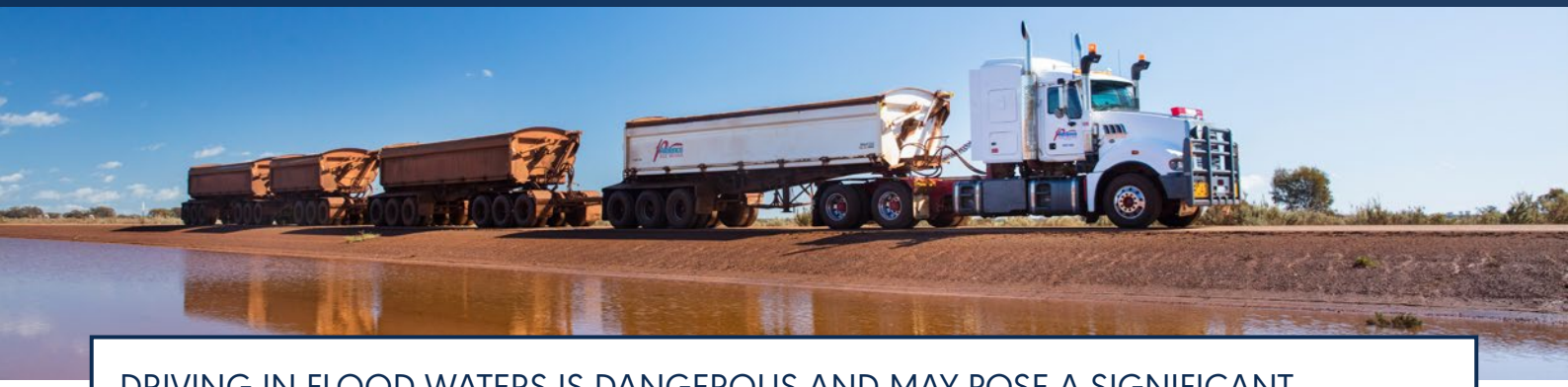
NHVR
National Heavy Vehicle Regulator

Post flooding safety check



DRIVING IN FLOOD WATERS IS DANGEROUS AND MAY POSE A SIGNIFICANT RISK TO YOU, YOUR VEHICLE AND OTHER ROAD USERS
REMEMBER IF IT'S FLOODED, FORGET IT.

Operating a heavy vehicle during extreme weather conditions can see some heavy vehicles driving on roads and in conditions they may not otherwise travel. This includes:

- travelling through standing water,
- travelling on roads impacted by mud and debris,
- route diversions onto dirt/mud roads
- having to park in water,
- water rising around a parked vehicle.

Operating a heavy vehicle in a very wet environment can have mechanical impacts on a heavy vehicle, so it's important to consider these impacts and potentially adjust your maintenance system to match.

While your regular mechanic will be able to provide advice specific to your operations, the following are some common areas of focus when operating in a wet environment.

Note: This document is general in nature and intended only as guide. Vehicles that have travelled in water deeper than the axles should be referred to an appropriately qualified professional for inspection.

Debris

Debris can damage key safety components and pose a safety risk, including the risk of fire. Failure to remove debris may prevent drivers and operators from identifying mechanical issues during routine inspections and maintenance.

Travelling through water over roads or on muddy roads may cause:

- brake systems, steering, suspension, tyres, and other components become packed with mud, sticks or other debris
- signs, marker plates and number plates to become loose, damaged, or illegible
- rocks, sticks or other items to become lodged in between tyres, brake components and other vehicle componentry
- cooling systems (radiator, intercooler, fuel cooler, etc) to become clogged with mud, grass, and other debris

TIPS:

- ☐ Before driving on a road after exiting deep water or having driven through debris, check for lodged debris under the vehicle to prevent further damage to the vehicle or harm to other road users.
- ☐ As part of a pre-trip check, drivers should carry out a visual inspection of wheels, wheel ends, brakes, cooling and suspension components to ensure they are free of debris.
- ☐ Check that all signs and identifiers are clean and intact before continuing your journey.
- ☐ During routine maintenance, the vehicle should be cleaned and inspected for any damage that may have been caused by debris.

