Trailer Tires: Tips & Best Practices

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From a highway blowout to a construction trailer flat on the work site, trailer tire failure is an inconvenience that can be avoided. Use the correct tires, calculate the correct load and maintain the right inflation to avoid problems.

Use the Right Tire

Trailer tire requirements differ greatly from automotive or light truck tires. Trailer tires are designated “ST” for Special Trailer tires. Automotive tires are designated “P” for Passenger or “LT” for Light Truck and are not designed for trailer use. Passenger or truck tires, with their more flexible sidewalls, can result in trailer sway problems. The stiffer, heavy duty sidewalls of ST tires are designed to control and reduce sway problems. Trailer sway is dangerous at higher speeds, with top heavy loads or on vehicles with inadequate tongue weight.

– Trailer tires are designed for use on trailer axle positions only.
– Do not use P Passenger or LT Light Truck automotive tires on trailers.
– Do not use ST trailer tires on passenger cars or light trucks.
– An "LT" designation, when shown on a trailer tire size specifies load range only, it is not designed for use on light trucks.

The ST Difference

The construction, design, materials and testing used in ST Special Trailer tires meet the higher load requirements, duty cycles and special demands of trailering.

– Polyester cords in an ST tire are bigger than in a comparable P or LT tire.
– Steel cords used in ST tires have a larger diameter and greater tensile strength to meet additional load requirements.
– ST tire rubber compounds contain chemicals to resist weather and ozone cracking, particularly conditions resulting from extended storage and the unusual duty cycles of trailer tires.
– The slightly shallower tread depth of a trailer tire reduces sway and rides cooler, which adds to tire longevity.
– ST tires feature stiffer sidewalls, especially in the lower section which:
– Reduces sidewall flexing causing the trailer to track straighter.
– Diminishes the risk of trailer sway.
– Lessens the risk of sidewall puncture and blowout.
– ST tires generally offer approximately 10% percent more load capacity than a similar LT tire and nearly 40% more than a P passenger tire.

Bias vs. Radial

Some ST trailer tires are bias-ply tires, which have crisscrossing cords of polyester and/or nylon. Trailer tires are also offered in radial construction. Radial trailer tires feature plies that run perpendicularly across the tire, with belts (some made of steel) running under the tread.

– Bias-ply trailer tires are recommended for tough, rugged performance and sidewall puncture resistance such as trailers used for construction, agriculture and some marine applications.
– Radial tires are recommended when smooth ride, tread wear, heat and extended tire life are important considerations. Depending upon the trailer duty cycle (storage time vs. actual time in use under load) the mileage expectation of radial trailer tire can be from 5,000 to 12,000 miles. However, under well maintained conditions, proper inflation and correct loads, considerably higher miles have been reported.

Load Limits

Trailers are used for one purpose, transporting loads. A major cause of trailer tire failure is overloading. It's important to know the weight of the actual load of the payload under tow, including all the toys, equipment, gas, gear, water and the trailer itself. An over-loaded tire will produce excessive heat in the sidewall and tread which can quickly cause tire degradation or blowout. Excessive heat is the number one cause of trailer tire failure. The problem increases in sunbelt areas where roadway surface temperatures are well above normal conditions.

All tires are manufactured to handle specific load limits, but in towing trailers, loads are the single greatest concern. Review the tire sidewall information and the vehicle owner's manual for vehicle load limits and proper tire inflation. Never exceed the maximum load rating stamped on the tire sidewall or the maximum vehicle load rating, whichever is less. If possible, try to distribute the load evenly across all tires so that no single tire is overloaded. Tongue weight, tongue height and especially load leveling hitches must be set properly to avoid overloading the trailer tires.

ST tires are branded with a load range (LRB, LRC, LRD, LRE and LRF) on the sidewall, listing load range letters in the sidewall description. For example, ST205/75R15LRD.

