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Testimony Before The

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Commerce, Science and Transportation Committee

Competition, Foreign Commerce and Infrastructure

Subcommittee, Chairman Hon. Gordon Smith

On

“Motor Vehicle Safety and Recall Oversight”

By

Oregon State Senator Bruce Starr

Smart Tread, LLC



Thank you, Senator Smith, for inviting Smart Tread to testify today on this critically important public safety matter. Your interest in tire safety is greatly appreciated in Oregon and throughout the country.

I would like to ask at this time that my written testimony be submitted into the record.

Smart Tread, LLC is a small company in Portland, Oregon founded in May 2003. Smart Tread's vision is to develop technology and promote ideas that save lives and prevent injuries by improving traffic safety on public roads and highways. The company is held by the five founding members, the Safe and Sound Trust, and a group of individual, like-minded investors.

Smart Tread has undertaken a mission to improve traffic safety by helping to remove dangerously worn tires from our public roads and highways. The best method to achieve this goal is the implementation of a system that everyone can easily identify and that leaves no ambiguity for the driver or other highway users. One way to accomplish this is to standardize a system of tread wear identification that everyone can understand. One such option would be to utilize colorized rubber at levels within the tire tread to automatically alert the owner when their tires are unsafe. With such a system in place, dangerously worn tires can be easily identified, and can be removed from service before they cause injuries or fatalities on the highways.

Over 50% of the company's profits will go to the Safe and Sound Trust, a non-profit organization, which has dedicated itself to child safety and children's issues. Smart Tread's founders have decided to reinvest over half of any of the company's profits back into the



community, specifically focusing on improving the lives of children and their families in the following areas:

- Vehicle safety;
- Safety in the home;
- Education;
- Health; and
- Poverty.

With the passage of the TREAD Act in 2000, Congress paved the way to improved road and tire safety. Your dedication to securing America's highways through this critical piece of legislation has resulted in a number of accomplishments. Thank you, again, Mr. Chairman for holding this very important hearing today as you examine those accomplishments and look to the future on important transportation safety issues and the role that technology can play in enhancing highway safety.

Since TREAD Act was passed in November 2000, the National Highway Traffic Safety Administration (NHTSA) has undertaken a series of rulemaking activities. According to NHTSA,¹ the agency has promulgated 11 final rules including rules dealing with:

1. Reporting of defects in foreign countries;
2. Early warning reporting requirements;
3. Sale or lease of defective or noncompliant tire;
4. Civil penalties;
5. Criminal penalties;

¹ TREAD Milestones, NHTSA website, May 18, 2004.



6. Acceleration of manufacturer remedy program;
7. Sales of replaced equipment;
8. Endurance and resistance standards for tires;
9. Improved tire information; and
10. Two rules dealing with improving the safety of child restraints

The rulemaking process for a tire pressure warning system was completed, but has since been struck down in the courts. A new rulemaking process is now underway.

In addition, NHTSA has provided a number of reports to Congress that address important traffic safety topics including child restraint rating systems and rollover crash tests. Overall, 41 out of the 43 requirements laid out by the TREAD Act have been completed, an enormous success traced back to efforts by the Administration and tire and auto manufacturers. Tire and auto manufacturers have also spent a great deal of time, resources and energy implementing the new standards developed as a result of the TREAD Act.

Even with all of these improvements, and despite additional educational outreach efforts by the government and industry, over 43,000 people lose their lives and more than three million people are injured on our nation's highways each year.² NHTSA reports that approximately 215 deaths each year result from tire failure.³ Many more people are injured.

² NHTSA, Feb. 2003 testimony before the Senate Commerce Committee.

³ NHTSA reports that .5 percent of all fatal vehicle accidents are due to tire blowouts. Final Economic Assessment: Tire Pressure Monitoring System. FMV SS#138, Office of Regulatory Analysis and Evaluation Plans and Policies, March 2002.



