

COMMERCIAL FLEET TIRE DIGEST

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COMMERCIAL FLEET TIRE DIGEST

*The authoritative guide to reducing commercial tire expenditures from
Pressure Systems International,
the manufacturer of the Meritor Tire Inflation System by PSI™*

VOLUME 5 ISSUE 1

JANUARY 2011

What are my tire retread options?

Contact
Al Cohn
at
210-508-6260
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Tires 101
Class for
Drivers/
Mechanics

Almost 90% of commercial trucking fleets retread their drive and trailer tires at least one time. Most retreads cost anywhere from a third to half the cost of a new tire so it is an obvious and significant cost advantage for fleets to be running retreads. The most successful long haul tire programs typically can reach up to two retreads assuming they have a serious comprehensive tire maintenance program in place. In pickup and delivery operations where the tread is scrubbed away at a very high rate, three, four and more retreads are possible.

There are basically three types of retread technologies that are available in the marketplace:

- Mold Cure
- Pre-Cure
- Spliceless Pre-Cure

In Mold Cure systems, the tread is buffed away down to the casing where unvulcanized tread rubber (no tread pattern) is applied. The tire is then placed in a mold and a combination of heat, pressure and time is applied with the new tread design in the rigid mold. The process of heat, pressure, and time is known as curing a tire.

In Pre-Cure retread systems, after the tread is buffed down to the casing, a thin layer of rubber called cushion gum is applied around the casing. Tread rubber that has already been vulcanized and has a tread pattern (pre-cured) is now applied

around the tire. The cushion gum helps keep the tread in place and creates the bond between the casing and the new tread. The two ends of the pre-cured tread are spliced together then the tire is placed in a curing chamber vulcanizing the new tread onto the tire casing.

Spliceless Pre-Cure is the most recent innovation in the retread process. Spliceless pre-cured treads are not extruded in flat pieces (pre-cure retread process), but rather are molded in one piece circular molds. The circular tread is stretched over the buffed casing followed by a curing process similar to the pre-cure retread curing operation.

In all three retread processes, there are many tread compounds, designs, and tread depths available to the fleets. There are going to be differences in performance between and among the final retreaded tires with the various retread manufacturers.

Fleets should run their own internal evaluation to determine which retreads show better bottom-line tire performance than the others. It is very important to visit your local retreader and review their entire process including how they inspect tire casings, how they make casing repairs and how they train their workforce. The specific retreader can have a greater impact than the specific retread tire process. And of course there are price differences between each retread process which will affect your tire cost/mile analysis. A good recommendation is to work closely with your tire professional and talk with other similar fleets to get their perspective.

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Q&A PSI ANSWERS YOUR QUESTIONS

Q: I just purchased a brand new stick type air pressure gauge at my local truck stop. I paid \$20 but it is giving pressure readings 5 psi higher when compared with other gauges in our shop. Is this normal?

A: Pressure gauge accuracy is typically +/- 3 psi brand new out of the box. So if you are checking a tire with 100 psi, you could find that the gauge may read anywhere from 97 to 103 psi. The only way to verify accuracy is to use a "master air gauge station".

(Please refer to the April and May 2010 issues of The Tire Digest discussing Tire Gauges)



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VOLUME 5 ISSUE 2

FEBRUARY 2011

Diesel Fuel on the Rise

NHTSA reports, at the Annual TMC Meeting (2/10/2011), a **1.4%** increase in fuel economy in controlled testing with ATIS and TPMS

This month diesel prices are reaching above \$3.50; and with the current unrest in the Middle East, the forecasts are for prices to continue to escalate. This is not a good scenario for keeping the #1 fleet maintenance cost, fuel, in check. The #2 maintenance cost next to fuel is tires so it is a good time to review your tire program to insure that you are doing all the right things to maximize fuel economy.

