# Brakes Are Not Just a Given

***By Ron Henningsen***
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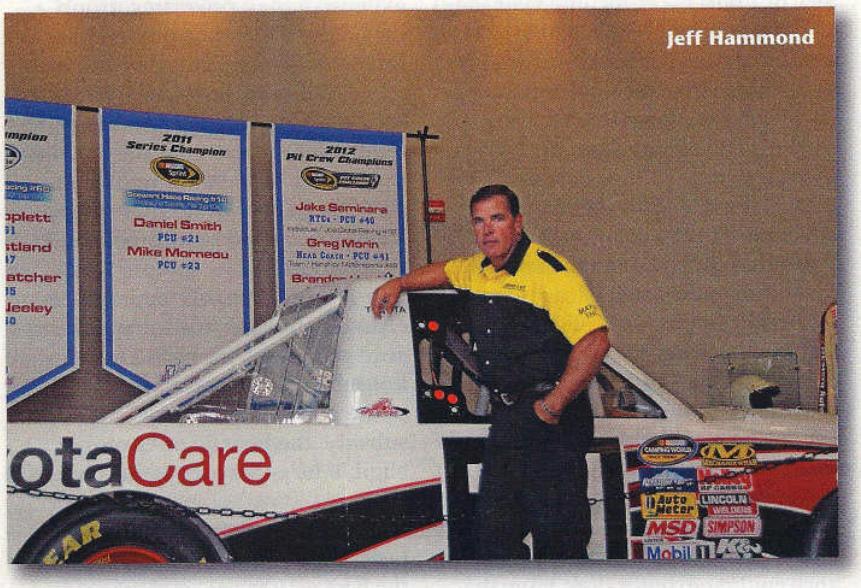


Instead of writing my normal type of article this month I was fortunate to be able to interview an industry icon, Jeff Hammond, who has a firm grasp on the brake side of our business. He shared his knowledge and experience over many years of involvement in the repair, parts, racing and sports-broadcasting businesses. Jeff is not just another talking head. He actually has worked on vehicles, machined drums and rotors, sold parts and gotten dirty working on brake systems.

**Q** From your many years in the industry, including your experience as a mechanic and doing general repairs in the racing industry, and your involvement with manufacturers etc., what have you seen that you would consider the most-important development in the area of brakes?

**A** The recognition of the fact that brakes are not just a given. I think for a long time not only the consumer but even the people who worked on cars took brakes for granted. Technology has come a long way. I know when I worked in the auto-parts store I was young enough to understand the difference between drum brakes and the introduction of disc brakes and the evolution of them and how I think originally there was a misconception of the fact of a disc brake – the size it needed to be to make a car stop vs. the comparison to a drum brake. I think I've seen a lot of the technology that has evolved to the point that today the brakes are not only an important part of the car but have also become, I think, a part of the styling of the car. Today we have wheels that let you see the brakes. Think about a

Corvette. You might just call it a part of the styling that goes into it – this revolution and the evolution of taking something that was ugly and trying to hide it and turning it into something that today not only makes the vehicle owner feel better but enhances the safety of it and the beauty of the car.

**Q** Obviously, you are very well known for your involvement for many years in racing. What have you seen that has come out of the racing industry or development of brakes within the racing industry that has carried forward to either OE manufacturing or automotive aftermarket brake repair?

**A** Again, that is going to be a question that is almost a little bit tricky, because when you come from where I did originally with drum brakes and early development of rotors and even the pads themselves, one of the things that I think in recent years has been a challenge for racers – and I think because of that challenge for us that we've been able to help the regular passenger cars – is the development of a lining that doesn't have to have asbestos in it. Originally when we first started servicing brakes and especially disc brakes, we had a lot of asbestos in the lining development itself because that was the way we dissipated heat and made the brake pad last longer and not damage the rotor. Because of the fact that that went away what was eventually developed and brought to us in racing then was utilized on passenger cars to give them more-efficient grip and longer-lasting brake pads and to do less damage to the rotor itself. The compatibility of matching a brake pad to whatever material is in a rotor is very critical also, because if one is too aggressive it can damage the other. If you have a too-hard pad it tears up the rotor. If you have a too-hard rotor the pad is not effective and you do not have good stopping power. The clamping effect does not come into play like it needs to. Also, I think the balancing of the brakes – too much front – with front out, too little rear; you don't take full advantage of getting total stopping power. All of this has been an evolution that I think has transcended into the manufacturers' notebook and they've done a better job of developing better brakes because of what we in racing needed to do and what we were learning along the same lines.