We all understand the critical role a tire plays in the safety of drivers and passengers on the road. Tire tread channels water in wet or slushy conditions, enhances traction in snowy conditions, and protects the casing from puncture and a potential tire blow out.

The number of hydroplaning accidents caused by low tire tread is not presently reported. Nonetheless, it is clear that low tire tread is the primary cause of hydroplaning.⁴ A typical new tire sold now has 10/32 of an inch of tread depth. According to a recent *Consumer Reports* study, a tire with only 5/32 of an inch of remaining tread has a significant decrease in function if driven in rain or snow.⁵ As the TREAD Act is fully implemented, reporting to the Fatality Analysis Reporting System (FARS) is enhanced, and the accuracy of accident reconstruction and reporting improves, we can only expect the reported number of tire-related deaths to increase.

Americans continue to be encouraged to do a regular monthly check of their tire pressure and tire tread. The industry's efforts to educate the public on tire safety are extensive and Smart Tread commends the Administration and the industry for their efforts. Yet, research demonstrates that consumers are not diligent in this regard. Nine percent of vehicles on the road today have at least one bald tire,⁶ two out of three drivers do not know how to judge when a tire is bald,⁷ and over half cannot identify a wear bar.⁸ Simply put, 23 million cars are on the road with dangerous tread wear, and most of those drivers have no idea that their tires are unsafe. This failure does not rest with the tire or auto industry or the government.

⁴ Consumer Reports, March 2003.

⁵ Consumer Reports, March 2003.

⁶ DOT HS 809 359, October 2001.

⁷ RMA Tire Safety Fact Sheet 2004.

⁸ RMA Survey, February 2002 (FrederickPolls).



Rather, the problem is human nature. Americans have busy, hectic lives and are unwilling to take the time to get out of their cars and check the tire pressure with the tire pressure gauge, which they typically do not have on hand. Even if consumers understood the penny test, they seem unwilling to put it to use on a regular basis or visually search for the wear bar in a routine way.

In this world of ever-changing technology, we have seen a number of very successful safety features incorporated into automobiles that have saved tens of thousands of lives. The most highly recognized and effective of these have been the seat belt and air bags.

Statistics from the U.S. Department of Transportation, Bureau of Transportation Statistics report that from 1975 to 2001 the use of seat belts saved 147,246 lives.⁹ It is estimated by the Click It Or Ticket/Operation ABC (America Buckles Up Children) campaign that the use of seat belts now saves 14,000 lives each year and about \$50 billion in medical care, lost productivity and other injury related costs.¹⁰ Clearly, the use of seat belts has had a tremendous impact on vehicle safety, but the effort to get people to buckle up continues. In a presentation given March 5, 2004 as part of the Distinguished Lecture Series at Ford Motor Company, the director of the National Center for Statistics and Analysis revealed that seat belt use increased from 75 percent in 2002 to 79 percent in 2003. This was the largest increase in seat belt use seen since the DOT began to track such use. This increase in seat belt use is largely attributed to the Click It Or Ticket/Operation ABC campaign sponsored by NHTSA, the National Transportation Safety Board, Mothers Against Drunk Driving and the Airbag & Seat Belt Safety Campaign. More than 12,000 law enforcement agencies are

⁹ National Transportation Statistics 2003, Bureau of Transportation Statistics, Table 2-30.

¹⁰ Click It or Ticket/Operation ABC Press Release, May 2004.



participating in this campaign today as the 2004 public outreach effort runs from May 24 through June 6.

Air bags are credited with saving 8,369 lives between 1990 and 2001.¹¹ The technology used for air bags continues to improve as side air bags are now becoming standard on more vehicles and air bag inflation levels can adjust automatically based on different crash forces, occupant seat position and occupant restraint use.

New technologies focus on all aspects of the vehicle. For example, side crash bars have become an added safety feature in the construction of automobiles. The use of computerized technology in automobiles has dramatically changed the way vehicles operate. Auto mechanics now run diagnostic reports to check our engine function and emission controls. We can get real-time fuel efficiency information as we travel down the road. On-board GPS systems make navigation easier. Everything from interior climate control to back-up warning systems are all controlled by computer.

