



# COMMERCIAL FLEET TIRE DIGEST

*The authoritative guide to reducing commercial tire expenditures from  
Pressure Systems International,  
the manufacturer of the Meritor Tire Inflation System by PSI™*

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## What Industry Statistics Say about Proper Tire Inflation

**PSI can  
offer you a  
Tires 101  
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The Federal Motor Carrier Safety Administration (FMCSA) has published several studies over the years about commercial tire pressure maintenance.

By definition, a tire is considered "flat" and should be removed from service and thoroughly inspected when that tire is 20% below recommended air pressure. A typical commercial truck tire operates at 100 PSI. If the tire is measured to be 80 PSI, then that tire must be removed from the vehicle. Air is what carries the load and when the air pressure drops significantly, this will lead only to negative performance results.

Research performed by the FMCSA has revealed that 7 % of all tires are underinflated by 20 PSI or more. And only 45% of all tires are within +/- 6 PSI of their target pressure. Tires and tire related costs continue to be the single largest maintenance cost for fleets today. And with tire prices continuing to rise because of the high cost of raw materials (oil based), the tire related maintenance costs will just continue to escalate.

The FMCSA points out that for the average fleet operator, tire underinflation increases the annual procurement costs for both new and retread tires between 10 - 13%.

Fuel economy drop due to tire underinflation is conservatively stated at 0.6%. If all 18 tires were underinflated 20%, the loss in fuel economy would be over 2%. At today's fuel prices - the total additional cost to a fleet would be completely unacceptable.

On top of the increased fuel & tire costs, tire underinflation is responsible for about one (1) road call per year per tractor-trailer. The average downtime associated with a roadside service call is over 2 ½ hours and costs several hundred dollars, which is not good for the bottom line or "just-in-time" delivery. The government estimates that tire underinflation increases tire related costs from \$600 - \$800 annually per tractor-trailer. The ROI (return on investment) for running an automatic tire inflation system is typically under one (1) year for most fleet operations.

NHTSA also reports that commercial vehicle tire underinflation is directly linked to stopping distance and handling and therefore overall safety. NHTSA points out, that properly inflated tires could help prevent or limit crashes even when the tires are not the initial cause of the crash.

Bottom line: Checking your tires on a regular basis for both air pressure and any signs of irregular wear is essential if a fleet wants to maximize mileage, increase fuel economy, and maximizing retreadability.

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## Q & A PSI ANSWERS YOUR QUESTIONS

**Q.** I recently initiated an evaluation with PSI tire inflation systems on 10 trailers and 10 trailers as the control without any inflation system. I have 1,000 trailers in my fleet, Is my sample size large enough to make it a meaningful test?

**A.** Whenever you run an evaluation of any kind of product (including tire inflation systems), it is important that you spend the time putting together a "serious" test. At the end of the test, you must be able to be in a position to determine that product A is equal, better, or worst than product B. Otherwise you would have wasted a lot of time and money.

The Technology Maintenance Council (TMC) recommends a minimum sample size of 30. There are so many variables to consider when designing a test such as route, load, trailer make and model, and driver. Sample size needs to be large enough to take those variables into account. It is also important to determine what data will be collected. In your case you need to keep track of removal tire mileages, roadside tire related service calls, and # of tires that were successfully retreaded.