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2.14.13

Phil,

First off I would like to thank you for the continued support Advantage Pressure Pro offers to us here at our mines, around the clock. As you all know we keep a variety of schedules in our underground operations, and it is refreshing that you and your team will go above and beyond when your expertise and assistance is needed.

As for your systems, I compared quite a few competitors (quite frankly your low cost scared me at first), but fortunately once we gave you the chance and we purchased systems to test on our Volvo and Caterpillar equipment. This equipment is currently operating 24 hours a day, 365 days a year in some of the harshest environments that one can find. These systems are more than we could expect! They have proven to be tough to last in the mines and through handling by mine drivers, they have been right on accurate and we've come to rely on them.

We have seen a significant decrease in the amount of tires we have destroyed due to under-inflation. As you know we are currently re-capping as many tires as possible to assist in holding down operating costs. PressurePro has been instrumental in providing the necessary information to achieve these goals. I believe the new Flex ITM Monitor you're providing us will be the answer to my prayers, allowing me to set the baseline reference pressure I want in each individual tire, taking away any guess work. This will greatly assist production and maintenance personnel when installing and using the systems, shortening labor time and costs spent on tire inflation maintenance.

I would invite anyone who is looking for a dependable Tire Pressure Monitoring System to try your system and I extend an offer to speak with anyone, by phone or e-mail, if they would like to speak to me about PressurePro!



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## **Mid-America Transportation Inc**

*Kansas City, MO 64108  
"Sensing America from Coast to Coast!"*

Jan 19, 2006

Dear Mr. Zaroor:

I'm doing something that is out of character for me. I want to take this time to tell you about our experience with PressurePro. I agreed to install PressurePro on part of our fleet as a test. I was leery of tire pressure products having seen them for years and none of them seeming to work. Your sensor sits out on the stem and seemed susceptible to damage and theft. But our expenses on tires has steadily increased over the last few years with more tires discarded than had good tread but have had sidewalls blown out, zipper rips and tires with the middle of the tire completely bald or ripped but the outside threads still ok. With the increasing price of tires and the increasing amount of tires prematurely lost, something had to be done.

We have a fleet of approx. 650 tractors 1700 trailers and we're moving more and more to Super Singles to save weight and allowing us to carry more freight. With no redundancy of tires, we have to make sure tire pressure is proper before that driver leaves our yards so they aren't stranded on the road. Not only are roadside repair costs high (you are aware our vehicles carry no spares to save weight) but they take significant time and our customers don't want their JIT (Just-in-time) freight to be "not-in-time".

As you probably understand, the greatest costs to a fleet are fuel, tires and labor, for us in that order. We understand how tire pressure affects each of these areas of costs and since we began tracking and managing our tires, we have found significant advantages with your system. Everyone tells us how good their product is and how much we need it and how it will benefit us. You are one of the few firms that have ever made us pay to test the equipment and frankly I wasn't thrilled by that, but I appreciated that your firm puts that much value on the product. After seeing nearly 6 months of results, I'm a believer. On vehicles we have your system on, on average we are seeing a gain of 27% on tread life, our roadside downtime has shrunk by 43%, and while other factors contribute to fuel use, on vehicles with your system, we are seeing an average 1.6% fuel gain – all factors considered. The two brightest indicators for us though are reduced labor costs with a much greater attention to tire maintenance and less damage to tire casings allowing more used tires to be rethreaded – a substantial savings over new tires. Mr. Zaroor, my concern on theft and damage seems to have been for naught. Of the original investment of your product, no sensor has failed or has suffered damage which has caused it to fail. I am impressed and to be frank, if we do lose some, they are saving us more than their cost.

We enjoy our relationship with you and look forward to working with you. Good product, your staff is professional and we appreciate your frankness and the courtesy shown us. Count us as satisfied customers.

PS: I would prefer this letter be held in confidence. We believe your product gives us an edge we would like to enjoy as long as possible. I am open to consider your use of this letter but please contact me first. We prefer to not take calls from your potential customers and I know you will understand.



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2/22/2018

To whom it may concern,

Advantage PressurePro is a global leading provider of Tire Performance Management Solutions. Known for our continued innovation over the last 27 years, PressurePro is proud to be sold across the globe, helping bring safety and savings to drivers and fleets of all types of vehicles and equipment. PressurePro's Sensors utilize RF signal (433.92 MHz) from a sealed, sensor mounted sensor, to transmit real time tire pressure performance information to a driver, in-cab and/or remote to a fleet maintenance manager, enabling drivers and fleet managers to gain the real time information needed to revolutionize their tire maintenance practices.