Maintaining proper tire pressure will have the most impact on maximizing fuel economy. Numerous industry studies all show the same result: If you run 10% underinflated it will cost you about 1% in fuel economy; 20% below the proper pressure equates to about 2.5% drop in fuel and if you were 30% underinflated you are looking at over 4% loss in vehicle fuel economy. A common scenario, especially on trailers, is to have the outside dual tire at 100 psi while the inside dual is 70 psi. This unequal air pressure on the same axle will magnify the drop in fuel economy because the tire with 70 psi has a different RPM versus the 100 psi tire, resulting in irregular wear developing very quickly. When you have a tire with shoulder cupping instead of smooth even wear, the fuel economy gets worse.

A typical radial 295/75R22.5 tire with 100 psi has a tire footprint (contact patch) about 7" long. When that same tire is running at 70 psi (30 percent underinflated) the footprint length increases to

8.25". That is 18% more rubber on the road. More rubber on the road will increase the tire rolling resistance leading to the drop in fuel economy. For every increase in the footprint length, there is a corresponding drop in fuel economy.

Filling the tires initially with the proper air pressure isn't enough because tires lose air regularly because of these three primary reasons:

- Osmosis through the tire casing (1 – 4 psi per month depending on specific make/model)
- Tread area punctures (2 -3 psi or more per day)
- Valve core/stem

The question is how often should I be checking my tire pressures: every day, every week, every month or only during the PM? It depends. You can take the time to check every tire before leaving in the morning, but one can run over a nail at any time... even just leaving the yard after spending 15 minutes checking air pressure in 18 tires. And, when you check a tire, you need to be using a calibrated tire pressure gauge.

You should work with your tire professional to insure that you have a serious tire inflation program. TPMS (Tire Pressure Monitoring Systems) and ATIS (Automatic Tire Inflation Systems) are all options to keep those tires running at the recommended tire air pressures.

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Q&A PSI ANSWERS YOUR QUESTIONS

Q: What air pressure do you recommend I run for my widebase trailer tires?

A: It all depends on what is your worst case load scenario. Check the load inflation tables provided on the web sites of any of the tire company websites.



COMMERCIAL FLEET TIRE DIGEST

The authoritative guide to reducing commercial tire expenditures from Pressure Systems International, the manufacturer of the Meritor Tire Inflation System by PSI™

VOLUME 5 ISSUE 3

MARCH 2011

How Can You Mitigate the Soaring Price of Tires?

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Prices for tires have gone up anywhere from 15% and 35% since early 2009 depending on specific tire manufacturer. The reasons are varied: rubber shortages, increased worldwide demand for tires and of course, the price of oil which is spiking (again).

A typical radial 295/75R22.5 low profile radial tire weighs about 120 pounds comprised of about forty different components, ten or more rubber compounds, several different types of steel, and even some fabric. Natural rubber and compounds that contain many ingredients that are oil based make up most of the materials that go into truck tires.

Since the summer of 2009, natural rubber prices have escalated well over 200%. This material is a key ingredient in truck tires because it generates low heat buildup compared to synthetic rubbers. Shortages are being caused by flooding in Indonesia that has significantly damaged rubber producing trees. And, countries like Thailand have cut back on rubber plantations deciding instead to grow oil palm trees. Floods and droughts both spell disaster for rubber plantations.

At the same time that less rubber is being produced, the worldwide automotive and trucking sectors are back in a major growth mode. Countries like China and India are purchasing as many radial tires as they can find in the market, including both passenger and truck tires. And now,

with the continued turmoil in the Middle East, oil continues to climb in price increasing the cost dramatically of all those oil-based raw materials.

All these issues have combined to radically increase the cost of tires for fleets, large and small and especially for owner/operators – so what can you do to offset this drain on your finances?

