



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

## Trailers and Aerodynamics

With diesel fuel prices hovering in the \$4.00 per gallon range and higher, fleets are taking a closer look at improving trailer aerodynamics to improve overall vehicle fuel economy.

Some of the many aerodynamic and fuel improvement products on the market for trailers include:

- Side skirts
- Undercarriage products
- Low rolling resistance tires
- Rear door fairings
- Fairings for gap between tractor and trailer
- Automatic Tire inflation Systems

The California Air Resource Board known as CARB, an extension of the California EPA, has issued its Greenhouse Gas Emission Reduction Regulation for Tractor-Trailers effective January 1, 2010. The regulation affects all 53' van and reefer trailers that travel in California regardless of where the vehicle is registered. A fleet can reduce greenhouse gas emissions by improving fuel economy.

For new trailers, the CARB regulations state that the trailer must be "SmartWay" verified OR retrofitted with SmartWay verified technologies. SmartWay verified technology must include low rolling resistance tires and at least one verified aerodynamic device. The other caveat is that whatever you choose, you must show a 4% improvement in fuel economy for reefers and a 5% improvement for dry van trailers. Used trailers must also meet

these standards in California by January 1, 2013.

It has been well documented through wind tunnel testing and actual field testing that the combination of low rolling resistance tires and trailer aerodynamic devices will indeed improve vehicle fuel economy. The return on investment calculation involves not only the price premium for low rolling resistance tires but also the added cost of any aerodynamic device. For the aerodynamic devices, there is also the labor involved to install them on existing trailers, and the ROI would also include the cost of maintaining them because of road damage. They work best under highway speeds but not as much in pickup and delivery service operating in slower city driving conditions.

Low rolling resistance trailer tires on their own can improve fuel economy approximately 3% or more. The key (crucial) point regarding these tires is that the fuel economy advantage will disappear if the tires are not run at the specified air pressure ALL the time. The added expense associated with low rolling resistance tires will be negated by underinflation. Trailer tires always have the poorest maintenance and have a poor track record for proper inflation since trailers are not seen nearly as often as the tractors.

Automatic tire inflation systems for trailers continue to remain popular not only for significantly reducing tire related roadside service calls but to maximize fuel economy and subsequently to reduce greenhouse gas emissions.

## Q&A PSI ANSWERS YOUR QUESTIONS

- Q.** I am confused regarding the new CSA regulations regarding 8 points when a tire is flat?  
**A.** CSA uses the CVSA (Commercial Vehicle Safety Alliance) definition of a flat tire which is 50% or less of the maximum pressure molded onto the tire sidewall. If the maximum pressure for a specific tire design is 120 psi, then if the tire is measured to be 60 psi or less, it would be subject to an 8 point CSA violation along with the vehicle being put "out-of-service" until the tire is back to spec pressure.

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