

What's in a tire?



SAVVY OWNER-OPERATORS CONSIDER QUALITY, NOT JUST PRICE, WHEN PURCHASING TIRES.

Owner-operators have two major, constant costs: fuel and tires. Unlike fuel, tires come in many varieties and prices, allowing buyers the freedom to spec the brands and products best suited to their type of haul.

It's vital for owner-operators to evaluate tires by total cost per mile, not just the tire's initial cost. "A tire's cost per mile is not known until the last retread is worn out," says Dave Taylor, vice president of technical services at Toyo Tires.

Experts' opinions vary somewhat on whether a more expensive tire always means a longer life and lower lifetime cost.

"Generally, yes, a more expensive tire yields a lower cost per mile," says Guy Walenga, Bridgestone's director of engineering for commercial products and technologies. "You tend to get better wear per 32nd, more resistance to irregular wear, the tire tends to be more durable, and it stays in place on the wheel, so you get more miles, and then it's more retreadable. Low-price tires generally don't last and don't produce retreadable casings. Many fleets can quantify the fact that you do get what you pay for."

Taylor looks at it another way. "Cost per mile cannot be determined by the tire's invoice price alone. Considering the steady

technological advancements that are being offered by tire manufacturers, including Toyo, a prudent fleet will continuously track tire performance to determine the true CPM of their tires."

Doug Jones, Michelin North America's customer engineering support manager, agrees in principle that a more expensive tire yields lower cost per mile, "but it is not absolute." Compare a \$200 tire delivering 100,000 miles, and a \$250 tire delivering 200,000 miles, Jones says. The first tire costs \$.002 per mile, while the more expensive tire costs only \$.00125 per mile.

"Generally speaking, the greater the initial cost, the better the cost per mile due to longer running miles," Jones says. He agrees with Taylor's point about retreads and provides a comprehensive formula for calculating cost per mile: (new tire costs + repair or retread costs + disposal costs - casing values) / (total original miles + total retread miles).

"Better, more expensive tires reduce overall cost per mile, but I would have trouble providing data to prove my point," says Tim Miller, Goodyear's marketing communications manager. "Doing business with a manufacturer of premium tires assures high-quality products, a comprehensive warranty, consistent nationwide services, and new tire and retread availability."

Phil Boarts, marketing director at Cooper Tire, says price and performance may not be directly related at either end of the price spectrum. "Some of the highest-priced products may not perform much better than some moderately priced products," he says. "The lowest-priced products may not deliver performance, either, because the technology is just not adequate."

Fuel factor

Using low rolling-resistance tires to improve fuel economy is less than a slam dunk, experts say. "Many other factors affect fuel use, including the habits of the driver," Miller says. "We also know that if you take the time to run an SAE fuel economy test and find an improvement with a certain selection of tires, the real-life improvement will typically be half of what was demonstrated in the test."

"Fuel economy is not the only thing," says Bridgestone's Walenga. "You can strive for low rolling resistance or look at overall life cycle costs. You can't save enough in fuel alone."

Rolling resistance is more important to higher-speed carriers that travel in a straight line for long periods, says Cooper's Boarts. "Shorter-haul or slower fleets turn and start and stop more, which I think would

HELP WITH PRESSURE

Tires are expensive enough when well maintained, so don't take away from your bottom line by adding the cost of road calls, repairs and ruined casings. Any successful owner-operator should be careful to maintain proper inflation.

Tire inflation and monitoring systems can make this time-consuming task a bit easier. While some devices merely warn of low pressure, others keep tires automatically inflated and warn the driver as soon as a leak develops.

Below are some examples of what's on the market, as described by the manufacturers.

