



Do you ASSuMe your tyres are “ok”?

「 IF THEY'RE
NOT TURNING
THEY'RE NOT
EARNING 」



TRANSAFEWA
TRANSPORT.SAFETY.COMPLIANCE
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Small events..... sometimes large consequences

So a catastrophic tyre failure can have far reaching effects,
consider a steer tyre failure at highway speed,
a tyre delaminating throwing the tread taking out brake lines
on the 3rd trailer

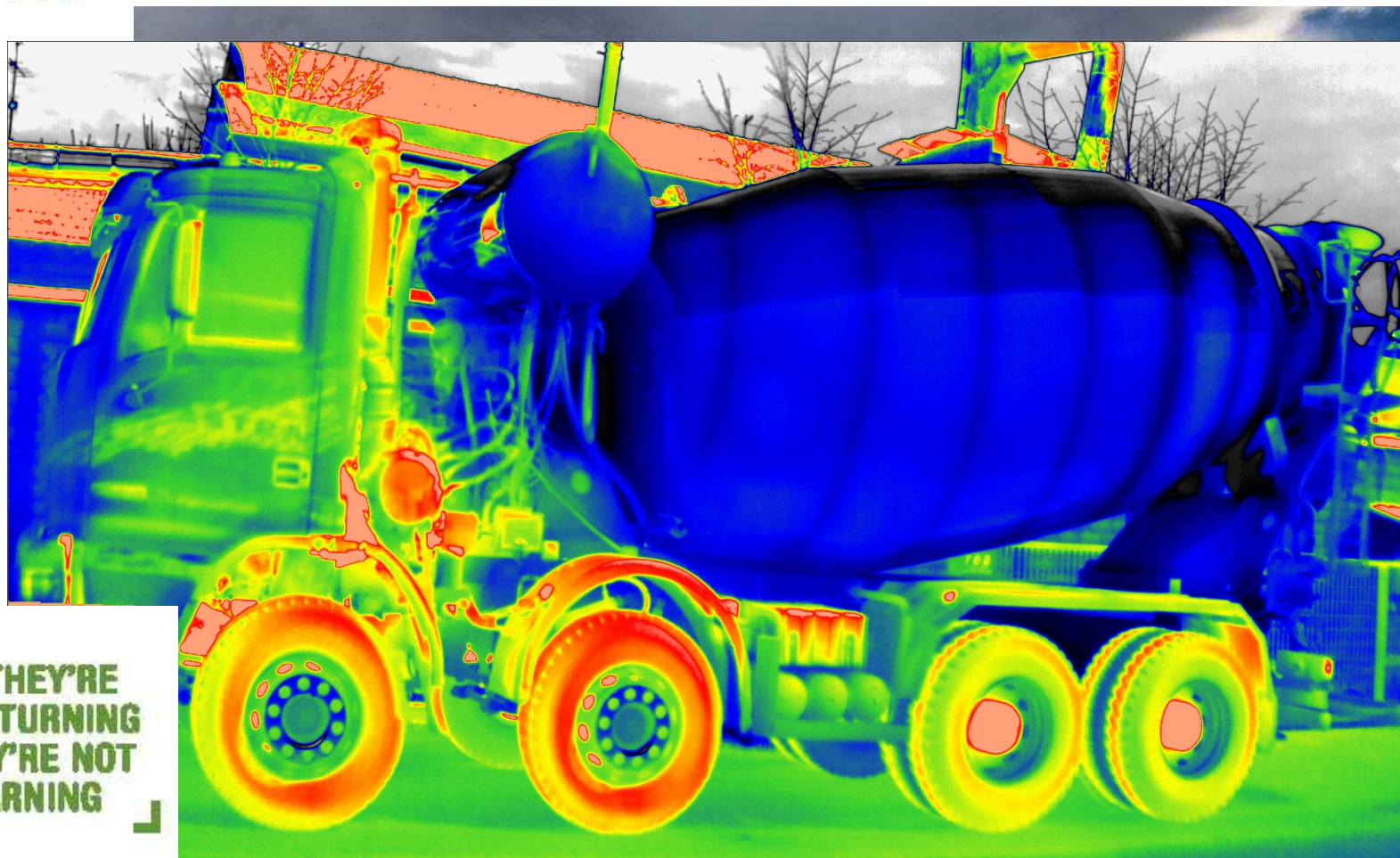
How do you minimise the consequences and mitigate the
risk?



