

# Long-Haul Tires? Think Fuel Economy First

by Phil Mosier, Cooper Tire  
Special to TMC

**W**hen it comes to commercial tires for long-haul, the typical question a tire salesman gets is “how many miles will these tires go? And, how much do they cost?”

“When the answer is given, the customer does some quick math to figure out if the new tires being considered, will be a better solution,” says Gary Schroeder, Executive Director of Cooper’s Global Truck and Bus Tire Business. “That’s a bit old-school thinking. Where tire savings really come into play in the long-haul segments is in how fuel efficient they are. If you’re buying strictly on mileage and price, you’re missing out.”

According to Schroeder, there can be a gap of up to three percent in fuel economy between non-SmartWay tires, and baseline SmartWay-verified tires. “That’s why all the major tire OEs offer SmartWay-verified tires for the over-the-road segment,” he says. “Overall, SmartWay tires represent about 80 percent of the tires on the road. They flat out save money at the pump.”

But, says Schroeder, many fleets don’t realize just how big of a gap there is between all the SmartWay-verified tires that are on the market. “Many assume all SmartWay tires are about the same in fuel efficiency, and that’s simply not the case,” he says. “Fuel efficiency gains can actually be more than going from a non-SmartWay tire to a SmartWay tire. A SmartWay tire meeting the standards compared to an ultra-fuel efficient SmartWay tire can show a difference of three percent— even a little more — in fuel economy. That

can mean more than \$1,500 a year in fuel savings, for the typical long-hauler averaging around 120,000 miles per year. That’s why we advise fleets to compare different tires and their rolling resistance -- a tire manufacturer should be able to run calculations for you. That way you can see how fuel economy might be impacted. Depending on the spread in rolling resistance, fuel savings alone can help offset the cost of your tires -- even pay for a complete set of tires if you really jumped in fuel economy.”

After figuring out fuel economy, Schroeder suggests looking at projected miles to removal and the retreadability of the tire – or the casing value. “Then ask about the price of the tire,” he says. “Calculate all those numbers to see where you’re at, and you’ll then be making an informed decision on what tires are right for your operation. This way you’ll be able to do an apples-apples-comparison.”

So, are the tire fuel saving numbers real? “Yes,” contends Phil Mosier, Cooper Tire’s manager of commercial tire development. “Just like truck manufacturers have wind-tunnels and computer software to calculate aerodynamic gains, tire manufacturers have precision indoor test equipment to measure rolling resistance. Everything is done to ISO standards. Those numbers can be verified in closed-track testing, and in real-world operations with confidence, if all the testing protocols are followed.” (TMC Fuel Consumption Test Procedure – Type II RP1102A)

According to Mosier, the importance of fuel economy in tires was brought to the forefront in 2004 with the advent of the EPA’s SmartWay program. “It was a move to improve big rig



fuel economy and lower pollutants, and it brought tires along for the ride,” he says. “And, it was a good move as tires make a big difference to the overall fuel economy of a truck. To be SmartWay verified, tires had to have 15 percent lower rolling resistance than benchmarked, popular tires on the market. That 15 percent translated to a three percent improvement in fuel economy. What spurred sales of SmartWay tires was when California mandated that trucks had to have SmartWay tires in order to enter and do business in the state. Today, tire technology has improved to make jumps well above SmartWay standards. According to industry studies, roughly a third of a truck’s fuel consumption is used to overcome the tires’ rolling resistance. “Not all wheel positions have the same impact though. Steer tires effect 16 percent of the resistance, drive and trailer tires are at 42 percent each,” says Mosier.

Should fleets just zero in on the tires with the best fuel efficiency? “No, there still needs to be balance,” says Schroeder. “You can give up some miles to removal for fuel efficiency gains, but you shouldn’t have to give up a lot. The tread depth for steer and trailer tires is pretty consistent across the board—about 18/32nds for steers, and 12/32nds for trailers. The wild

card is in the drive tire. Some tire brands can be a full inch in tread depth, others down to 23/32nds. The deeper the tread, coupled with the tread pattern impacts rolling resistance and miles to removal. At Cooper we have 30/32nds of tread so we didn’t sacrifice much in tread depth to improve on our fuel efficiency, and since we have a wider footprint to help dissipate weight and heat, our miles to removal are excellent. We still beat SmartWay numbers by a good margin.”

According to Mosier, improving fuel efficiency in tires comes primarily in tread compounding, but tread design, casings and sidewalls come into play too. “Our chemists are constantly testing new compounds and how they can impact rolling resistance,” he says. “Silica, polymers and carbon black are the main ingredients, but it’s how you combine those ingredients, along with other chemicals, that make the difference. It’s an ongoing challenge, but when you make gains, it’s exciting.”

When it comes to designing tires, Mosier says while fuel efficiency gets the most attention from his team when designing tires for long-haul, it’s a balancing act “as overall performance still needs to be there. We can’t sacrifice tread life, durability, casing life, or traction.”