Leaks

Many components on a heavy vehicle are sealed, either to keep lubricant or other fluids in, or to prevent water and other contaminants from entering. These components include:

- fuel (fuel and exhaust fluid tanks)
- brakes (boosters, reservoirs, and dryers)
- transmission
- differential, transfer case and engine oil
- air intake system

Also, while many lubricants used on heavy vehicles repel water, longer term exposure to rain and water may 'wash' grease and other lubrication from vital components including:

- wheel bearings
- axles

- drive shafts
- universal joints
- clutch throw-out bearing and clutch brake

TIP:

- [ ] During routine maintenance, these sealed and lubricated components should be inspected to ensure the seals remain intact, that water and other material has not entered the systems, or that components remain suitably lubricated. Operators may need to bring their next routine maintenance inspection forward to ensure these components remain in good working order.

Rapid component cooling

Some components such as transmissions and differentials normally have breather valves installed to allow air movement. In some cases when these components are hot and come into contact with water, the sudden temperature change can allow water to enter the component.

TIP:

- [ ] During routine maintenance, these sealed components should be inspected to determine if water or other material has entered the systems. Operators may need to bring their next routine maintenance inspection forward to ensure these components remain in good working order.

Electrical systems

While many of the electrical systems and components on a vehicle are sealed and waterproof, wear and tear over time can allow water to enter these components. Also, in modern heavy vehicles the number of electrical components and systems has increased substantially, so the number of components that could be impacted has increased.

Systems that may be impacted by water or mud include:

- lights
- sensors
- general wiring and electrical connections

TIP:

- [ ] During routine maintenance, these sealed components should be inspected to determine if water or other material has entered the systems. Operators may need to bring their next routine maintenance inspection forward to ensure these components remain in good working order.

Brakes

Brakes are a critical component and should be given extra consideration post flood.

While air brake systems are sealed systems, leaks in the system and breathers on brake components like boosters may allow water and debris to enter the system.

Brake systems may become compromised in the following ways:

- water may enter brake drums reducing the vehicle's ability to stop immediately after exiting flood water
- debris may become entangled and restrict actuation of pushrods and slack adjusters
- mud may be drawn into booster air chambers restricting component movement within the chamber
- debris may be drawn into booster air chambers resulting in failure of diaphragms and air leaks
- excessive amounts of mud may enter brake drums, resulting in poor breaking effort

TIPS:

- [ ] Be aware of potentially reduced braking capacity immediately after exiting flood water.
- [ ] During routine maintenance, conduct a detailed inspection of all brake components to ensure they have not been damaged by water or debris. Operators may need to bring their next routine maintenance inspection forward to ensure these components remain in good working order.

What you can do

Before entering flood water, you should be aware of the potential damage that this activity may cause to your vehicle and only do so if you are sure it is safe, you know the condition of the road under the water or you have been directed to do so by an authority.

If your vehicle has recently travelled through or been sitting in water, and before continuing your journey:

- Check for obvious signs of leaks and water damage (for example, oil that has been contaminated with water will look cloudy or 'milky').
- Check the brakes are clear from debris and mud.
- Check the steering and suspension components are clear from debris and mud.
- Spray electrical connections and sensors with an approved water dispersant lubricant.
- Check there are no foreign objects lodged in the undercarriage or cooling system of the vehicle.

Vehicles that have travelled through, or sat in, water should also:

- Be scheduled for a thorough inspection by an appropriately experienced person. Ensure they are advised that the vehicle had been operating in adverse conditions.
- Consider shortening the time until the next service.
- Consult the component manufactures for recommendations and next steps.

More information

For more information about routine maintenance, contact the vehicle or component manufacturer or your regular maintenance provider.

This list is a visual check and serves as a guide only. It may be used as a basis for operator checks and should be adapted for each operator's individual circumstance. It does not replace a full safety inspection.

Please note: While every attempt has been made to ensure the accuracy of the content of this fact sheet, it should not be relied upon as legal advice.

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