Safety Alert

DIFFERENTIALs, DRIVELINE, SUSPENSION AND WHEEL ENDs.

November 2022

Priority: Urgent ☑ Necessary ☑ For Information ☑	**SA # 2022-01**
Circulate: Driver ☑ Operator ☑ Workshop ☑ Parts ☑ Fleet Manager ☑	

THE PROBLEMS:
The recent impacts of wet weather flooded roads and road damage is having impacts on all vehicles including heavy vehicles. Reported impacts include wheel bearings suspension and wheels.

THE ISSUES:
Flooded roads - There have been multiple reports of bearing failures, because of water ingress. A primary enemy of a bearing is foreign matter and/or water. Bearing seals are designed to keep lubricant contained, not other matter (including water) out. A warm to hot wheel end suddenly dunked in cool water will cool rapidly, resulting in a reduced pressure within the bearing/lubricant cavity.
A wheel bearing failure can lead to a wheel-off incident or wheel bearing fire, possibly catastrophic if it's a steer axle.

There are also reported issues relating to the water in differentials. The result from the differential breathers sucking in water through the above-mentioned mechanism – potentially contributing to further bearing issues.

It is also important to be aware of the increased risk of universal joint bearing failures after submersion in water.

Damaged roads - There have been multiple reports of damage and failure to suspension components and rims and tyres. With the current state of many roads, it is not always physically possible to avoid the worst of the potholes etc. The suspension components are subjected to direct impact and whilst the tyres absorb some of the force, much is transferred to other components. The results include broken shock absorber bolts, destroyed shock absorbers, and failed airbags.

FOLLOW-UP ACTIONS:
Wheel End (Bearings): If any vehicles have operated through water more than about 200 mm deep, then you need to be aware of the possibility of water ingress to the bearings and increase frequency of wheel bearing monitoring.

Road Failure Related Damage: All components relating to the tyres, rims, bearings, axles, and suspension face increased risk of failure to the declining road infrastructure. Increased frequency of general component monitoring will be required for equipment on the degraded network.

Equipment damages won't be limited however shock absorbers, shock absorber mounting bolts and air bags will be prime considerations.

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OTHER CONSIDERATIONS:

- Operators need to be aware and consider the implications of possible soft road edges (if there is room to stop off the road) as stability may be a safety issue.
- Drivers need informed to be more diligent with pre-trip and during trip checks and post trip reporting.
- Workshops will need to be more focussed on condition monitoring as opposed to routine scheduled maintenance.

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