at the worst of times, you are left with a situation where the pads are **prevented** or **restricted** from contacting the rotors because of the groove, even though the calipers are operating properly and the rotors and pads are in excellent condition.

Further, because of brake system design, it is quite possible the brakes could be delayed from engaging because of this wear and resulting in the driver "rear-ending" the vehicle in front of him, because the backing plates could not ride up and over the wear spot in the ear or slide bar. Further, this faulty design could in fact cause a delay in braking followed by a locking of the front brakes should the driver "pump" the pedal. the front brakes to lock if the brake pedal is "pumped" on icy or wet roads because the pressure to the pad backing plate is relieved, it will permit the plate to jump over the worn surface of the lug or slide bars, and lock up the brakes and allow the vehicle to skid into a vehicle before him; a pedestrian or in the event of the right side malfunction, cause the vehicle to careen into an oncoming line of traffic. This is what occurred with my son's Dakota.

This past Saturday, June 23rd, I visited the local Dodge dealership to both seek info on recalls or service bulletins addressing this problem and inform them a problem appears to exist. Nothing was listed. The parts department told me that new knuckles would cost $675.00 each (ouch). Doing the work myself would require an outlay of nearly $2,000.00 and if the dealer did the job, I'd have to take a second mortgage to pay for it.

On the way home, I again experienced another slight delay when applying the brakes in my 1999 Dakota, followed by a slight shudder and then a "chirp" - skidding of the front wheels. The very recent experience with my Son's 01 Dakota served as a severe warning to me so I drove home very carefully (less than 2 miles from the "chirp"- Skid. Once arriving home, I proceeded to inspect the brakes on my 99 Dakota. This investigation revealed the very same conditions identified above in the 01 Dakota. This was not a good sign. Upon discovering the "flaw" and not wishing to expend the outrageous price for new knuckles, I sought assistance from several used parts facilities. In every instance, the lugs on the knuckles revealed the same defect. The operator of one, (Highway 12 Auto in Richmond, IL) informed me that he too had this problem with his Jeep. It appears that this problem is widespread.

On June 18th, I called the consumer hotline at Daimler Chrysler to both seek advice and inform them of this potential hazardous situation. The person I spoke to, "Jeff" at 1-800-992-1997 was totally unresponsive and tried to lecture me that the brake pads rode on the caliper and not the slide bar or lug on the knuckle. It is clearly obvious even to the most casual observer that he did not know of what he speak nor did he know his product. His only comment was that there was only a 36,000 mile warranty on the vehicle, which is true. However I reminded him that this vehicle has a Seven Year 100,000 mile (7/100) warranty on the engine and drive train and it was therefore assumed that Daimler / Chrysler surely intended the design of these vehicles to last longer than a paltry 36,000 miles.

It was my belief that Chrysler / Daimler Corp. would be most interested and concerned when a consumer identifies a potential for great liability because of an unrealized design flaw. A reasonably intelligent person, I think would pass this information and owner info to their safety division for investigation and analysis to determine if indeed a broad based product safety problem exists.. I guess I was mistaken,,,, and that's why we need N.H.T.S.A.

Additionally, the problem is also evident in Dakotas with manual / stick transmissions. Parking on a hill requires the driver to place the transmission in gear when parked along with the parking brake. To start the engine, the owner is required to depress the clutch pedal to start the engine *(continued)*

and the brake pedal to prevent movement of the vehicle. Should the vehicle attempt to roll forward, the pad backing plate is driven into the wear spot and since the engine has not yet started thereby creating vacuum to operate the vacuum assist, there then is insufficient hydraulic pressure available to force the backing plate out or up and over the worn spot or wear valley, resulting in a time lag before the brakes are actually engaged. I shudder to think of the number of these vehicles which have rolled forward or backed into another parked vehicle, or worse, over the side of a hill with children embarked.

Further background: On April 19th, I had the unfortunate experience of "rear-ending" another vehicle on I-294 in "stop & go" rush-hour traffic two miles north of Chicago's O'Hare Airport. I was traveling between 20 and 25 MPH, leaving 2 ½ to 3 vehicle lengths of space between myself and the vehicle ahead. When I applied my brakes, a delay in braking occurred, followed by what can be best described as a slight shudder of my 1999 Dakota, followed by wheel lock up. The roads were wet with an oily residue as a result of one of the mid-west's infamous late spring early summer downpours. I didn't give it much thought at the time and just accepted the citation for failing to leave more space between me and the vehicle ahead of me. I accepted it, after all it was my Dakota which slid into the the other car. Please realize that in October I will celebrate my Sixty Fifth birthday and this was the first accident I have ever experienced. I did not dawn on me at the time that there were demons lurking in the brake system. I now firmly believe this unfortunate accident was not my personal fault.

I'm confident that if a survey were taken with both owners and various repair shops specializing in brake work, one would be hard pressed to find any who are aware of the problem. Most "mechanics" would merely replace the calipers, pads and rotors. All this does is reset the backing plates back to the beginning point of the wear on the slide or lug. After a few thousand miles as the "new brake pads" became worn, the backing plate would continue to wear the lug or slide until the unfortunate point in time when the motorist needed his brakes, he wouldn't have any.....

Conversations with several other Chrysler product owners revealed that this problem may cross into the Jeep line of vehicles too. I believe that I have identified a severe and critical safety concern which merits immediate research and investigation.

I believe that a clear and present danger to the public in the design of the brake system of these vehicles exists. It is quite possible that a severe head on accident could occur if the right brake failed pulling the vehicle into the oncoming lane on two-way streets or highways, or into a group of children at a school bus stop. Only a full investigation could reveal the unsavory statistics.

I therefore respectfully request that N.H.T.S.A. implement a full and unbiased "Defect Investigation" to address this problem soonest. The safety of every citizen is of paramount importance. It is therefore imperative that we reduce the potential for great loss of life , limb, and property.

Please feel free to contact me at my home [redacted] or via U.S. Mail. The courtesy of your reply would be most appreciated.

Respectfully, I remain

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Please note; In the older Chrysler products, the brake pads were secured in the calipers and rode on a slide surface machined into the calipers themselves which permitted both lateral movement of the pads and the anti-rotational effect. This was a very sound, tried and true brake system. When repairs are needed, after-market parts are widely available at reasonable cost.

We are not anti Chrysler bashers, for between us we own a 79 LeBaron, 82 Cordoba, 58 Dodge Sierra, 99 Dakota, and the 2001 Dakota. My previous Chrysler products included a 50 Dodge Wayfarer, 54 Dodge Caronet, 60 Dodge Pioneer, 67 Dodge Caronet, 69 Chrysler New Yorker, 71 Plymouth Satellite, 77 Dodge Power Wagon, 86 Dodge Aries, 87 Dodge Aires, 90 Dodge Monaco and a 91 Dodge Monaco. One might say that product loyalty is evident.

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