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Why do you think that all the tyres on your rigs operate at the same pressure & temperature?



How do you know what the rear trailer tyres are doing?

Do all the tyres look like they are the same temperature?

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NTI Report 2020



Summary of findings

- Losses from non-impact fires increased from 8.1% to 10% of large losses, this increase was predominantly driven by an increase in wheel end fires. (page 9)

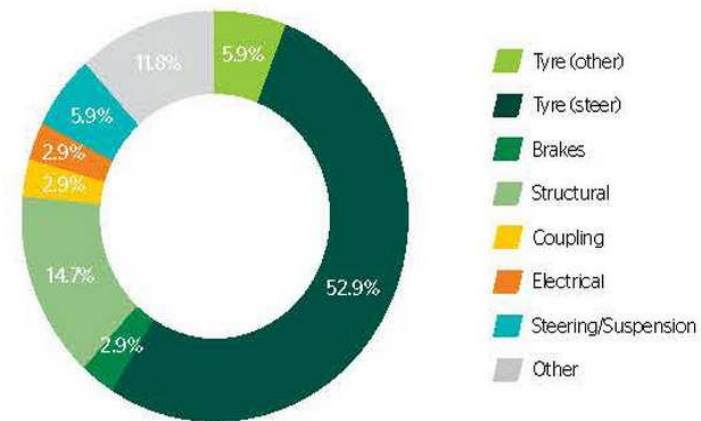
Losses

- 2019 saw a rise in large loss incidents resulting from non-impact fires, increasing from 8.1% of large losses in 2017 to 10% in 2019. Looking in more detail, the growth in fire losses was driven by an increase in **wheel end fires**, which increased in proportion from one in three to almost half (47.1%) of all non-impact fire incidents (page 16)

STEER TYRE FAILURE

Looking at the underlying cause of these mechanical failure losses, once again steer tyre failures caused over half of the incidents. Despite the tremendous safety risk posed by these high speed catastrophic failures, little to no discussion of reform to sum of axles restrictions has taken place since the publication of the 2019 report. (page 31)

Mechanical failure losses by sub-cause





VISUAL OBSERVATION OF TYRE PRESSURES

This is what it looks like as a sequence showing the tyre dropping as pressure decreases



“I can tell when my tyres are under pressure.”

So when is a tyre actually underinflated?



WON'T HAPPEN TO ME



Steer tyre failure; the driver saved the truck. Lost time 6 hours, cost ~ \$40k.
The tyre was underinflated/overloaded and so failed catastrophically.
A lucky escape by a highly experienced driver.



WON'T HAPPEN TO ME





Fuel tanker explodes in outback Queensland on way to help flood relief effort

By [Aneeta Bhole](#)

<https://www.abc.net.au/news/2019-02-18/fuel-tanker-explodes-outback-queensland-on-way-with-flood-relief/10820708>

A tanker truck carrying fuel into flood-ravaged north western Queensland has exploded on the Landsborough Highway, west of Barcaldine in the state's central-west — but the driver survived unscathed.

Police were called just after 5:30am and have cordoned off part of the highway to motorists, which will be closed for several hours.

Inspector Julia Cook said the explosion was possibly the result of a blown-out tyre. "It is fairly unusual that it would turn into the blaze," she said.

"Unfortunately that's what happened today. You just never know what's going to happen when you have a tyre blow out when you've got such a flammable load. The best way to clear it is for the fire to wait for it to burn out and then hopefully we'll be able to clean the scene up."

Inspector Cook said the driver of the vehicle escaped unharmed.



