

## **Beware of the 'Magic' Number**

By Jim Park, *HDT* magazine

A glance at any tire maker's load and inflation tables can tell a driver proper tire inflation levels, but many fleets inflate their drive and trailer tires arbitrarily to 95 or 100 psi — thus "overinflating" them and possibly sacrificing tire life.

The truth is, you only need between 75 and 80 psi in any drive or trailer tire when loaded to the maximum U.S. Interstate weight limit of 34,000 pounds per tandem axle group.

Published load and inflation tables from Goodyear and Michelin indicate 75 psi (80 psi by Bridgestone's table) is the minimum pressure required to support a tire load of 4,550 pounds. In a fully loaded 34,000-pound tandem, each tire in a dual assembly carries 4,250 pounds. That's cold inflation pressure, by the way, the standard inflation pressure denominator.

Many fleets want to err on the side of caution by running 95 to 100 psi in single tires in dual assemblies. But, tire inflation pressures are not arbitrary. Each tiremaker establishes minimum pressures based on tire loading, and the construction of the tire establishes the maximum allowable pressure.

But, several things happen to a tire that's overinflated for its load, such as the tread tending to "crown," leaving the shoulders of the tire scrubbing along the road as it tries to keep pace with the larger circumference of the center of the tread. When a truck is empty, tires just bounce along the road, scrubbing a little more rubber off the tread every time they hit the ground. It's a cumulative effect and it can be severe in fleets like fuel haulers that run empty half the time.

Fleet managers need to remember that tire loads should determine pressure. The specific pressure for a given load is available from a tire manufacturer's load and inflation tables and fleets also can use tables provided by the Tire & Rim Association, whose members set technical standards for manufacturing tires and wheels.

### **TIPS FOR PROPER TRAILER TIRE INFLATION**

While not "rocket science," there is definitely the right way to ensure trailer and tanker tires are properly inflated. According to Yokohama, fleet managers should ensure that drivers follow the tips below:

1. Use a pressure gauge; "thumpers" — or tools sold at truck stops for checking tire pressure — truly don't work. Only pressure gauges are accurate.
2. Only check pressure on tires that haven't been driven on for at least four hours. Never bleed air from a hot tire.

3. When checking pressures, also look for tire damage that could cause vehicle downtime later.
4. Use labels/stickers to remind drivers of the proper target pressure.
5. Consider running trials to determine the fleet's proper pressure for each axle.

### **GET THE FACTS**

Improper tire inflation can cost fleets money. According to the Technology & Maintenance Council (TMC):

- A constant 20-percent under-inflation will increase tire tread wear by 25 percent and a constant 10-percent over-inflation will increase tire tread wear by 5 percent. This is due to an uneven abrasion of the tread against the pavement and the development of irregular wear patterns, which shortens tread life.
- Improper tire inflation, defined as little as 10 psi low, reduces fuel economy by about 1 percent. About 30-40 percent of the fuel required to move a vehicle down the highway is spent overcoming tire rolling resistance.