Technological advances in automobiles have been tremendous, and will continue as new and better ideas are advanced. The automotive industry has worked diligently with NHTSA and other private sector actors to develop new technologies and adopt new safety standards for automobiles. The innovation found in the private sector has no bounds and should continue to be encouraged by this body and others.

¹¹ National Transportation Statistics 2003, Bureau of Transportation Statistics, Table 2-30.



An integral part of every vehicle, tires are highly engineered, manufacturing marvels specifically designed for superior handling, traction on wet and dry surfaces, and a smooth and quiet ride. Tire manufacturers work continually to develop newer and improved safety features. The tread life of a tire has increased dramatically over the years, and the run-flat system is one of the newest safety features developed for tires.

Michelin and Goodyear have both introduced Radio Frequency Tire Identification (RFID). The Michelin system utilizes a tiny transponder cured directly into the tire. The transponder can store vital tire identification information such as when the tire was made, the maximum inflation pressure, tire size, and the vehicle identification number of the vehicle on which it is mounted. Goodyear's TireIQ system relays specific tire information to drivers through the computer chip and sensor built into the tire. This system will warn the driver when improper inflation is detected. Goodyear is also looking at using the RFID system in its supply-chain operations by being able to track exactly where each tire is at all times. To insure consumer privacy, the RFID would be disabled at the point of sale.

Nokian Tyres of Finland has developed an all-weather tire that incorporates what they call their "driving safety indicator." This indicator is a series of numbers that are siped down the center of the tread. The numbers indicate the depth of remaining tread. For example, when the tire is new you will see the numbers eight, six and four on the tire. As the tread wears, the number eight will disappear, followed by the six and so on.



A 2004 survey, conducted by the Rubber Manufacturers Association, shows that two out of three drivers still do not know how to tell if their tires are bald.¹² A bald tire is defined as a tire with only 2/32 of an inch of remaining tread depth.¹³ According to NHTSA, nearly one in 10 vehicles on the road have at least one bald tire.¹⁴ NHTSA projects that in 2003 there were 230,199,000 registered vehicles.¹⁵ That translates into nearly 23 million vehicles with at least one bald tire – a tire that is unable to function well in wet road conditions, a tire that is susceptible to puncture and blow out, and a tire that has a higher chance of being under-inflated. This is a dangerous situation that must not be ignored.

Smart Tread's solution is very simple and it will be extremely effective. Utilizing existing technology, we propose to embed color directly into the tire tread. This can be done at any depth, but we recommend placing a yellow strip at 4/32 of an inch. This “warning” color will visually appear when the tread reaches that particular depth. The driver does not need to measure tread depth, because the color will automatically appear. At this point the driver knows to slow down and allow more time for stopping in wet road conditions. When the warning color emerges, some drivers may decide to go ahead and replace their tires depending on the time of year and their anticipated driving needs. Following this yellow warning, a red ply would be inserted at 2/32 of an inch – the point at which the tire is bald and no longer safe to be on the road.

This simple warning system will go a long way toward making our roads safer from tire blowouts and hydroplaning accidents.

¹² RMA Tire Safety Fact Sheet 2004.

¹³ DOT HS 809 359, October, 2001.

¹⁴ DOT HS 809 359, October 2001.

¹⁵ NHTSA 2003 Early Assessment Estimates of Motor Vehicle Crashes.



As I mentioned earlier, the technology already exists to utilize this color scheme. Michelin currently makes a tire for use on F5 and F16 Fighter jets. A red ply is inserted in various layers of this tire – which layers receive the red ply depend on the model of aircraft and the function of the tire (nose tire or main tire). When the color is visible, the ground crew knows to replace the tire.

BF Goodrich produces a tire they call the “Scorcher.” This boutique tire has tread available in black, yellow, red or blue. BF Goodrich has also developed prototype tires for General Motor Corporation’s Hummer vehicle that incorporates the use of color in the tread. The H3T prototype tire features a red line down the center that is designed for improved traction.

