

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

VOLUME 1 ISSUE 10

SEPTEMBER 2007

Over Versus Under-inflation



Trailer tire showing signs of irregular wear aggravated by improper inflation

Courtesy of the TMC
Radial Tire Wear
Conditions Analysis Guide

MTIS™ will be featured at the ArvinMeritor Booth (#104) at the IANA Intermodal Expo being held November 10-13 at the Georgia World Congress Center in Atlanta.

Visit us On-line

For current and back issues of

Commercial Fleet Tire Digest

And to subscribe or submit your inquiries to be answered here, go to

**www.
psitiredigest
.com**

Most things in life and in business have tradeoffs – the good vs. the bad. The objective for your business is to maximize the specific attributes that work best and that give the fastest and best ROI (Return on Investment).

The decision to over-inflate tires, or possibly to run under-inflated tires, has serious implications to how well you meet these objectives.

Over-inflating tires

Some fleets prefer to over-inflate their tires for several reasons:

-It may be considered a safety factor if the tractor and/or trailer will not be seen for long periods of time. This can be especially true for some trailers, where it is possible they may not be seen in the shop for up to a year. By initially over-inflating the tires by 15% to 115 psi, at the end of that year the tire could still maintain a safe 100 psi level even though air is lost through osmosis. Note: If the tire has nail puncture causing a slow leak, it could be down to 60 to 70 psi or even lower.

-Another reason fleets may prefer to over-inflate is to improve fuel economy. Over-inflating will improve fuel economy slightly to start but eventually the tire will develop uneven wear, which leads to very early tire removal mileage. Also, tires will start developing cupping wear because of the bouncing. Once uneven wear develops, fuel economy will get worse....not better.

Tire over-inflation is typically not an issue for trucking fleets because of significant negative trade-offs to this practice, in addition to the increased wear characteristics mentioned above:

When tires run overinflated, the ride experienced by the driver becomes quite "bouncy" which they don't like. Keeping good drivers is still a major issue and over-inflating tires will not help driver retention.

-Traction is adversely affected as well with over-inflated tires. The tire footprint becomes very small and the result is an increase in vehicle stopping distance.

-Many fleets also report increased sidewall blowouts when they run up against curbs when tires are over-inflated.

Under-inflation

So are there any benefits from running your tires underinflated? The answer is NO. There are actually no "trade-offs" to this practice as **tire underinflation will only lead to problems, with no correlating benefits.**

The negatives of running tires underinflated are numerous:

-Mileage is significantly reduced because uneven wear will develop (tire footprint becomes long and distorted)

-Roadside service calls will increase because of increased punctures (combination of the longer footprint plus added heat caused by the stresses of increased flexing of the sidewall)

-Fuel economy will drop – as an example your fuel economy will be reduced by over 2% if tires are underinflated by 20%.

-Retreadability is also reduced because of the additional heat generated at low tire pressures.

The bottom line is that tires need to run at recommended pressure ALL the time in order to maximize fuel economy, mileage, traction, retreadability and to reduce roadside service calls. This is accomplished by running tires at recommended air pressure based on your worst case load scenario. It is important to understand all the factors of tire inflation when designing your tire program so that you can meet the objectives for your business.