Making the investment in fuel efficient tires can certainly make a positive impact. A lot of fleets are reluctant to purchase these fuel efficient tires because of the higher initial purchase price. But, if you can increase your vehicle fuel economy even 1%, the return on investment is well under twelve months. It is well documented that these fuel efficient tires do make a positive difference in the amount of fuel consumed. Of course, you can purchase the highest rated fuel efficient tire on the planet, but if you do not keep the proper air pressure in the tire all the time, you will totally lose any benefit when it comes to fuel savings. As we've discussed before, an under-inflated tire will have a longer tire footprint with more rubber on the road surface increasing the tire rolling resistance and adversely affecting tire fuel economy. A tire that should be running at 100 psi but has lost air and is running at 70 psi will have 18% more rubber contacting the road surface (longer tire footprint) and can reduce fuel economy by almost 3%. Oil prices not only affect the cost of tires but certainly increases your fuel costs... So that 3% can have a huge impact on your bottom line.

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Q&A PSI ANSWERS YOUR QUESTIONS

Q: I was considering the use of retreads on my steer axle for those vehicles that are in local pickup and delivery service. Is this legal and safe?

A: Retreads are permitted by law to run on any axle position (including steer) except for the steer axle of a school bus application. Today's retreads are very safe and reliable. That is why over 90% of fleets retread their tires.

Tire/Wheel End Balance and Runout:

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class for
your
drivers

Fleets have different perspectives on tire/wheel balancing. Assemblies that are out of balance can lead to vibration, irregular tire wear leading to early tire removals and driver discomfort. Understanding balance and tire runout can be confusing. An out of balance rotating assembly exists when there is an unequal distribution of weight about the rotating axis.

A tire/wheel assembly can be static or dynamic out of balance. If there is a static out of balance, the assembly will **bounce**. Appropriate sized weights will bring the assembly into static balance. The standard practice is to put half the weight on one side of the wheel and half the weight on the other side. Just because the assembly is statically balanced does **not** mean that it is dynamically balanced.

Dynamic imbalance causes the assembly to **wobble**. Dynamic balancing systems tell you how much weight to put on each side of the wheel and what location to place it. If an assembly is dynamically balanced it is also in static balance. Dynamic balancing considers assembly balance in two planes while static balance takes into account only a single plane.

Runout is an up/down or side to side visible movement when the assembly is rotated. It can be measured by using a runout gauge that has a needle. There are two kinds of runouts, radial and lateral. If when you place the runout gauge

a given distance from the centerline of the tread and rotate the assembly the distance between the needle and the tread remains constant, that assembly has zero runout. If there is a radial runout, its effect is to raise and lower the vehicle as it moves along and the result is a vertical hop or bounce.

Lateral runout can be measured by placing the runout gauge near the tire sidewall. When the assembly is rotated and the distance between the needle and the sidewall is constant, the lateral runout is zero. When there is lateral runout, the result is a side to side movement of the rotating assembly which leads the vehicle traveling alternatively right and left. The driver would feel a shimmy or wobble.

Fleets are typically encouraged to check their tire/wheel assembly balance on the steering axle. In most cases, if a driver reports a vehicle vibration issue, getting the steer tires in balance will usually solve the vehicle vibration issue. It is also recommended to balance the drive tires if the driver's seat vibrates.

Keeping your tire/wheel assemblies in balance will help maximize tire removal miles and keep your drivers happy.



Runout Gauge

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Q&A PSI ANSWERS YOUR QUESTIONS

Q: With my tire prices continuing to escalate I am considering using retreads on both my steer and drive wheel positions...is this OK?

A: Most fleets currently use retreads on the drive position. Retreads can legally be used on the steer axle (except for school busses); however we are unaware of any line-haul fleets that currently use retreads on their steers. Vocational fleets such as innercity pickup and delivery and waste fleets sometimes run retreads on the steer axle.



May 30, 2011 is
Memorial Day.
Please remember
all men and
women who
have died in
military service
to the
United States.

CSA & Tires - An Update

The latest Safety Measurement System (SMS) Methodology document has been published by FMCSA and can be downloaded at csa2010.fmcsa.dot.gov/about/basics.aspx. This 123- page document details and quantifies how the SMS score is calculated. The SMS score allows the enforcement community to identify specific safety problems for fleets, and will be used to continuously monitor on-road performance to determine whether a carrier's safety performance has improved or if intervention is warranted.

