

**NATIONAL TRANSPORTATION SAFETY BOARD**  
**Public Meeting of October 27, 2015**  
**(Information subject to editing)**

**Special Investigation Report on Selected Issues in Passenger Vehicle Tire Safety**

This is a synopsis from the NTSB's report and does not include the Board's rationale for the conclusions and safety recommendations. NTSB staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The final report and pertinent safety recommendation letters will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing.

**Executive Summary**

In 2013, a total of 539 people died in tire-related crashes in passenger vehicles. Each year, about 33,000 tire-related crashes occur, resulting in 19,000 injuries. Most tire-related crashes are preventable and, although actions that could reduce tire-failure-related injuries and deaths are known, they continue to be debated rather than implemented.

In February 2014, the National Transportation Safety Board (NTSB) investigated two fatal tire-related motor vehicle crashes in which the initiating event was tire tread separation. The first crash occurred in Centerville, Louisiana, and it involved a sport utility vehicle (SUV) and a school bus. The SUV was traveling westbound on US Highway 90 when its left rear tire experienced a tread separation and sudden air loss. The second crash occurred in Lake City, Florida, and it involved a 15-passenger van occupied by three adults and seven children. The van was traveling northbound on Interstate 75 when its left rear tire sustained a complete tread separation. The NTSB also conducted limited investigations in 2014 into two additional fatal crashes caused by tire failure – one involving a pickup truck that experienced a tread separation on its left front tire in Eloy, Arizona, and the other involving an SUV that experienced a tread separation on its right rear tire in Patterson, California. Overall, 12 people died as a result of, and 42 were injured in, these four crashes.

On December 9 and 10, 2014, the NTSB hosted a Passenger Vehicle Tire Safety Symposium to learn more about the tire-related issues uncovered during its crash investigations and to gather additional information and expert opinion on the factors that lead to tire failure. Based on its investigative findings and the information gathered during the symposium, the NTSB identified the following general areas of safety concern:

- problems with the tire registration and safety recall system,
- failure to establish the current level of crash risk posed by tire aging and lack of consumer guidance on this issue,
- poor tire maintenance practices by consumers, and
- barriers to technological innovation that could prevent or mitigate tire-related crashes.

This special investigation report summarizes the NTSB's investigative efforts on tire-related passenger vehicle crashes, discusses the safety issues uncovered during these investigations and the December 2014 symposium, and makes recommendations to prevent or mitigate the severity of tire-related crashes. The report includes safety recommendations to the National Highway Traffic Safety Administration, AAA, the Rubber Manufacturers Association, and the major tire manufacturers.

## **Conclusions**

1. The current tire registration process has proven to be ineffective in enabling tire manufacturers to compile complete and accurate customer contact information, which is vital to ensuring the success of a tire recall.
2. A computerized system for capturing, storing, and uploading tire registration information would expedite the tire registration process, reduce transcription errors, and encourage more dealers to register tires at the point of sale.
3. Modifying the tire registration form to include fields for the purchaser's e-mail address, telephone number, and vehicle identification number would provide additional means by which tire manufacturers could notify tire owners of recalls and recover more recalled tires that would otherwise continue in use.
4. Having a complete tire identification number on both sides of a tire would help consumers to accurately identify a recalled tire and to conduct maintenance as necessary and appropriate to the tire.
5. While vehicle recalls ultimately succeed in causing more than three-quarters of recalled vehicles to be serviced, tire recall recovery rates can be as low as 20 percent.
6. The tool for conducting tire recall searches on the National Highway Traffic Safety Administration website is confusing and could cause consumers to erroneously determine that their tires are not among those being recalled.
7. By not displaying tire recall information on their websites consistently and prominently, tire manufacturers have made it more difficult for consumers to respond appropriately to a tire recall.
8. Further research is needed to confirm that the implementation of Federal Motor Vehicle Safety Standard Nos. 138 and 139 has substantially reduced the risk of tire-aging-related crashes, injuries, and fatalities.
9. The guidance provided by the tire and automotive industries regarding tire service life and the risks associated with tire aging can be inconsistent and confusing, which may lead consumers to make inappropriate tire replacement decisions.

10. The National Highway Traffic Safety Administration and industry stakeholders have not provided enough guidance to those consumers whose tires are most at risk of experiencing an aging-related failure.
11. Stakeholder efforts to educate consumers on basic tire maintenance have yielded little change in consumer behavior.
12. Vehicle- and tire-based technologies exist or are in development that could help prevent or mitigate tire-related crashes and injuries.

## **Recommendations**

As a result of its investigation, the National Transportation Safety Board makes the following recommendations:

### **To the National Highway Traffic Safety Administration:**

1. Seek authority to require all tire dealers to register tires at the point of sale, and then require them to do so.
2. Develop voluntary standards, in consultation with tire industry leaders, for a computerized method of capturing, storing, and uploading tire registration information at the point of sale.
3. Include fields on the tire registration form for the purchaser's e-mail address, telephone number, and vehicle identification number to assist manufacturers in locating and notifying owners of recalled tires.
4. Require tire manufacturers to include the complete tire identification number on both the inboard and outboard sidewalls of a tire.
5. Require tire manufacturers to put the safety recall information for their tires on their websites in a format that is searchable by tire identification number as well as by brand and model; if necessary, seek legislative authority to implement this recommendation.
6. Modify the tire recall search feature on your website to allow users to search for recalls by tire identification number as well as by brand and model.
7. Determine the level of crash risk associated with tire aging since the implementation of Federal Motor Vehicle Safety Standard Nos. 138 and 139; if, based on this determination, it appears that the aging-related risk should be mitigated, develop and implement a plan to promote the tire-aging test protocol to reduce the risk.
8. Develop a consensus document with input from the automotive industry, the tire industry, and safety advocacy groups that addresses tire aging and service life and

that also includes best practices for those consumers whose tires are most at risk of experiencing an aging-related failure.

9. Develop, in consultation with automotive and tire industry representatives, a tire safety action plan to reduce or mitigate tire-related crashes by promoting technological innovation and adapting regulations as necessary.

**To AAA and the Rubber Manufacturers Association:**

10. Work together to evaluate the effectiveness of current tire safety efforts in influencing consumer tire purchase and maintenance behaviors, and publish the results of the evaluation.

**To the tire manufacturers (and their subsidiaries) Bridgestone Americas Inc., Continental Tire the Americas LLC, Cooper Tire & Rubber Company, Goodyear Tire & Rubber Company, Hankook Tire America Corporation, Kumho Tire USA Inc., Michelin North America Inc., Pirelli Tire North America Inc., Toyo Tire North America Manufacturing Inc., and Yokohama Tire Corporation:**

11. Put the safety recall information for your tires on your websites in a format that is searchable by tire identification number as well as by brand and model.

**Safety Alert**

As a result of its investigation, the National Transportation Safety Board adopted revisions to its Safety Alert, “ Drivers: Manage Tire Risks for a Safer Ride.” (SA-044)