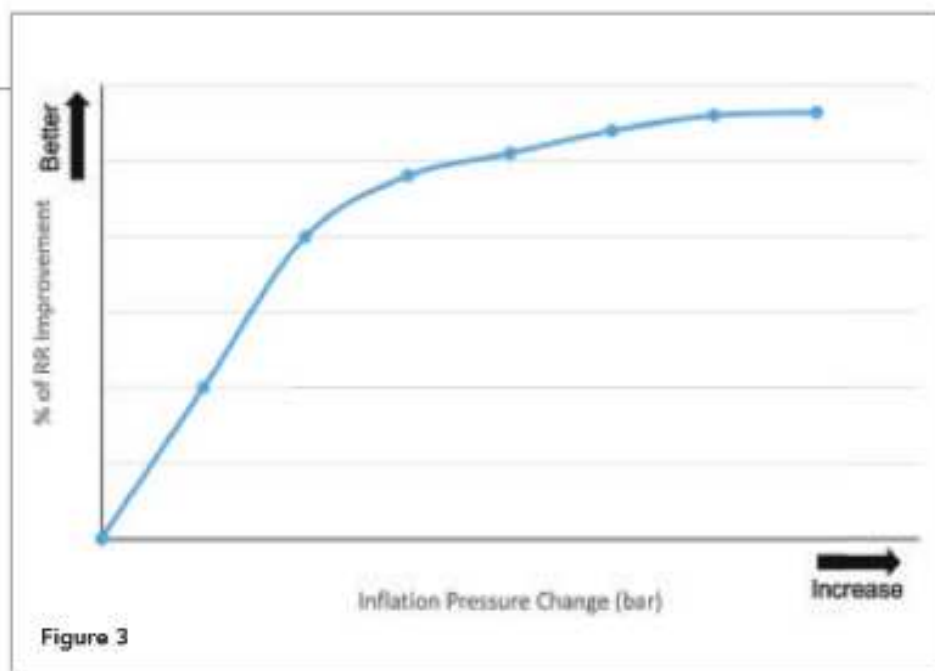
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[Photo: The driver of the fuel tanker escaped unharmed when it exploded in western Queensland this morning. \(Supplied: Craig Dwyer\)](#)



ROLLING RESISTANCE & TYRE PRESSURES



As inflation pressure increases so does tyre stiffness.

Stiffer tyres with lower deformation create less energy loss reducing rolling resistance (RR).

As the pressure increases, tyres will reach a saturation level That's why it is always recommended operate the tyres as guided by the manufacturers. It is estimated 7 psi increased inflation can improve RR by 7 – 10%.

Reduced RR

=> reduced fuel burn rates

=> reduced costs

=> improved profits



RESULTS OF UNDER INFLATION



“I can

essure.”

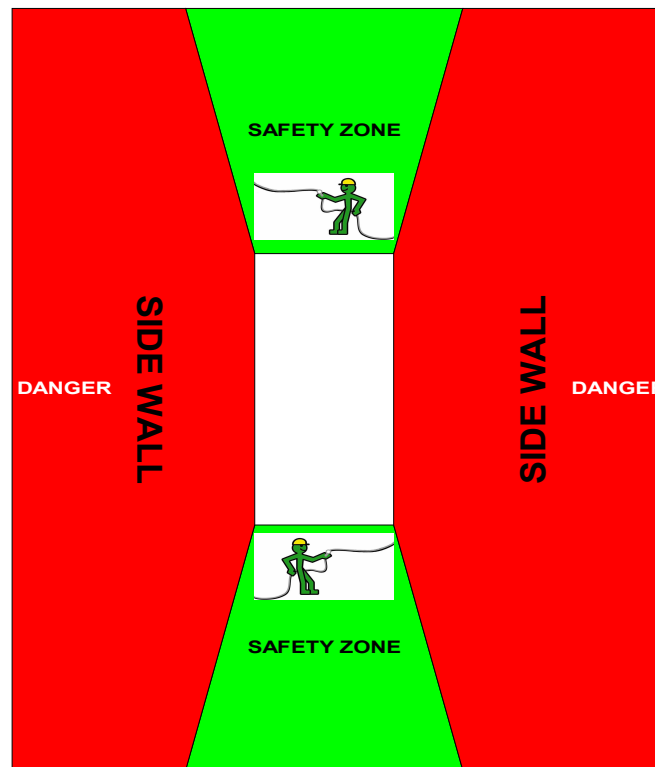


RESULTS OF UNDER INFLATION





HAZARD RECOGNITION





WHEEL END CHALLENGES

It won't happen to me!