Tires have a major impact on a fleet's SMS score. They fall into the vehicle maintenance category of the Behavior Analysis & Safety Improvement Category (BASIC) system. The violations associated with tires can be found on pages A19 – A20 in the appendix of the referenced SMS Methodology document. FMCSA tire violations are found in Section 393.75 of their code. FMCSA has attached a violation severity number to be used in calculating the SMS score; depending on the specific tire issue either an (8) or a (3) will be applied for each violation.

Violations that carry the (8) severity rating include:

- Flat tire or fabric exposed
- Ply or belt material exposed
- Tread &/or sidewall separation
- Flat tire &/or audible air leak
- Cut exposing ply &/or belt material
- Steer tire tread depth less than 4/32"
- Drive, trailer, dollie tire tread depth less than 2/32"

It is obvious that a walk-around vehicle inspection that includes tires should easily identify these high severity violations.

Tires which show cuts and exposed steel or fabric are not recommended to be run-

ning on your vehicles. Tires with tread depths below 4/32" for a steer and 2/32" for all other wheel positions have been in effect for just about forever. A simple tread depth gauge will identify low tread depth tires. A tire with an audible air leak must have a large puncture and will lead to an eventual tire failure. Just looking at a tire on a vehicle will not determine if a tire is "flat". It must be measured with a calibrated tire inflation gauge. The Commercial Vehicle Safety Administration (CVSA) considers a tire flat when the measured air pressure is less than 50% of the maximum tire pressure molded into the tire sidewall. The current industry standard followed by most fleets in considering when a tire is flat and needs to be removed is 20% below the fleet air pressure specification.

Violations that carry a (3) severity rating include:

- Tire underinflated based on load
- Regrooved tire on the steer axle
- Weight exceeds tire load limit

Regrooved tires are primarily used by bus fleets and are not an issue for trucking fleets. Exceeding a tire load capacity is never suggested for tires and is clearly illegal. The violation on this list that can and probably will affect many fleet SMS scores is tire underinflation. Every industry study shows that tire underinflation is a widespread issue, especially on inside duals and trailer tires. The dilemma here is that nobody has clearly delineated a definition of underinflation. Is it 10%, is it 15%, or maybe 20% or even higher? And, is it based on what is written on the tire sidewall or is it based on the fleets tire air pressure specification? Because of the ambiguity surrounding how underinflation is determined, a fleet could rack up points fairly quickly as enforcement officers use their criteria to determine that tires on an 18-wheel rig are underinflated assigning three points for each one.

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Summertime & Your Tires



Al Cohn and Frank Sonzala from PSI will be live on Truckin BozoRadio Network 12:00 - 6:00 am July 1, 2011. Tune in to AM 700 WLW XM/Sirius Channel 166. Talking Tires, Inflation, CSA and Awarding Prizes Galore

Alligators on the nation's highways become more prevalent every summer season. Driving on some segments of the interstate system is like driving through a slalom course. Drivers need to pay close attention to avoid this nasty road debris and be ready to react. A road alligator can do significant damage to your vehicle running at high speeds.

The motoring public believes that alligators come from those "awful" retreads. This is a total myth. Today's retreads utilize state of the art technology. From the hi-tech tire casing inspection process all the way through building and curing, retreads will have similar treadwear characteristics (miles/32") versus a new tire. Traction is uncompromised. Retreads typically do have a little less initial tread depth to keep the casing running cool versus new tires so total miles at removal will be slightly lower. There is a reason that 90% of all fleets run retreads today; it's an economically smart decision.

were run underinflated. Tires, regardless if they are new or retread, require air to carry the load. Tires that run underinflated will eventually fail and become a road alligator. Summertime is the worst time for alligators because of the high ambient heat which is then compounded by additional heat caused by serious sidewall flexing in an underinflated tire. Heat is a tire's worst enemy. High speeds, high loads, and an underinflated tire will lead to a road alligator.