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TECH TIP

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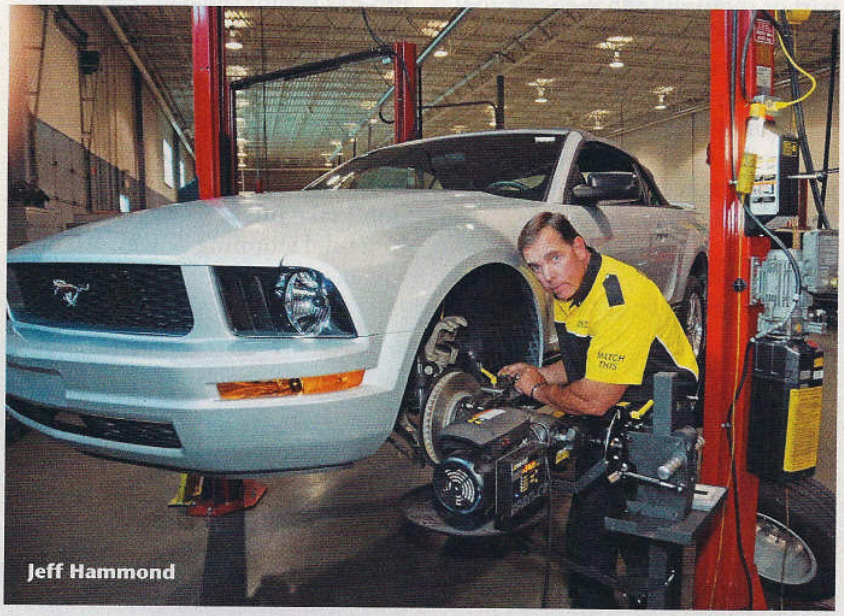
# Technically Speaking®



Jeff Hammond

## Brakes Are Not Just a Given

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**Q** Obviously, you own one or two "civilian" or regular cars that you and your family use. When these cars need brake-repair work and you take them into a repair facility, what are you looking for in brake repair?

**A** To be able to get my brakes back to what they were like when the vehicle was new. That's the best of the best. When you buy a vehicle, that's the matched rotor-and-pad combination that's going to be the most effective and efficient coming right off the assembly line. Whenever I get to the point where I've worn out those two components I want to try to restore them to like-new performance. By doing so and understanding my background in racing I want this to be done correctly. I understand that as a vehicle gets older it gets runout because of the bearings. They get worn. Everything gets a little bit misaligned. That hampers the performance of a brake and also damages the life expectancy from that point on, so with a company like Pro-Cut and having the experience of working in an auto-parts store I see the benefit of matching the rotor to the pad so that I can get the truest performance from my brake package, but also to get more – I guess you would have to put it into the context of I'm going to be happy when I put my foot on the brakes, I'm not going to get a pulsating or a surge or anything like a shimmy that can happen, especially if you're having problems with your used front-end parts and components. With that sort of thing, unless you go back and rebuild the whole front end and pack the bearings and make sure that things go back to new specs exactly right each and every time, you're going to have some of that. The average person may not feel that, but with me and the experience I have, I pay a lot of attention to

what I feel through the steering wheel, what I feel when I have my foot on the brake when I'm getting ready to stop. I'm paying attention to that kind of stuff and I want to not feel it. If I do, then something's not right. That's one of the benefits after seeing that when you take a part off a vehicle and turn it on a lathe independent of the hub itself, you can create an issue. With Pro-Cut, by their doing the rotor matching on the vehicle, you're basically aligning your rotor and your brake assembly as well as you can get it right off the assembly line again. I'll tell you from experience you can take that hub back off after you had it turned independently, turn it and you will find runout unless you match it to the vehicle itself.

**Q** Where do you see the automotive aftermarket, and specifically the automotive aftermarket brake-repair industry, going in the future?

**A** I hope that we understand that with the speeds of these cars and any kind of vehicle – it doesn't matter; any vehicle that goes down our highways today – I hope that they understand that with the increased speed you need to have an increase with brakes. I think they go hand in hand. It's almost like an airbag. If you want to get a vehicle to protect the people inside it you need to have seatbelts and you need to have airbags, but you also need to have brakes to decelerate the vehicle so that these safety components can do a better job. We've seen it in racing. Every time we go faster we put bigger brakes on it. It helps the performance of the vehicle. It makes for better safety for the drivers. When these vehicles get out of control and are headed for the wall you want them to decelerate as much as possible so that the human body can withstand the impact and walk away. It's no different whether you are on a highway or a racetrack. Better brakes and bigger brakes are a better way to go, at least in my opinion. Maintaining those brakes is always going to be a constant. Until we come up with a flying car this is going to be something that we are going to have to live with, because when tires go on the road they have to be connected to the brakes because you've got to hold these things down. The best you can do is maintain your brake system just like you maintain your tires. If your tires are worn out, when it rains you're riding on dangerous territory and looking for trouble. It's no different with your brakes. You have to maintain that element as part of your performance and, I think, part of your overall well-being of the vehicle as well as the people inside it. ■