Though PressurePro is utilized by drivers and fleets of all kinds and sizes, one of our fastest growing markets includes that of mining and OTR operations. From the gold mines of Siberia to the underground lead mines of Missouri, both our standalone and integrated solutions arm users with the tire performance information needed to maintain optimal tire, helping users increase fuel efficiency, extend tire life, add safety, reduce downtime, streamline maintenance and more. Noted as the pioneers of TPMS, PressurePro has lead the advancement of TPMS technology for nearly three decades. Leveraging our unmatched experience and knowledge, along with maintaining US based design and manufacturing (not to mention gold standard components) and rigorous testing, PressurePro continues to provide the most trusted, durable and accurate solutions for our customer.

Along with this letter, I'm also sending spec sheets for our current line, providing further information on our pressure and temperature ranges, accuracy, testing and more.



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## Tyre Pressure Monitoring

Hi TyreSafe Australia

We finally got on top of our tyre issues. We did a lot of load repositioning and ended up having to run 122PSI cold to get 9% pressure increase. We found at 118 psi it was 13-14%. It's amazing how much a couple PSI can make a difference. As we are running the tyre to its maximum load we basically matched the recommended cold PSI which was on the tyre spec sheet and now it's all good.

So for now it looks like we are in a safe zone. We really appreciated your help and assistance. It really helped us to stay safe and assisted us to keep costs down.



## WHEN RUBBER MEETS THE ROAD; TRAILER FLEET'S VARIABLE COSTS ARE MOSTLY IN FUEL, LABOR, AND RUBBER

### Overview

In 2009, Willow Run Foods and the New York State Energy Research and Development Authority began a study to create, develop, build, pilot, and test, a real time tire pressure monitoring system (PressurePro). The solution used PressurePro TPMS from Advantage PressurePro, LLC and utilizes a cellular-based communications platform. *The solution is focused upon the proactive prevention of both excessive tire pressure wear and tire blow outs.* As a result of this primary purpose, the solution also assists in decreasing the amount of fuel consumed by trucks hauling loads by minimizing trailer “drag” created by under inflated tires on untethered trailers, chassis, and flatbeds as well as reducing casing damage, lowering tread wear, lessened tire maintenance labor costs, roadside downtime and ensured more reliable delivery to valued customers.

In 2010, NYSERDA partnered with Willow Run Foods (WRF) to pilot the PressurePro solution on a fleet of 100 refrigerated trailers for a period of one year. Essential to the pilot was the pre and post deployment metrics surrounding Willow Run Foods (WRF's) consumption of tires as well as other tire related costs, including fuel, on a quarterly and annualized basis. **Results were remarkable.**

WRF realized a 58% reduction in operational expenses surrounding tire consumption and tire loss. Additional tire related costs such as preventative maintenance labor, asset and driver down time and overhead expenses were also realized as a result of the pilot.

### Background

*"When your customer list includes Wendy's, Arby's, Quizno's, Popeye's Chicken & Biscuits, and Sonic you understand that timing is everything. If we miss the delivery window for any reason, everyone suffers."*

Terry Wood, President and CEO, Willow Run Foods

WRF, based out of Binghamton, NY, operates roughly 100 refrigerated trailers supplying frozen and refrigerated supplies to restaurants in 14 states within the north eastern and Mid Atlantic United States. On average, each trailer travels between 100,000 – 120,000 miles per year. Over the last 12 months, the average retail cost of a gallon of diesel fuel in east coast and Mid Atlantic states increased from \$3.10 to \$4.12.

Unlike some operational costs in transportation, the annual dollars spent on tires and fuel can spike dramatically over relatively short periods of time and therefore are challenging to account for with accuracy. As an example, the national cost of a gallon of diesel fuel today is \$1.20 more than it was one year ago (a 27% increase).



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Over the last two years the national retail price of diesel increased 50%! For a fleet such as WRF wherein 100 individual trailers travel >100,000 miles per year, such a flux in fuel costs will impact the bottom line directly despite consistency or improvements in other operational expenses.

WRF, like most in the industry, expects about 14 months of life out of each trailer tire and at the time of the pilot was paying approximately \$390 per new tire. Over the last 3 years, on average, the fleet endured approximately 18 tire related road side service calls each year. Average cost per roadside repair incident is \$527 not including vehicle and driver downtime. Other costs to consider are the national average of driver's hourly labor rate, currently at \$18.80, the average labor rate of the yard manager responsible for tire inspections, which sits at \$15.40 and costs related to missed/ delayed deliveries to customers.