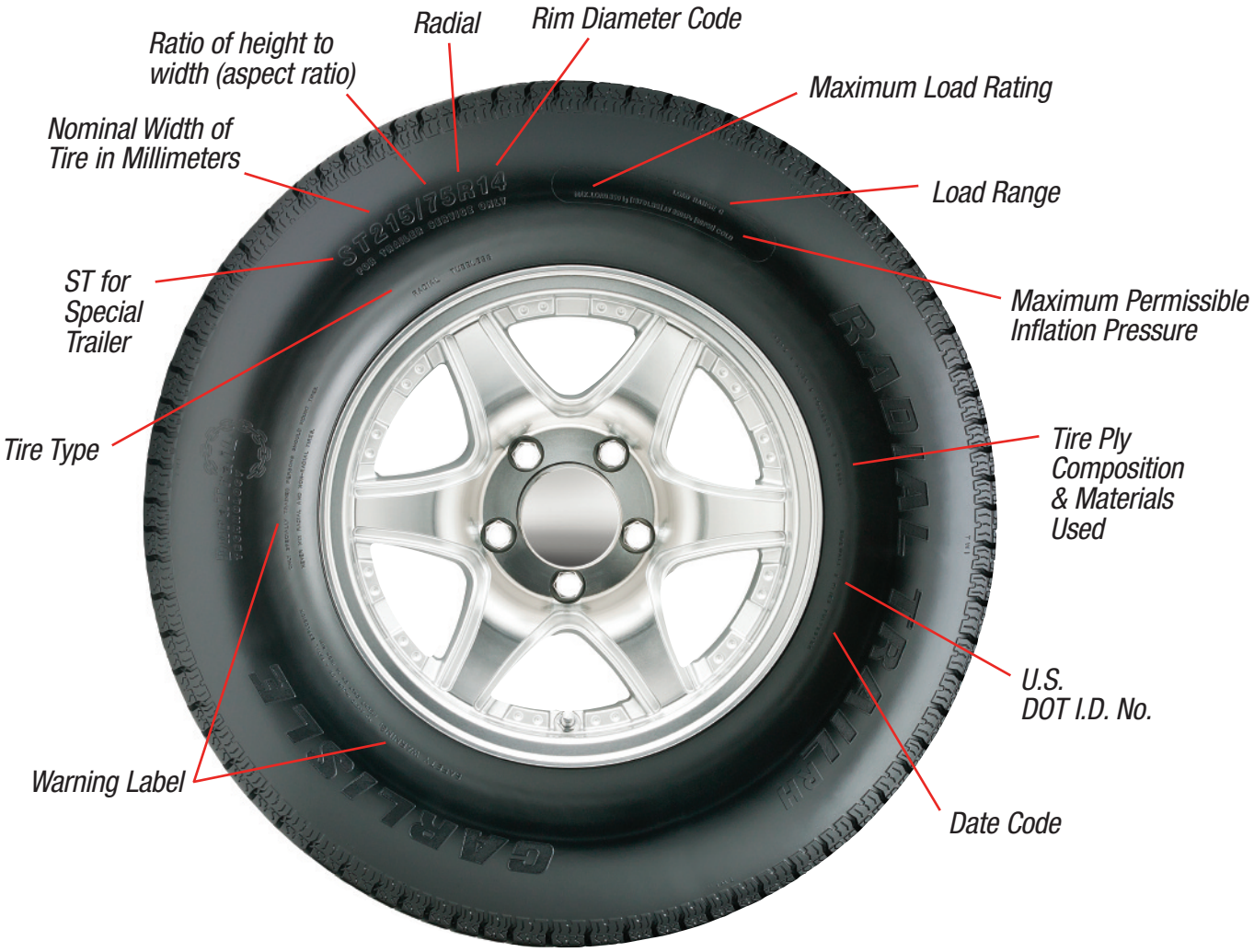
Discuss specific trailer uses to select the ST tire that is load rated for the situation.

– All tires must be identical in size for the tires to properly manage the weight of the trailer.
– The combined capacity of the tires must equal or exceed the Gross Vehicle Weight (GVW) of the axle.
– The combined capacity of all of the tires should exceed the loaded trailer weight by 20 percent.
– If a tire fails on a tandem axle trailer, replace both tires on that side.
– If the tires are replaced with tires of a larger diameter, the tongue height may need to be adjusted to maintain proper weight distribution.