So why does a tire lose air? A tire is like a balloon. You add air to a balloon and through the osmosis process, the balloon slowly loses air. Commercial radial truck tires can similarly lose anywhere between one and four psi per month depending on the specific materials used to produce the tire. Tread area punctures are the primary reason tires can become underinflated in a very short time. A 12-penny nail that has penetrated through a tire groove and into the casing can cause a tire to lose several psi in a 24-hour period. It will not take very long for a tire to begin generating extra heat which can lead to a tire road failure.

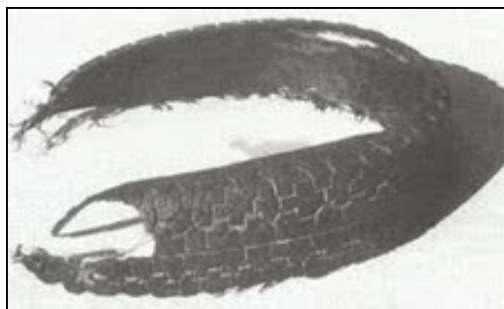
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So what are those alligators on the highway? Industry studies always show the same results. Alligators may be from new tires or they may be from retreads. The one common denominator is that the tires

Industry road debris tire surveys find a high percentage of alligators to be from trailer tires. That's because trailer tires are the most neglected wheel position, and inside dual trailer tires usually have the lowest air pressure. It is not always easy to bend down, grab your pressure gauge and squeeze inside the wheel hand hole and measure those inside tires.

A high percentage of fleets are using tire pressure monitoring or automatic tire inflation systems to keep trailer tires running at the proper inflation pressure. Keeping tires properly inflated all the time will seriously minimize the road alligator problem.

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VOLUME 5 ISSUE 7

JULY 2011



*Thanks to our
troops serving
around the
world for
protecting our
independence
and freedom !*

Tire & Pressure Build-up

You check a tire at 8 AM and the ambient temperature in the shop is 70°F. The pressure measured using a calibrated gauge is exactly 100 psi. The fleet specified air pressure is also 100 psi so all is good and the mechanics are happy as the vehicle leaves the yard. Within two minutes it's moving down the interstate at 65 mph with a fully loaded trailer. Within five minutes of leaving the yard, the driver jumps out of his cab and checks the tire which now measures 107 psi. He gets back on the road and drives an additional twenty minutes and checks that same tire again. The tire pressure now measures 115 psi. Thirty minutes later the tire pressure is still 115 psi while the outside temperature has not risen from the 70° F. It is now time for a brief five-minute coffee break. The driver checks the tire pressure after finishing his coffee and finds 118 psi. The sun is shining brightly on that specific tire causing the rise in tire pressure.

The driver now gets back on the highway and runs for another hour before checking the tire pressure again and it's still 118 psi. The tire has reached a steady state condition and will stay at the temperature assuming all operating conditions remain the same including the outside temperature. But of course that is not going to happen. The road surface will have an impact on the tire pressure as well; for instance the difference between concrete and asphalt. The surface temperature of asphalt is usually hotter than concrete and may increase the tire pressure another one or two psi. The tire pressure may reach 120 psi due to this. Vehicle speed can increase the tire pressure even further. Running at 75 mph versus 65

mph will generate even more heat and the tire pressure may reach 125 psi.

Should you be concerned that the tire is 25% "overinflated" at 125 psi? The answer is simple. NO! Tires are designed to take all these load, speed, and temperature variables into account when a commercial radial truck tire is designed, developed, and tested. Welcome to the real world. This is why all tire companies clearly state in their literature to never check a hot tire for pressure because you will think that the tire is overinflated when the air pressure is exactly where it should be. Don't take air out of a hot tire! A truck tire can take four to six hours to revert back to its original pressure. You simply do not know where in the cycle you are checking the tire pressure. The recommendation is to check your tire pressures first thing in the morning after the tire has cooled down overnight.