## Results

Each year WRF performs an audit of the number of tires consumed or lost as a result of normal operational wear and tear. Typically, the fleet consumes or "loses" more tires during the hotter months of the year. As temperatures rise, the tire's PSI levels rise, the rubber in the tires expand, surface area is increased, greater friction occurs, and tires run at a higher temperature, all of which can cause shortened life. By way of example, 65% of all the tires consumed in 2007 by WRF, were replaced between the months of May and September. Likewise, 56% of tires were replaced for the same time period in 2008 and 57% in 2009. The pilot at WRF began in the 2nd quarter of 2010 with WRF outfitting all 100 trailers with the real time TPMS solution.

**Tires** - As a rule of thumb, tire manufacture's specifications state that 10% under inflation reduces tire life by 11% and under inflation of 30% reduces tire life by approximately 40%. An independent industry wide study in 2008 concluded that 9% of all untethered trailers operate at 20% below proper PSI. By these metrics, nearly 10% of all trailer tires are being prematurely consumed at an accelerated rate. These rates of consumption equate to tire life in the range of 20% - 25% less than expected and with the rising cost of tires, this equates to a huge cost.

**Fuel** - This same study concluded that across the trucking industry, 0.514% of tractor fuel is consumed needlessly due to under inflated tires. In the case of a fleet like WRF, the metrics indicate that each trailer consumed \$341.80 in excess fuel in 2010. For just With a 100 vehicles of a fleet, the excess cost to WRF would be \$34,180.

**Down time mitigation** - Decreasing tire blow outs will invariably lead to less down time for drivers and assets. Studies support that the average roadside tire-related incident includes cost of a service truck \$190 + \$1/ mile, cost of driver down time at \$18.80/ hour, and the cost of delayed shipments. In the P\*W pilot these costs to WRF were cut by roughly 56%.

**Dollars** – Using P\*W, Bob reduced the number of tires consumed by 56% in the 3rd quarter of 2010 compared to the 3rd quarter of 2009. Similarly Bob decreased the number of tires consumed by 58% in the 4th quarter of 2010 compared to the same quarter in 2009. Not surprising, the dollars follow the same pattern. Actual dollars spent on new tires decreased by 56% in the 3rd quarter and by 58% in the 4th quarter. **Despite only having P\*W on for half of the 2010 operating year, WRF decreased the amount of money spent on the purchase of new tires by 46.7%.**

## Summary

Imagine cutting your largest variable operating expense in half. Currently, the costs of both rubber and diesel fuel are rising. The real time monitoring and proactive management of trailer tire PSI can be the difference between making money or losing money in today's economy and strong competitive market. In the case of WRF, the measured results equaled a dramatic cut in their cost of operations. WRF was able to prevent tire related costs simply by being alerted in advance that a tires PSI on a particular trailer was too high or low. This knowledge resulted in fewer tire blow outs, less driver down time, and more efficient fleet operations.



### **Tire Pressure related statistics**

Latest industry statistics state that at any one point in time, one third of all the trucks and chassis have at least one tire that is under inflated by 8 PSI or more. It is well accepted that "soft" tires increase drag, promotes tire demise, and elevates the consumption of diesel fuel. Statistical estimates performed by the U.S. Department of Energy indicate that as much as one billion gallons of fuel (.06% of total fuel expended annually) are needlessly consumed each year in the US as a result of inadequate commercial vehicle tire pressure. Through pro-active management of PSI issues, the fleet reduced blow outs, reduced road side repair expenses, reduced driver down time, reduced tire maintenance costs, reduced liability risks, reduced maintenance labor time and costs, used less fuel, and consumed fewer tires.

### ***PressurePro Sensors***



***Stem mounted TPMS caps capture and send PSI data (shown larger than actual size)***

Disclaimer: This project was sponsored in part through grant(s) from the Maritime Administration, the United States Department of Transportation and NYSEDA.



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03 June 2011

Whom this may concern;

Pektrans bought a tri-axle trailer during 2005. It was fitted with super single (22.5 x 385) tyres and were offered a option to buy the Pressure Pro tyre monitor system. As 'single tyre' operation was a concern to us, we decided to take-up the option.

Today, 2011, more than 5 years later, the system is still 100% functional and has saved us many tyres along the way. The system is surprisingly robust in order to last this long under typical tough transport conditions.

The benefits to us have been as such that we have decided to phase in similar units to all our vehicles. This includes the double wheel units. We have found that there is no other dependable system to sense pressure loss on the road.

We have a long distance operation and have found that drivers cannot detect tyres with slight pressure loss. Such tyres wear extensively and can be ruined in a relatively short time.

Tyres and the management off demands the best possible and finely tuned controls due to the cost and ease of loss involved.

The Pressure Pro system has proved that it has a very definite role to play in this endeavour.