

TECH NEWS

TECHNOLOGY NEWS

March-April 2005

Tire tips for tire life and worker safety

April 24–30 was National Tire Safety Week. This is a good time of year to review your tire program, provide training to your staff, and conduct basic maintenance to save money and enhance safety.

Air pressure

There's a direct relationship between proper air pressure and tire life. It's the most basic—and the most overlooked—factor in tire life.

1. **Under-inflation costs money.** Operating on soft tires means they wear faster and the vehicle burns more fuel. At normal speeds, running tires at 20 percent under recommended pressure will reduce tire life by 16 percent and increase fuel use by 2 percent.
2. **Know the proper pressure.** Tires are designed to run with specific pressures based on the total load. Gather information on each truck's actual axle load, then use standard load charts to calculate the correct tire pressure. Ask your tire supplier for help and training. (For load charts, see www.goodyear.com/truck.)
3. **Expect tires to lose air.** Rubber tires are made of a porous material; they lose air continuously. A truck tire is expected to lose up to two pounds a month according to industry standards. In addition, air can leak through valve caps or small punctures.
4. **Think about outside temperature.** A tire will gain or lose a pound of pressure with every 10-degree F. change in outdoor temperature. Tires with 100 pounds of pressure in August can lose several pounds of air by November or December. You could be plowing with under-inflated tires, even though they may not be due for regular preventive maintenance.
5. **Check pressure every season or before use.** At a minimum, you should check tire pressure every season—more often is better. For infrequently used or seasonal equipment like motor graders, check tire pressure before operating the equipment. To get an accurate reading, be sure the tire is cold, at least three hours after last use.
6. **Calibrate gauges monthly.** Even with regular checking, tires

Editor's note

The information in this article was adapted, with permission, from an article in the spring 2005 issue of *Wisconsin LTAP*. Many thanks to Mike Tjelmeland at the Iowa DOT for reviewing the article and suggesting some websites for more information:

www.4crawler.com/Diesel/Tires.shtml

www.retread.org/Inflation/index.cfm

[/ID/198.htm](http://www.tires101.com/)

www.tires101.com/

www.tiresafety.com/glossary/GlossComp.asp

www.dualport.com/bustech/load_tires.html



Check tire pressure at least every season; more often is better.

Photo courtesy of Wisconsin LTAP



could be at the wrong pressure due to faulty gauges. Invest in a master gauge (about \$100) and regularly calibrate all the gauges in the shop.

Zipper rupture on tire side wall.
Photo courtesy of Wisconsin LTAP

7. **When reinflating tires, explosion is possible.** Any radial tire that has been driven at less than 80 percent of its recommended pressure has the potential to "zipper rupture" when it is reinflated. That is, the side of the tire could explode. You can learn to recognize hazardous tires and how to re-inflate them safely from videos or training programs provided by tire suppliers.

Tire wear

1. "Read" tires regularly. Check for signs of wear before tires sustain serious damage. Regularly look at tire walls for signs of zippering; inspect for cuts, cracks, blisters, or bulges. Measure tread depth. It should be no less than 4/32-inch on the steer axle and no less than 2/32-inch on all others. Run your hand over the tread and feel for abnormalities like rib edge feathering or cupping. Feathering is an early sign of misalignment or could be caused by improper pressure. Take the tire/wheel assembly off and look at the face of the tire for any type of irregular wear pattern. For example, drive tires may develop heel and toe wear.
2. Rotate tire position for longer life. Any rotation schedule is better than no rotation at all. How often it's needed depends on truck usage.

Tire repair

The only proper way to fix a tire is to put a patch on the inside and a plug through the injured area. Any repair from the outside will void the tire warranty, even if it is properly fixed later.

For more information

Contact Mike Tjelmeland, Iowa DOT equipment services, 515-239-1069, michael.tjelmeland@dot.iowa.gov.
