

# Safety Alert OF THE MONTH

PLEASE PASS THIS ON TO PEOPLE AND ORGANIZATIONS IN BC'S FOREST INDUSTRY

February 2018

## Preventing Wheel Loss - Light and Heavy Duty Vehicles

There are three potential reasons for wheel loss incidents:

- 1) Axle fracture
- 2) Wheel mounting system failure
- 3) Hub and wheel bearing system failure

Almost all wheel loss situations can be prevented with a good working relationship and communication between the driver (pre-trip inspection) and maintenance personnel. Drivers need to be vigilant with their inspections, particularly when maintenance has recently involved the removal of wheels and the replacement of seals and bearings.

Often the driver will get visual, audible, and handling indications of a problem well in advance of the wheel separating from the vehicle. If in doubt, investigate, inspect and repair.

### Axle Fracture:

- Axle failure is very rare and in most cases is caused by existing metal fatigue in the manufacturing of the axle or from improper maintenance of wheel bearings in older vehicles.

### Wheel Mounting System Failure:

- All wheels must be torqued to the Original Equipment Manufacturers' (OEM) specifications. Torqueing is the key to having proper clamping force to keep the wheel attached to the vehicle. Insufficient or over torqueing can both cause issues.
- If the clamping force is insufficient, it can lead to loose fasteners (nuts) that can result in spin off on the left side of the vehicle and bending fatigue on the right side.
- Always re-torque wheels that have been serviced within 50 to 80 kilometers after service. This includes any brake or other work that requires the removal of a wheel.



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- Examination of the wheel and fasteners needs to be a part of the pre-trip inspection:
  - Use of lug indicators makes the process visual and will assist drivers with determining if there is any movement of the fasteners
  - Look for any evidence of loose fasteners such as rust streaks or wear and perform a hand twist with gloves on each nut.

## Hub and Wheel Bearing System Failure:

- Causes for failure include:
  - Improper lubrication during installation
  - Failing to have the seal flush with the hub
  - Failing to adjust proper bearing end play
  - Incompatible seal
  - Contamination within the lubricant.
- A good preventive maintenance program includes:
  - Twice yearly (40,000 kms) bearing seal check and lubrication
  - During the daily pre-trip inspection, look for any evidence of leakage and ensure proper lubrication is performed, when necessary
  - Be aware of any non-uniform heat from a particular wheel that is not brake related.



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