Inflation

Underinflation is the number one cause of trailer tire failure. Low inflation pressure elevates tread temperature, especially as speed increases. A tire can lose up to half of its air pressure and not appear

Trailer Tires:
Understanding Tire Sidewall Information



Trailer Tires:
Tips & Best Practices, Continued

to be flat. Check inflation with a quality tire gauge. Operation of a trailer tire that is 30 percent under-inflated can reduce tire lifespan by approximately 55%. An underinflated tire creates abnormal tire flexing and excessive heat causing the following:

– Tire damage and failure.
– Ride and handling disturbance.
– Reduction of tire life.
– Decreased fuel efficiency by as much as 10 percent.

Driving on tires with too much air is also not recommended. Over-inflated tires are more likely to cut, puncture or fail by sudden impact.

When replacing trailer tires, always use new valve stems.

Replacement of Trailer Tires

Trailer tires can be worn beyond use although they may appear to have adequate tread. This is because trailer tires support a lot of weight, even when not in use. It is actually better for a tire to be rolling down the road than to sit in storage, exposed to static weight and UV exposure. During use a tire releases compound lubricants that are beneficial to tire life. Using tires also assists in preventing flat spots from developing.

If one tire fails, the remaining tires will be required to suddenly compensate by supporting the increased load. This increase of weight may overload the other tires causing a chain reaction blowout or other internal structural damage. After a blowout, check the other tires for damage and replace all tires on the side of the blowout.

Best Practices

– Any tire, no matter how well constructed, may fail when in use because of punctures, impact damage, improper inflation, overloading, or other conditions resulting from use, misuse or neglect.
– High speed towing in hot conditions degrades tires significantly.
– Best practice. Do not exceed 60 mph while towing a trailer.
– Most ST trailer tires have a maximum speed rating of 65 mph.
– Load carrying capacity decreases as heat and stress generated by higher speed increases.
– Time and the elements weaken a trailer tire.
– 3 to 5 years is the average life expectancy of a trailer tire, regardless of mileage.
– It is estimated that in approximately three years, roughly one-third of a tire's strength is gone.
– After three years, depending upon storage and conditions of usage, consider replacing trailer tires even if they have tread depth remaining.
– After five years, trailer tires should be replaced in all cases.

Review - Practices for Safe Trailer Tire Use

– Select the correct tires to match the application and capacity requirements.
– Never use passenger car or truck tires for trailer use.
– Do not overload trailer tires, maximum loads are listed on the sidewall of the tire.
– Maintain air pressure at the maximum PSI recommended on the tire sidewall.
– Check tire pressure when tires are cold and in the shade.
– Use a cap on valve stems to prevent contamination of the internal rubber valve.
– Always travel with a spare and check the spare air pressure along with the other tires.
– Perform a visual inspection of trailer tires before each trip, inspecting for cuts, bulges, punctures or signs of anything unusual.
– Inspect trailer wheels. If rims are bent or cracked, replacement or repair may be necessary.
– Keep trailer tires in a cool dry place and out of direct sunlight during storage.
– Use tire covers to protect tires from the harsh effects of direct sunlight, moisture and temperature extremes.
– During extended storage, use a thin piece of wood or other surface barrier under tires to extend tire life. For seasonal or extreme long term storage, elevate the trailer on blocks to take the weight off the tires. Reduce the air pressure and cover the tires to protect them from direct sunlight.
– Replace trailer tires every three to five years.
– If you experience a series of successive blowouts, something is wrong with your setup, it is not a tire problem.

When it's replacement time, Carlisle offers a complete line of tires designed for most towing applications. Whether your precious cargo is your new bass boat, construction equipment or a family travel trailer, enjoy long, safe travels using the correct tires, properly inflated and within the designated load capacity.

The Carlisle Radial Trail^{RH}. Tow with Trust.™

Official Tire - American Bass Anglers Tour.