However, cold weather can create a different challenge. As an example, a tire that has cooled down after running all day and measures 100 psi at 70°F will lose pressure if it sits out overnight and the temperature drops to 20°F. When the tire is checked in the morning, you will find only 90 psi in the tire because when the temperature drops, so does the tire pressure. Every loss of 10°F equals a loss of two psi. You may think that the tire is underinflated but it is NOT. As soon as it warms back up to 70°F, the tire pressure will be back to the specified 100 psi.

We always say that heat is a tire's worst enemy. It is when a tire running underinflated generates excessive internal heat due to the increased sidewall flexing and longer tire footprint (more rubber on the road). An underinflated tire is always much more serious than a tire being a few psi over inflated. Excessive heat will eventually lead to tire failure.

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VOLUME 5 ISSUE 8

AUGUST 2011

What You Need to Know About Tire Valves

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Most fleets consider tire valve stems and valve hardware as an afterthought but there are many issues associated with valve stem hardware that fleets need to be made aware.

The selection of valve hardware is based on: wheel type, wheel size, and tire air pressure specification. Most of today's valves are made out of brass because it is corrosion resistant and can easily be bent to facilitate servicing. Valves for aluminum wheels are brass with chrome plating. Companies that produce tire valves should have a TR number stamped on the valve stem. A TR number is the official Tire & Rim Association designation. Tire & Rim Association (www.us-tra.org) publishes industry recommended dimensions (specifications) for producing tires, wheels, and valves.

Truck valve stems are high-pressure valves that can handle the maximum tire pressure molded into the tire sidewall of commercial truck tires. Truck tire valves are typically rated at 200 psi. There are valve stems designed for steel wheels and other valve stems designed for aluminum wheels.

For the most common tubeless radial truck tires with a 5 degree drop center steel wheel & 0.625" diameter valve hole, valve stems TR500 and TR501 are typically spec'ed. The TR500 valve is 2.00" long compared to the TR501 which has a length of 1.50". The other common valve stem for steel wheels is the TR570C. These clamp-in style valves are not straight like the TR500/501 series. They have a bend angle. There are various bends available depending on your specific application. The valves with various bend angles are the TR571C, TR572C,

and the TR573C. Recommended torque is 35 – 55 inch-pounds for the TR500, 501, 570-573 series.

Truck valves come furnished with standard rubber grommets that are normally rated to about 300°F. If your application sees excessive heat, there are special rubber grommets that are rated at 400°F and higher.

For aluminum wheels, there are several different types of truck valves depending on wheel type. O-ring seal type TR540 series is used on 15 degree drop center wheels with a 0.380" valve hole. If the valve hole is 0.625" then you must use either the TR509, 510, or 511 valves. These are all bent valves with various lengths. TR509 is 4.75" long, TR510 is 5.50", and TR511 is 4.25" in length. Recommended torque is 100 – 125 inch-pounds.

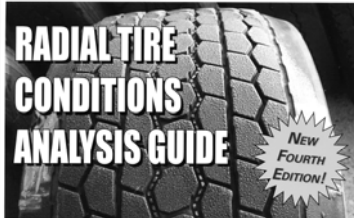
Valve cores are the secondary seal of the valve assembly and are exposed to heat. If there is no valve cap, then it is also exposed to ice and dirt. The valve core must be in good working order with no debris within it since debris will not allow the core to seal properly. Truck valve cores typically have a red seal with a temperature range up to 250° F. Valve caps are the primary seal to the valve stem assembly and prevent contamination of the valve core. A metal sealing, high temperature valve cap or inflate-thru cap must be used on every valve stem. Gaining in popularity are double seal or inflate-thru valve caps that provide two seals. These allow tires to be pressure checked, inflated, and deflated without removing the valve cap.

Always buy good quality valve stems that adhere to SAE standards and have a TR number. The major tire supply companies sell a valve stem torque wrench which is highly recommended.