An APD cruiser is parked next to a set of double wheels that police said were separated from a semitrailer truck and struck a pedestrian on Interstate 40 near Coors on Monday. The pedestrian died. (Greg Sorber/Journal)

A set of dual tires separated from the trailer of a semi truck and struck and killed a pedestrian on Interstate 40 near Albuquerque, N.M., according to local media.

Police said a mechanical failure caused the set of dual tires, along with the wheels, to separate from the trailer while the truck was traveling westbound. The pedestrian was traveling east on the shoulder and was struck by the tires. Police are still investigating the accident.

ALBUQUERQUE NEWS

January 2016



Evidence for tyre operations

Do your drivers change tyre pressures? Why? Are they allowed to drop coolant from the radiators because the engine is overheating? What is their qualification for tyres?

What policies and procedures are in place for the management of tyre assets (including wheels/rims)

How does your organisation actually select the tyres and wheels used in the business?

Do the bean counters buy only on purchase price? What about cost of operation?

To what extent does your operation control the operation and maintenance of your tyre operations?

Or is it outsourced to an external provider, forgive me, whose primary aim is to sell more tyres?

How does your operation evidence that tyres have been maintained in accordance with safe to operate principles?

- a./ I don't know Your Honour
- b./ We don't Your Honour
- c./ We outsource our tyre service Your Honour. [which raises questions about delegation]
- d./ Your Honour, here is the data, evidence policies and procedures for our tyre operations.

