



U.S. Department  
of Transportation

**National Highway  
Traffic Safety  
Administration**

# ODI RESUME

**Investigation:** PE 14-031  
**Date Opened:** 10/06/2014  
**Investigator:** Nate Seymour  
**Approver:** Frank Borris  
**Subject:** XZA 295/60/R22.5 Steer Tire Failures  
**Date Closed:** 02/27/2015  
**Reviewer:** Bruce York-B

## MANUFACTURER & PRODUCT INFORMATION

**Manufacturer:** MICHELIN TIRE CORP.  
**Products:** 2014 Michelin XZA 295/60/R22.5 tires  
**Population:** 32,240  
**Problem Description:** The tire may fail catastrophically when used on the steer axle.

## FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
<b>Complaints:</b>	8	9	16**
<b>Crashes/Fires:</b>	3	0	3
<b>Injury Incidents:</b>	0	0	0
<b>Fatality Incidents:</b>	0	0	0
<b>Other*:</b>	2	0	2

\*Description of Other: Police Accident Report and crash investigation report

\*\* Total eliminates duplicates received by ODI and manufacturer.

## ACTION / SUMMARY INFORMATION

**Action:** This PE is closed. See Recall 14V740.

### Summary:

The Office of Defects Investigation (ODI) opened this investigation based on seven (7) Vehicle Owner Questionnaires (VOQ) and a Police Accident Report (PAR) alleging failures of Michelin XZA tires. The PAR reported an auto hauler left the roadway and rolled onto it's side and losing some of it's load. Fortunately, the driver was unharmed and no other vehicles were involved.

ODI received ten (10) additional VOQs during the investigation. The VOQs included both 295/60/R22.5 and 275/70/R22.5 tire sizes. ODI focused on the 295/60 tires as they were specified as original equipment on many auto hauler trucks. Due to their unique loading configuration, auto haulers tend to place a high demand on front tires. The 295/60 has a maximum load and speed rating of 7,390 pounds and 65 mph when maintained at 130 psi (cold) inflation pressure on a 9" rim. Pressure below 130 psi reduces the maximum load and Michelin only approves mounting the 295/60 on a 9 inch rim. While physically possible, mounting on any other size rim compromises the integrity of the 295/60 tire. Alternately, the maximum speed can be raised to 75 mph when the tire is mounted on a 9" rim with 130 psi pressure and the load does not exceed 7,150 pounds.

During the investigation, ODI collected and analyzed vehicle, crash, and tire information. In addition to sending an Information Request (IR) letter to Michelin, ODI collected information from several vehicle manufacturers. Electronic data from the subject crash vehicle showed the vehicle was traveling in excess of 75 mph when the tire failure occurred.

Michelin investigated all subject tire failure claims they were aware of. In each case the failure could be explained by one of the following: (1) violating the interdependency of tire load, inflation pressure and vehicle speed, (2)

misapplication of rim vs. tire size or (3) a road hazard. Some fleets assumed there was a defect with the 295/60 tires and used the 275/70 instead. Michelin does not approve mounting a 275/70 on a 9" rim. In the event that the rim was appropriately changed to a 7.5 or 8.25 inch, the load capability would be reduced.

No design changes were reported for the subject tires. This removed the possibility that a design or material specification change caused the recent failures. The more likely explanation of failures is the increase in maximum speed limits in several states. Currently, no truck tire is rated in excess of 81 mph (speed rating M) with the vast majority rated at 75 mph (speed rating L), yet 16 states have maximum truck speeds equal to or greater than 75 mph. Of these 16, four allow truck speeds of 80 mph or more.

To further understand the environment of the subject tires, ODI conducted a special survey (level 4 inspections) with the assistance of the Pennsylvania State Police, Motor Carrier Enforcement. ODI weighed individual steer axle tires and measured the inflation pressure of auto haulers. Of the trucks inspected, 55% had an overloaded tire based on the actual load and inflation pressure (assumed to be cold). When asked, 60% of the drivers did not know the proper inflation pressure as certified by the OEM for the vehicle they were driving.

During this investigation, Volvo recalled a population of auto hauler trucks that were originally equipped with tires rated for a maximum speed of 65 mph. As originally built, the recalled vehicles were capable of exceeding the tire speed rating. Volvo's recall sets the speed limiters on the vehicles to prevent exceeding the tire speed rating.

This investigation is closed. The agency reserves the right to take further action if warranted.

The ODI reports cited above can be reviewed at:

<http://www-odi.nhtsa.dot.gov/owners/SearchNHTSAID> under the following complaint identification numbers:

10481621, 10525399, 10626593, 10626604, 10626610, 10626623, 10626628, 10648659, 10652375, 10652379, 10652387, 10652394, 10652803, 10653907, 10658758, 10658759, and 10669074