Airgo: This system checks pressure at each valve stem without having pressurized air in the hub, which can cause grease seals to leak. If a hose breaks, the tire will not go flat, and the system will maintain pressure in the remaining wheels when the hose from the rotary union is disconnected. It keeps contaminants out of the hub. www.tireinflation.com

Dana's Commercial Vehicle

Systems Group: The SmartWave Tire Pressure Management System measures the pressure and temperature of each tire, and transmits data wirelessly to a dash-mounted receiver. It can be installed as original equipment or aftermarket, unlike some systems that require a special axle design. The Spicer Tire Inflation and Monitor System is designed for trailers. Its seals and lines remain unpressurized except when inflating, preventing premature seal failure. www.dana.com

Hendrickson TireMaax: The TireMaax CP and the TireMaax EC both feature bolt-in ball-bearing rotary unions; rugged, braided stainless-steel axle hoses; and axle ventilation

systems with filters. The CP checks trailer tire pressure continually without pressurizing the axles and uses a pneumatic controller to ensure they stay at a preset level. A signal light alerts the driver of tire or system leaks.

www.hendrickson-intl.com

Link Cat's Eye: This system's indicator shows a narrow slit when the tire is inflated properly, a slight opening as pressure drops 5 to 6 percent below the desired pressure, and a wide-open iris when the tire falls 10 percent below rated pressure. The driver needs to make only one air connection to inflate duals. Check valves keep one leaky dual from deflating its mate. www.linkmfg.com

Michelin WABCO IBTM:

Each tire has a sensor that transmits data to an electronic control unit. Mounted on the chassis, the ECU has an antenna to receive data from all tires. When the driver switches on the ignition, the system informs him about pressure differences detected while parked.

www.michelintruck.com

Meritor Tire Inflation System:

Automatically adds air to trailer tires whenever pressure falls below the setting. A protection valve connects the air supply to a control box. If there's a leak, a flow switch illuminates a light the driver can see in the side mirror.

www.psi-atis.com

Stemco Bat RF: The Bat RF monitors and manages pressures with sensors, and includes LEDs that blink when out of tolerance. Monitoring hardware includes a hand-held portable reader, a fixed reader, a mobile reader designed to interface with third-party vehicle trackers, and an in-cab alert. www.batrf.com

OWNER-OPERATOR VIEW

HARVEY MORANT Beverly Hills, Calif.



Harvey Morant, an independent contractor for eight years, says a truck tire just north of \$100 may look good and certainly feels better at the register. But Morant says it may start doing

weird things – wobbling, for instance – when you get down the road. Expect to pay about \$250 for a good tire, he says. Steer tires, especially, should be of high quality. "If you lose a steer tire, you can lose your life," he says.

On his flatbed, Morant specs tires that will carry the most weight. He says he buys good – but not extravagantly expensive – tires for his trailer. "It is not logical to put an extremely expensive tire on the trailer, but you need a good tire because of the first time you go over a curb. Once you're 6 to 8 inches over a curb" with a loaded trailer, Morant says, "you just put 34,000 pounds on that tire."

for a ³⁰/₃₂ tire," he says. "Proper concentric mounting is important, and duals should be kept at the same air pressure. Smaller tires don't roll as smoothly and scuff more easily, leading to irregular wear."

The experts agree that tire inflation and monitoring systems probably pay for themselves because proper inflation boosts tire life and fuel economy and minimizes downtime.

Owner-operators should bear in mind that driving practices greatly affect tire life. Hard braking, hard cornering and abrupt acceleration put extra wear on tires. Axles also need to be properly aligned and adjusted routinely. If you wait until alignment wear is evident, you're too late, and it's probably time to spec a new tire.

TIRE SPECS. The tires included in the spec listings represent the products from each manufacturer that are most popular with owner-operators. Consult a dealer for information on other models; contact information begins on Page 6. ■

tend to mask any benefits of lower rolling resistance," Boarts says.

Smart truck owners will spec the optimum engine rpm range, axle ratio and tire diameter to achieve the best fuel economy for their operating plan and optimum cruising speed, says Toyo's Taylor. "The short answer is that the most significant effect on fuel economy is vehicle speed," Taylor says.

Picking the proper tread depth for different wheel positions also is important. "There seems to be a race as to who can build the deepest-tread drive axle tire – ³⁰/₃₂ or even 1 inch deep," Taylor says. "Although these

ultra-deep drive axle tires can produce more miles – especially on single-screw, high-torque drive axles – they may not be the optimum fuel-efficient design for twin-screw applications, although some tire manufacturers claim low rolling resistance for these deep tread designs. As a rule of thumb, shallower tread-depth drive tires will be more fuel-efficient, and it is true that any tire will be more fuel-efficient as it wears down its tread."

How much a tire's fuel economy improves with tread wear, however, depends on whether the tire is designed for fuel economy, Walenga says. "Maintenance is a big issue