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TYRES AS A TEAM





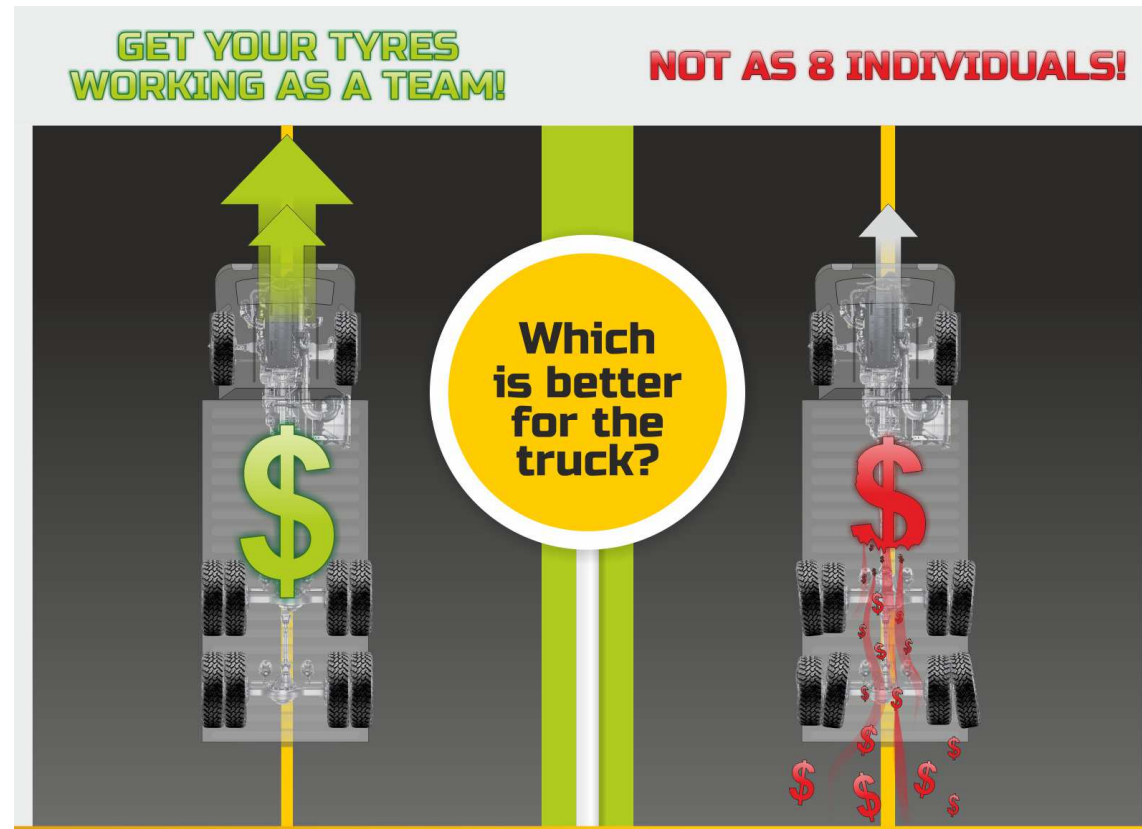
TYRES AS A TEAM



Think 8 drive tyres, all slightly different sizes due to pressure delta of 14 psi which equates to a difference of 25 mm rolling circumference.

What is the expected result for the truck & driver?

What do you think the effect of having tyres heading in different directions would be on the fuel burn rate?



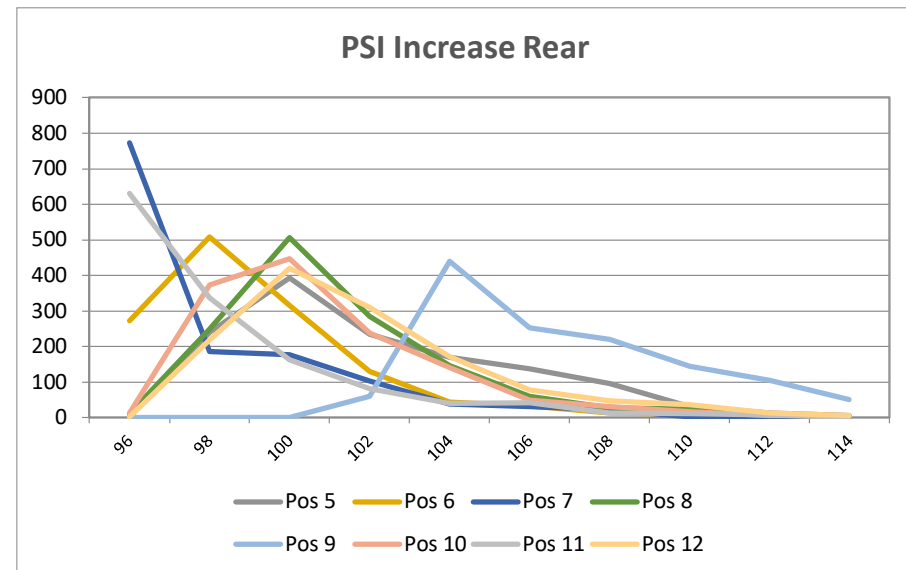
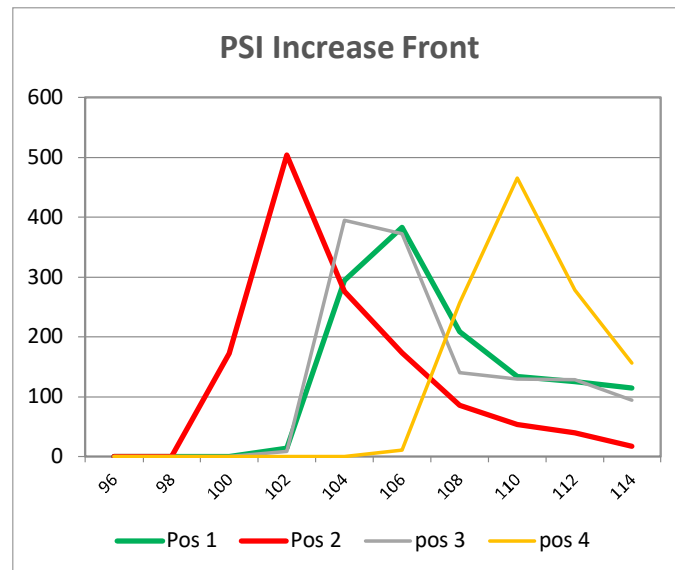
When all members give their best in every situation — whether they are carrying the ball or clearing the way for someone else — the team wins, and so does each individual member of it.