In October 2001, JK Tyre of India launched an “eco-friendly” silica radial tire. The tire is called “eco-friendly” because silica lowers rolling resistance, which results in higher fuel efficiency. As part of its branding effort for this tire, JK Tyre uses green colored tread blocks in the tread. JK Tyre also attributes longer durability to the use of hyper bonding silica technology. These tires are currently on the market in India.

Clearly, the technology is available to implement this simple safety feature for visually identifying tread wear. Smart Tread has been working with the Akron Rubber Development Lab (ARDL) to build sample tires for visual demonstration and testing. As you have seen in our presentation, tires with embedded color have been produced and initial testing results have demonstrated that tires with the universal tread wear identification



system we propose perform as well as current black carbon tires. Of course, more study is needed and Smart Tread will work closely with NHTSA and the industry to ensure that the highest standards are met.

When someone dies in a vehicle accident, no matter the cause, it is devastating to those left behind. Mr. Chairman, just recently in Oregon, five members of a family were tragically killed when the right rear tire on their car blew out. The out-of-control car careened into the path of an oncoming pickup truck. All five were pronounced dead at the scene. The family had been on an outing to pick up Easter supplies for their church. Killed in the accident were a 60-year-old woman, her 25-year-old daughter, two granddaughters who were 18 and two, and a three-year-old great-granddaughter.¹⁶

Last September, on Oregon State Highway 38 near Roseburg, a tanker containing more than 11,000 gallons of gasoline blew a tire, igniting a fire and stopping traffic for over two hours. Thankfully, there were no injuries.¹⁷

Could these tire blowouts have been avoided? Possibly.

These tragic stories are not limited to Oregon, but indeed can be found throughout the country. The tragedies described below highlight the danger related to blowouts and hydroplaning – which in many cases are attributed to insufficient tread.

¹⁶ *The Columbian*, pg. C2, April 13, 2004.

¹⁷ Associated Press Newswires, September 9, 2003.



- In February, the *Topeka Capital Journal* described the testimony of Ron Alexander in front of the State Senate Transportation Committee. Alexander's 15-year-old daughter was killed in 1998 when the church van in which she was riding blew a tire and rolled three times on Interstate 70 near Junction City.¹⁸

- The *Chicago Daily Herald* reported that an Aurora woman was killed and a Batavia woman was hospitalized when one of the cars hydroplaned on a wet road, spun out of control and crashed into the other car.¹⁹

- A 19-year-old was killed and two 18-year-olds were injured recently in Schaumburg, Illinois when their car hydroplaned on the wet street and crashed into a traffic light pole.²⁰

- Last September, the *Las Vegas Sun* described how a truck carrying fertilizer and diesel fuel spilled its potentially explosive cargo along Interstate 15 in Nevada, forcing officials to close the highway for six hours. The truck crashed after the driver's side front tire blew out.²¹ Although there were no injuries in this accident, the potential for a catastrophic disaster from the explosive nature of the spilled cargo became appallingly clear.

¹⁸*Topeka Capital Journal*, pg. C3, February 25, 2004.

¹⁹*Chicago Daily Herald*, pg. F3, March 27, 2004.

²⁰*Chicago Daily Herald*, Cook, Lake, pg. 3, March 6, 2004.

²¹*Las Vegas Sun*, pg. 2, September 17, 2003.