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Tire Underinflation - Major Factor for Tire Issues



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1-800-ATA LINE

Recently, TMC of the American Trucking Association, released their 4th edition Radial Tire Conditions Analysis Guide. This outstanding manual is recommended for all fleets in identifying tire issues. It's amazing how many tire conditions are caused in part or in full by underinflation. Even though we have been preaching the importance of keeping your tires inflated ALL the time for more than 30 years, it is still a serious issue for fleets. There are several reasons why underinflation continues to be an issue even for the best maintained fleets:

- Takes too long to check 18 or more tires
- Get dirty
- Lots of bending over & reaching into the wheel hand-holes to check the pressure
- Gauges are inaccurate
- Check a tire pressure before you leave and then you can pick up a nail 5 minutes later

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The list of tire conditions where underinflation is a cause fall into 2 primary categories:

- Casing Conditions
- Tire Wear

By casing, we mean any tire issue that is NOT associated with the tread. It is everything below the tire tread. The tire wear category is specifically tire wear conditions where underinflation played a role. When irregular wear develops, that tire will be coming out of service early which will significantly affect your tire budget. The best solution is to maintain a serious

tire program with the goal of keeping tires inflated to the spec pressure ALL the time.

Casing Conditions:

Bead Area

- Bead Damage from rim flange wear
- Bead Deformation
- Bead damage due to overload/underinflation
- Reinforce/chafer separation

Sidewall Area

- Crack at edge of retread wing
- Circumferential fatigue rupture (zipper break)
- Run flat (only sidewalls remain)

Crown Area

- Wild wire
- Lug base cracking
- Rib tearing
- Belt lift/separation

Tire Interior

- Open innerliner splice
- Innerliner cracking
- Pulled/loose cords
- Run Flat
- Failed tire repair from underinflation

Tire Wear:

Steer Axle

- Cupping/scallop/wavy wear
- Rib depression/punch wear
- Spot wear

Drive Axle

- Rapid shoulder wear – one shoulder
- Shoulder wear/chamfer wear
- Heel/toe wear

Trailer Axle

- Center Wear
- Shoulder step/chamfer wear
- Cupping/scallop/wavy wear



Don't get
Tricked by
Underinflation,
Treat Your Fleet
to Automatic
Tire Inflation
Systems

Fleets & Fuel Economy

Maximizing fuel economy is the key to success in maximizing fleet profits while reducing greenhouse gas emissions. Every fleet is looking at all viable options for both the tractor and trailer when it comes to fuel economy. So what are these options and do they offer a short return on investment?

Reducing speed is one option because fuel economy gets worse the faster a truck travels. Many fleets are looking at reducing their top speed from 65 to 62 mph. Depending on your specific engine set up the rule of thumb is a 0.01 improvement in miles/gallon for each drop of one mile/hour. Going from 65 to 62 mph should save about .03 miles/gallon. Reducing idle time is another great way of reducing your fuel costs. Some fleets are using financial incentives with their drivers when they keep the idle time to a minimum.

A recent industry sponsored study showed that the driver has a tremendous effect on fuel economy. In line-haul service, a good driver averaged 11% better fuel economy versus an aggressive driver. This is magnified in pickup and delivery service where there is much more braking and turning. In P&D, there could be as much as a 33% advantage for the non-aggressive driver in fuel economy. Driver education can play a tremendous role in reducing fuel costs.

Improving the aerodynamics of the vehicle is another option for improving fuel economy. Trailer skirts are becoming more popular and in some cases have shown up to a 7.4% reduction at 60 mph in fuel consumption. Another good way to improve vehicle aerodynamics is to adjust the fifth wheel keeping the

trailer as close as possible to the tractor. There are a few fleets that are also using hubcap covers and even trailer "nose cones" that are installed on the back of the trailer to improve the aerodynamics.