A good football team relies more on harmonious coordination of effort than individual skill.

Teamwork is a “cooperative effort by the members of a team to achieve a common goal”



TYRES AS A TEAM



Do the tyres on your rigs work as a team, or as a series of individuals?

If the tyres all worked at the same levels there would be only 2 traces showing on these charts. Yes, it is possible but requires the 6M rule to be applied



The 6M Principle

Measure >>>Monitor >>>Maintain >>>Manage >>>MAKE MONEY \$\$\$

Do you operate your trucks with engine temperature and oil pressure gauges?

YES

NO you what?

Do your drivers understand and monitor their personal fatigue?

YES

NO really?

Is real time coms used (ie radio/phone/messaging?) in your operation?

YES

NO

How do you ascertain the load on your trucks and trailers? Onboard weighing?

YES

NO

Has your operation installed GPS real time tracking?

YES

NO

What are the top 3 operating expenses for your fleet

Fuel Brakes Body & Chassis Maintenance
Administration Suspension Steering
Engine servicing Labour
Tyres

1. Fuel
2. Tyres
3. Labour

So how do you monitor your tyres? With a hammer or a wish?



TPMS data



Pressure Chart



In this example the front inside drive tyre was 14 psi higher than the other tyres on the axle.

This tyre was supporting higher loads whilst the smaller tyres were wearing out faster.

Why are you throwing your profits away?
\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$



RESULTS OF INFLATION DIFFERENCES





TYRE PRESSURE MONITORING SYSTEMS (TPMS)



mandated in
USA from 2008
European Union 2012
Korea & Taiwan 2013
China 2014



TPMS is recognised as a legitimate road safety tool
but it is also a great tool for tyre management

Real time tyre pressures in real time will increase vehicle safety
& provide positive economic returns.

MONITOR > MEASURE > MAINTAIN MANAGE > MAKE MONEY \$\$\$\$\$\$!!



Monitor tyres pressures
from the drivers seat

Positive safety device

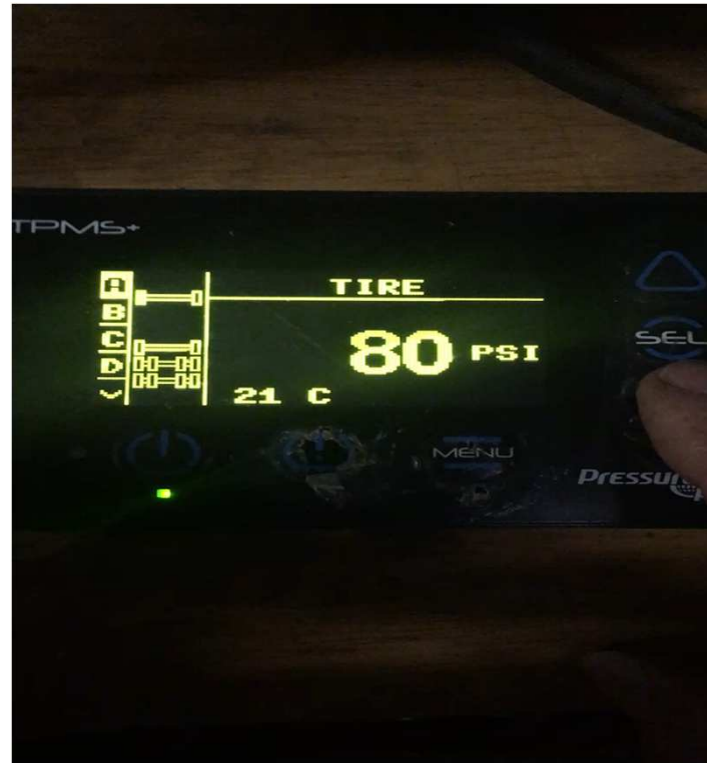
A steer tyre failure? A
drivers worst nightmare!