- Nearly a year ago a Las Vegas woman lost control of her van north of Barstow, California when a tire blew out. Her 8-year-old passenger was killed in the rollover accident. Traffic on Interstate 15 was backed up four to six miles in each direction.²²
- A May 7, 2004 article, from *The Press Enterprise*, describes the death of a 56-year-old businessman less than one mile from his home. A rear tire blew out causing the car to roll.²³ He was pronounced dead at the scene.
- Last month, *The Los Angeles Daily News* described an accident that left a 14-year-old boy dead. The boy was in a minivan bound for Magic Mountain when a tire blew causing the van to roll. Also injured in the accident were three teenage girls.²⁴
- Two weeks ago, a Florida newspaper chronicled the lives of two high school students who, a year ago, were involved in a rollover crash as a result of a blown tire. The SUV they were riding in rolled six to eight times. The driver, one of their friends, was killed in the accident and both boys suffered extensive injuries.²⁵
- A Washington state jury issued a multi-million dollar award to a family whose minivan tire blew out, causing the van to roll in an accident eight years ago near Chehalis. The jury decided that the maker of the tire, Michelin, was not at fault for the tire blow out. Instead, the jury found against the father, who was “negligent in failing to maintain the tire in proper working order.” The man’s Canadian insurance

²² *The Press-Enterprise*, pg. B6, August 3, 2003.

²³ *The Press Enterprise*, pg. B3, May 7, 2004.

²⁴ *Los Angeles Daily News*, pg. AV1, April 26, 2004.

²⁵ *Sarasota Herald-Tribune*, pg. C1, May 18, 2004.



company is liable for the judgment. The blown out tire resulted in extensive injuries to the five children and two parents in the van.²⁶

- A Port Townsend woman was killed on Interstate 5 near Mayton, Washington when her station wagon veered across the median into oncoming traffic. A tractor-trailer smashed into her car and split the vehicle in two. State Patrol investigators suspect the woman lost control of her car when it hydroplaned on the wet road. Three others were injured in the accident.²⁷

- In Lebanon Township, New Jersey an 18-wheeler crossed the I-78 median into oncoming traffic where it struck a car and knocked another tractor-trailer into the woods. The November 2002 accident was caused by a tire blowout and the truck driver was killed.²⁸

- In Arizona, a tire blowout accident on Interstate 19 left a 10-year-old girl dead, and her father with internal injuries. The left rear tire of the family's Ford SUV blew out causing the SUV to roll.²⁹

- In February a 19-year-old Army Reservist was killed after a tire on the Humvee in which she was riding blew out causing the vehicle roll on Interstate 10 in Tucson, Arizona. The vehicle then burst into flames.³⁰

²⁶ *Vancouver Sun*, pg. B1, April 24, 2004.

²⁷ *The Olympian*, pg. B1, November 20, 2003.

²⁸ *Courier News*, pg. B2, April 14, 2004.

²⁹ *The Arizona Daily Star*, pg. B4, April 16, 2004.

³⁰ *The Tucson Citizen*, pg. 1A, February 9, 2004.



- In 2000, eight people died on Interstate 26 near Chapin, South Carolina when a delivery truck blew a tire and veered across the median into a sport utility vehicle packed with people headed for vacation.³¹

These are the tragedies that must compel us toward a standardized visual tread wear identification system – a system that is uniform and easy for all to understand.

Over the course of the past nine months we have shared our vision with a number of businesses, associations and elected and appointed officials. We have spoken to Secretary of Transportation Norman Mineta, NHTSA Administrator Dr. Jeffrey Runge, the Oregon Congressional delegation, General Motors, Good Year, Bridgestone/Firestone, The Alliance of Automobile Manufacturers, the Tire Industry Association, the American Trucking Associations, the AAA Foundation for Highway Safety, Advocates for Highway and Auto Safety, International Association of Chiefs of Police, American Association of State Highway and Transportation Officials, Greater Washington Board of Trade, Conference of Minority Transportation Officials, American Bus Association, American Public Transportation Association, many more members of Congress, and many others. We shared our unique idea with these groups and discussed ways in which we can make even more progress in eliminating highway deaths and injuries. We look forward to a continued relationship with the tire and auto industry as we jointly strive to enhance the safety of America's roads.

³¹*Sun-News*, TSN, pg. 4, July 24, 2003.



Smart Tread's ultimate goal is the same as so many others here today – to save lives and reduce injuries on our nations roadways. This hearing moves us toward that goal and we are incredibly thankful to share our vision with you.

We thank you, again, for this opportunity to present our idea to you today.