



# 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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## Maintaining Proper Tire Air Pressure

Trailer manufacturers received net orders for 14,000 trailers in August, according to a report compiled by FTR.

August net trailer orders were up 48% from July. Despite the increase, orders were down 48% compared with August 2015.

*Trailer-Body Builders  
September 20, 2016*

Maintaining proper tire air pressure is still the primary issue facing commercial trucking fleets today. With the average price of a radial truck tire in the \$500 range, fleets take tires and their tire program very seriously.

Air is what carries the load so air pressure is critical to all the important tire related issues including:

- Maximizing tire removal mileage
- Maximizing fuel economy
- Increasing retreadability of the tire casing
- Reducing tire related roadside service calls

So why is maintaining proper tire inflation so difficult? There are only a few reasons why tires lose air:

- Osmosis through the tire casing over time
- Leaking valve cores
- Punctures
- Shoulder/sidewall curbing & impact breaks

Tires will lose several psi per month depending on the specific make/model. A tire is similar to a balloon. Air is going to permeate through the casing over time. Some tires are manufactured with rubber compounds that tend to trap the air better than other tire designs. Tires may all look black and round, but the composition of the rubber compounds have a major impact on the tire's performance including air retention. This is one of the reasons why one tire brand may have a higher cost versus another.

Leaking valve cores are always an issue. Tire valve cores should be tightened to about 4 in-lbs. There are tools available that are pre-torqued to this measure eliminating the issue of over and under tightening a valve core.

The number one reason why tires lose air is slow leaking punctures in the tread area.

A #20 penny nail penetrating a tire tread groove can lead to losing several psi per day. Within just a few days the air pressure will be significantly low leading to all kinds of issues.

When the inside dual, for example, is down to 70 psi and the outside dual is at 100 psi, the result is that the low pressure tire will have significantly different rotations per mile (rpm) developing irregular wear as this tire is being dragged along next to the larger diameter 100 psi tire. Once the tire begins developing irregular wear, the tire tread is no longer smooth and even also adversely affecting tire fuel economy. It is the industry standard that duals should always be within five psi of each other.

A little known fact is that when a tire is underinflated, the footprint is longer and the rubber compounds will become softer and hotter due to the excessive flexing of the tire sidewall. This long footprint, in combination with the hotter/softer rubber, will lead to an increase in punctures and an increase in tire-related roadside service calls. There is 18% more rubber on the road on a 70 psi tire versus a fully loaded 100 psi tire.

Historically, trailer tires are the least maintained wheel position on any vehicle. Tire air pressure surveys always reveal a significant amount of low tire pressures at this position and is the reason why automatic tire inflation systems have become the standard for trailer tires. Air is automatically added to any low trailer tire as the vehicle is moving. A light will be illuminated that the driver sees in his side mirror to let him know the system is working and adding air to a low tire. When this light is activated, the driver needs to let maintenance know so the low tire or tires can be properly repaired at the first available opportunity.

Fleets that use a drop & hook approach have more challenges to maintaining proper inflation pressure. When trailers sit in a yard (likely maintained by the shipper), they are without access to air. When it comes time for the driver to pull the trailer, they have little to no options to address a low pressure situation.

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