

The Dirty Dozen of Truck Tires

An industry newbie learns the ropes – and an interesting way to remember the top 12 tire conditions and behaviors you don't want in your maintenance bay.

By Jackie Pobiega – Continental Truck Tires, Communications Manager

When I joined Continental Truck Tires five years ago, I never thought that I would ever understand the world that I had become my profession. In addition to not being a technical person – well, let's face it, I've broken every small appliance my husband has ever given me – the world of trucking was something that was pretty daunting at first. Luckily for me, the tire industry is chock full of excellent trainers, resources and experienced people who are not only passionate about tires, but are good teachers at well.

I've found a fun way to remember all the most common things that these folks have taught me should raise a red flag for a fleet or tire manager. Being a movie and history buff, I classified these things as the "Dirty Dozen" of truck tires. With all apologies to the late Ernest Borgnine, let's meet some of the people and conditions who are the worst offenders when it comes to properly choosing, maintaining and operating a truck tire.

People

Here are some of the folks with some behaviors that sadly, are common still when it comes to truck tire maintenance practices. Despite the excellent efforts of industry groups such as the TIA (Tire Industry Association) and the ATA's Technology and Maintenance Council, the people who fit into these personas are doing both your tires and your operations a disservice.

The Optimist

Based upon his unshakeable faith in highly accurate things like tire thumping sticks, (joking, they're not accurate at all) this fellow believes that checking his air pressure twice a week just isn't necessary. He may even believe that just by looking at a truck tire that he can tell if it's low.

I realize it's not always easy or convenient to check air pressure on 18 tires, but I've seen it done fairly quickly by experienced drivers who, over time, have learned the value of the pre-trip inspection.

As tire manufacturers, we just can't emphasize this enough. Low air inflation is the top cause of premature tire removal, and slow leaks cause 90 percent of tire failures. According to Kevin Naumann,

Continental's senior technical trainer: "Just 10 psi of underinflation is enough to cost you 9 to 15 percent of the tire's tread wear and up to one percent fuel loss."

Not only does this lead to more frequent replacement of tires and greater fuel usage, it can cause costly service calls that no one likes to pay for. As fleet managers, ensuring that drivers and technicians are incentivized to check tire pressure is your first step in turning the optimist into a fellow who trusts, but verifies.

"Hey, Watch This"

One of the most frightening things I have ever seen was a video during Continental's basic *Truck Tire Training Workshop* demonstrating what exactly happens when a truck tire under pressure explodes. The effect convinced me that what I would witness if I ever saw this happen to a person would look like something out of a horror movie.

Sadly, it still happens and the tire industry hears every year about people who are seriously injured or killed by unsafe maintenance practices.

We all operate under pressure to get the job done quickly sometimes, but that doesn't mean we should take shortcuts with safety or engage in downright dangerous practices.

The most scary offenders, Naumann taught me, are failure to use safety cages for inflation, airing the tire up on the truck and not using a whip hose extension, using chemicals – even gasoline or lighter fluid – to seat beads and exceeding 40 psi to seat a bead or leaning over the tire while you do it.

"Inflating a tire beyond 40 pounds to seat the bead is extremely dangerous," he warns. "The bead or even the rim can break, and with extremely explosive force. If both beads aren't properly seated when you reach 40 pounds, the entire assembly needs to be completely deflated, repositioned and lubricated and inflated again."

Old Faithful

Tire equipment that is old or improperly maintained can be robbing the life of your tires and even making them susceptible to damage. Your most basic is your air gauge, but again, as Naumann explains, just because it's your trusted air gauge you've had for years doesn't mean it's accurate.

"We estimate that 15 to 20 percent of all truck tire air gauges in use today are inaccurate by up to 15 psi," he teaches in Continental workshops. Some are even inaccurate right out of the box. Checking gauges against a calibrated master gauge should be on your list of frequent equipment checks in the maintenance bay.

The Bargain Hunter

It is human nature to look for the best deal out there, but is a bargain basement truck tire really a good bet? When it comes to the total cost of ownership, not likely. Not only are premium brand truck tires more likely to have longer removal miles and save fuel, they're also more retreadable, thanks to better belt packages and bead designs, as well as sidewall strength.

So even if your fleet doesn't believe in retreading, you'd be throwing away money if you can't sell back your casings.

Many of the manufacturers have tire calculating software which will help convince the bargain hunters on your team that a premium tire is a better bet over the tire's lifetime.

The Diesel Demon

Continental representatives are trained on fuel efficiency and the factors that can impact a trucking fleet.

The Society of Automotive Engineers states that factors fleets can actually control are speed, inflation, air resistance, tire rolling resistance, load and driveline resistance. When you consider that fuel is a fleet's second largest cost after salaries, then a fleet manager operating in the long-haul or combined long-haul and regional application should realize that a low rolling resistance tire is their best bet.