Why throw your profits away by
ignoring the foundation of the vehicle
the humble tyre?



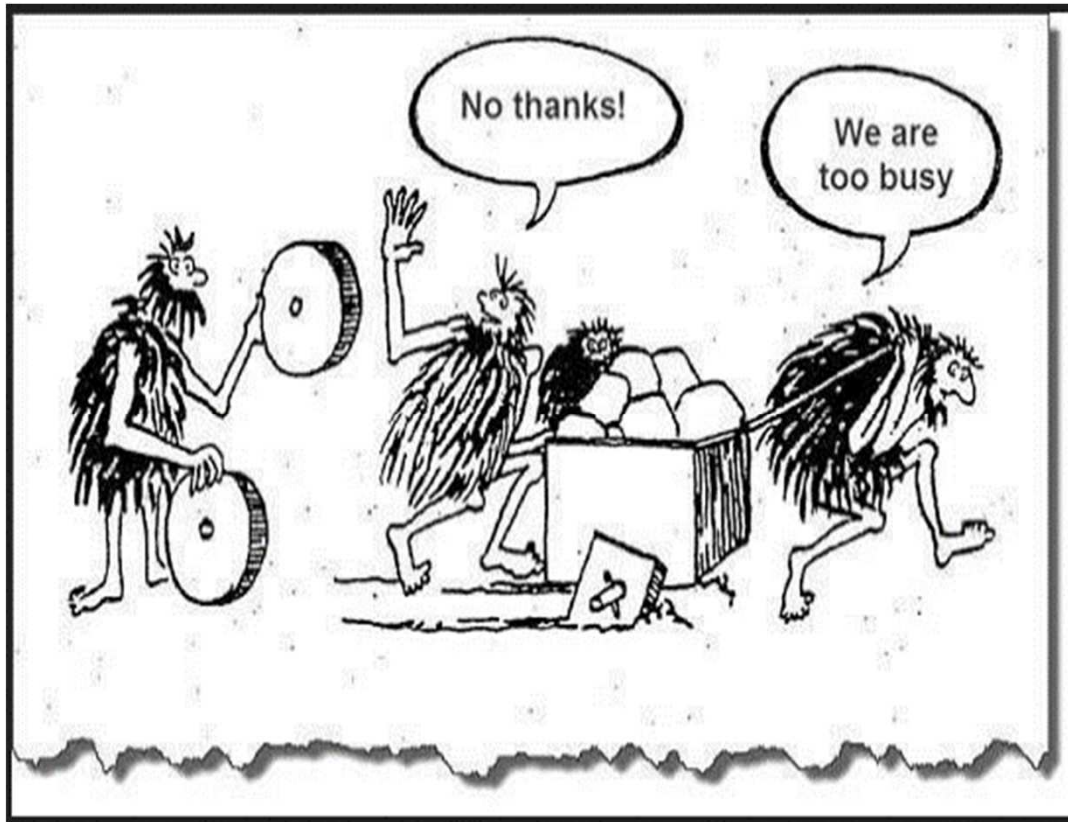


Pressure Check



This is our test bench; represents a twin steer tandem drive prime mover with 5 tri axle trailers, 1 tandem with a missing sensor for illustration purposes

WHY CHANGE?



We've always been doing it this way!

As we've seen from COVID-19
Doing the same thing and
expecting a different result is
the definition of??

INSANITY!

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WHY continue to ASSuMe your tyres are “ok”



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Brand Highway crash: Two killed in head-on collision after truck 'blew tyre'

9:04pm Apr 18, 2018

Major Crash Detectives are investigating after a head-on crash killed two people near Badgingarra, 205 km north of Perth.