Reducing vehicle weight is an obvious way to improve fuel economy. The key here is to use light weight components that will not adversely affect durability. Tires also play a large role in fuel economy. The reason the new generation of wide base tires have proved so popular (sales doubling every year for the last 10 years) is the weight savings and fuel economy improvement versus running duals. Running wide base tires on both the drive and trailer wheel positions along with aluminum wheels can save up to 1000 pounds. Maintaining the proper tire pressure is critical for these wide base tires. Running even 10% under-inflated will lead to irregular wear and early tire removals. Most fleets that run wide base on the trailer position also run an automatic tire inflation system which adds air to the tires as the vehicle is moving down the highway. Underinflation also affects fuel economy with dual tires. If you are running dual tires, underinflated tires can reduce fuel economy two or even three percent. Those inside duals which are rarely checked for proper inflation can be as much as 30 or 40 psi lower than the outside duals. When this happens, the tire rotations per mile change dramatically and fuel economy drops even more so.

There are many options for fleets when it comes to improving fuel economy and saving significant costs for your fleet. Work with your suppliers and talk to other fleets to get their input as to those fuel economy improvements which gives the fastest payback.

Q&A PSI ANSWERS YOUR QUESTIONS

Q. As an owner/operator I check my tire pressures once per week. The tire pressures never seem to be all the same. Sometimes I see a 7 or 8 psi difference between tires. Is that normal?

A. If you make sure all the tires are set at 100 psi and then check a week or 2 later, you can be certain that there will be a range of tire pressures when you go to recheck. The outside duals will probably be a few psi higher than the inside duals because the sun has been beating down on that wheel position. Some tires may lose more air due to osmosis. It's also possible a tire may have picked up a nail and now is slowly losing air.

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**May you and
your
family have a
joyous holiday!**

If you ask a fleet why they are working with ABC tire dealer you usually get a response similar to "Joe has been working with my fleet for 20 years. He knows my various operations and understands which tire choice will work best for me. ABC supplies my new tires, retreads, and emergency road service. When there is a tire related issue, Joe just handles it. Joe has put together a tire inspection program and makes sure we have our tires running at the correct pressure all the time. ABC keeps our tire cost per mile at a minimum."

It is very clear fleets want to work with a tire professional that they know and they can trust to make the right decisions for their fleet. Fleets want continuity with their tire dealer. The last thing they want to deal with is a new tire salesman every three months.

Tire prices continue to climb due to all sorts of reasons. If you don't have a serious tire program in place the tire cost/mile will become unbearable. Today's radial truck tires are an engineering marvel when you think of all the abuse they take during the course of a single day. In one ten-hour driving day at 60 mph, a truck

tire will experience over 250,000 revolutions at a high rate of speed. In truth, there is not a huge difference in treadwear, traction, retreadability, and overall performance between tire model A and B. Sometimes Tire A will generate maybe 5% better mileage than Tire B or vice versa. Maybe fuel economy is a little higher with one tire brand versus another. Fleets generally make their final tire buying decision based on that local tire dealer described above who provides all the value-added support which is required to maintain a total tire program and keep tire cost per mile in check.

Typically vehicles are running all over the country so most fleets choose a tire supplier who is part of a larger, nationwide network. It is really important for fleets to find the products and services they require anywhere their vehicles may be travelling. This usually means 24/7 availability. Many networks provide standard pricing and centralized billing through their local dealer or truckstop.

The bottom line is that fleets know how critical tires are to their company's overall profitability. Establishing a relationship with a tire dealer who can provide one stop shopping and support means so much to a fleet's overall success.

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Q&A PSI ANSWERS YOUR QUESTIONS

Q. I am considering retrofitting 100 trailers equipped with dual tires to the new 445/50R22.5 wide base single tire. There appears to be several options with various wheel outsets. Is there a specific recommendation regarding which wheel to spec?

A. When running 22.5" dual tires, the overall width measured from outside dual tire to outside dual is 92.4". There are 3 options of widebase wheels that are available with outsets of 0", 1.13", and 2.0". The 2.0" outset wheels are the most common because the overall width from the left tire to the right side tire is 92.0" which is closest to the overall width when specing dual tires. If you use the 1.13" wheel outset the width is 90.4". Specing the 0" outset wheel gives a width of only 88.2".