We like to say that a fuel-efficient tire will trump a mileage tire every time, as long as diesel stays above \$3.29 a gallon.

While tire manufacturers will continue to offer long mileage tires with very deep treads, take a good look at your fuel costs and we'll bet that a low rolling resistance tire will save you more.

The "Sharp Dressed Man"

Clif Armstrong is one of my colleagues and has more than 25 years experience in the truck tire industry. Once, a fleet he was servicing complained that the tires were inferior.

After noticing an unusual amount of impact breaks, Armstrong walked around the yard until he had collected an entire garbage bag of metal and debris. While the shop was impeccable, the maintenance manager didn't realize that he had a veritable knife collection lurking all around the yard.

While today I have rarely seen a yard that wasn't well maintained, as part of regular facility maintenance, have someone check at least once every quarter for foreign object debris and sharp items lurking outside.

The scrap pile analysis Armstrong performed is also another way to notice tire trends in your fleet.

Tire Conditions

Here are a few of the tire conditions that Continental is usually asked to explain. For more information, we recommend attending a tire conditions seminar or referencing a copy of the Technology & Maintenance Council's *Radial Tire Conditions Analysis Guide*.

The Ballerina

After several failed attempts at ballet as a child, the only thing I remember was to point my toes out. If I were a tire, this would be a bad thing. A truck's toe is the distance apart of the steer tires at the front and the rear.

As Mike Beckett of M.D. Alignment has explained in his courses for Continental, when wheel alignments are done, the technician is supposed to set toe in to within 1/16th of an inch. But with a toe-out condition, the tires are closer together in the rear than they are in the front. This can cause feather wear, a condition where all the tread ribs worn so that one side of rib is higher than the other and creating step-offs across the tread face. With toe out, the feather wear is shown from the outside of the tire heading inward.

This condition can also lead to steering wheel vibrations between 45 and 55 mph and a tendency to road wander.

The Pigeon

The opposite of the ballerina above is the toe-in condition, where the tires are closer together in the front than in the rear. With toe-in, the feather wear is presented from the inside edge of the tire heading out toward the rim.

Misalignment, Beckett says, is absolutely critical for fuel economy and tire wear because it causes increased vehicle drag. In fact, he says the Technology & Maintenance council found that improper toe setting is the number one alignment problem in the U.S. that affects tire wear.

Mr. Wrong

Today's truck tire offerings are very diverse. While this is designed to meet market conditions, sometimes we find that the tire specified by the fleet is great in its correct application but isn't right for their operation.

This means that the tire will usually experience that irregular wear that robs it of mileage and even fuel efficiency.

Ask your tire manufacturer to take a look at your application and make sure that the design of the tires you choose is the best for your application. The groove design, sidewall strength and rib pattern can make a big difference.

The Limbo Rock

How low can you go? Not only is trying to get a tire to wear down to the last legal 32nds of tread depth a bad idea because of your potential to violate CSA regulations, you may be short-changing yourself.

According to the Tire Retread and Repair Information Bureau, the retreadability of the casing goes up if the tire is pulled before it reaches the legal limit.

Consult with your tire representative to determine the optimal pull point, which might even be 8/32nds in the linehaul application.

So to ensure maximum value of the casings, whether you plan to sell them or retread for yourself, don't do the limbo. Avoid going too low.

Bear With Me

Wheel bearings are an important setting that affects tire wear. If the steer axle wheel bearings are loose, the vehicle's toe can start to vary – sometimes as much as ¼ of an inch. The results would be tire cupping. In the drive axle with loose bearings, this cupping wear is more common on the inside edge.

M.D. Alignment' Beckett advises to listen to the wheel for bad bearings while spinning the tire to check for run out. A bad bearing could be heard with a rumbling sound before it's too late and the tire experiences excessive wear.

Irreconcilable Differences

Mismatching is neither good for couples, or for truck tires. When it comes to inflation, mismatched air pressures in duals can cause a permanent irregular wear pattern in as little as just weeks, Continental's Naumann says.

The heel and toe wear condition is most often caused by mismatched inflation.

Dual mismatch tread depths (causing tire height differences) cause also irregular wear that costs you money in premature removal. In addition, the taller tire will become over fatigued due to bearing more weight, which accelerates premature casing failure.

Available Help

So, that's a breakdown of the tire related behaviors and service conditions that we, as tire manufacturers, see pretty commonly in the field. If you can remember to avoid this dirty dozen, you'll find that you'll gain more life out of your tire investment.

Make sure to attend any seminars or trainings offered by your tire manufacturer so you can learn even more characteristics and behaviors of truck tires, and you'll soon become a tire expert.

I'm not one yet, but the experts I've quoted here are available to help whenever I need them – and they'd be glad to help you too.

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Seminars or trainings offered by your tire manufacturer can help you learn about the characteristics and behaviors of truck tires.

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