

## IMPORTANT SAFETY INFORMATION FOR EMPLOYERS OF ADVANCED PARTICIPANTS

The Commercial Vehicle Wheel Service (CVWS) training program is offered in response to a regulation that requires individuals to become trained and certified to perform certain tasks. Training is required due to the potential safety hazards that are associated with servicing the tires and wheels of trucks, trailers and buses. Workers and their employers must be aware of these potential hazards to avoid injury that can be fatal.

This document describes the specific hazards relating to the type of work being performed by workers who are enrolled into the various training streams offered by the CVWS training program. Employers should also review the workplace safety issues as shown in this document and ensure that each issue is properly addressed.

### **Training Stream: Advanced (Tire Service Technician)**

This training stream is appropriate for individuals whose job descriptions involve removal and replacements of tires and wheels from vehicles, tire de-mounting and mounting, and tire repairs.

Training Participants' learning will consist of:

- Modules 1-17 of "Practical Tire & Wheel Service" Training Manual
- Knowledge examination delivered online
- Receipt of a certificate of training from the Ministry of Training, College and Universities

### **Prerequisite Experience**

The employer must confirm and sign the registration form to confirm that the required minimum number of (480) hours have been accumulated by the Participant.

During this time the Participant must have been working under the close supervision of an experienced and qualified individual. This experience must include involve the Participant becoming reasonably proficient on:

- Jacking and lifting
- Removal and replacement of wheels of all types
- Mounting and de-mounting of tube type tires (unless obsolete in the workplace)
- Mounting and de-mounting of tubeless tires (manually or by machine)
- Torquing procedures
- Puncture repairs



## Potential workplace issues for Advanced Participants

### General Workplace Safety

#### Participants Will Learn:

- The potential hazards associated with inflated tire and rim assemblies and unsafe practices that must be avoided.
- Ontario's Occupational Health and Safety Act gives a worker the right to refuse work that he or she believes is unsafe.

#### Important Workplace Safety Issues:

- This training helps Participants identify hazards and unsafe practices, and this knowledge may potentially cause issues to be identified that need to be addressed by the employer.
- Improper tire and wheel service procedures can cause injuries that can be fatal.
- Improper tire and wheel service procedures can cause wheels to detach from vehicles that can cause damage, or injuries that can be fatal.

### Tire Inflation Equipment

#### Participants Will Learn:

- No person should service any tire, rim or wheel without proper training.
- An accurate tire pressure gauge should be used to check tire pressure.
- A tire with pressure below 80% of its normal pressure cannot be safely re-inflated. When a tire is suspected of being damaged because it has been operated in an under-inflated or over-loaded condition, it must be demounted and inspected for damage.
- Inflation or re-inflation of a tire must be done using a hose with a clip-on chuck, a built-in gauge and enough length for the user to operate it while standing outside of the trajectory zone of the tire.

#### Important Workplace Safety Issues:

- No person should service any tire, rim or wheel without proper training.
- Workers that are not trained should not inflate tires.
- Accurate tire pressure gauges must be available for use by the worker(s).
- Workers need to know the normal tire inflation pressure values for all tire applications.
- Workers need to know the values that represent 80% of normal tire inflation pressure values for all tire applications.
- That the correct type of tire inflation equipment must be used in the workplace.

### Checking Wheel Fastener Security

#### Participants Will Learn:

- Improper installation of the wheel components can cause wheel fasteners to loosen after the vehicle begins operating.
- Wheel component and vehicle manufacturers recommend re-checking wheel fasteners 80 to 160 km (50 to 100 miles) after installation.

#### Important Workplace Safety Issues:

- Improper installation of the wheel components can cause wheel fasteners to loosen after the vehicle begins operating.
- Proper installation of wheels and wheel fasteners includes proper cleaning and inspection of the parts, using only quality replacement parts, proper assembly of the components, including lubrication when



- Wheel component and vehicle manufacturers recommend re-checking wheel fasteners every 16,000 km (10,000 miles) when a vehicle is in service, and further state that individual fleet experience may dictate shorter intervals or allow longer intervals.
- Wheel fastener security is checked by applying a pre-determined amount of torque to each fastener.
- Rechecking fasteners is a meaningless exercise when wheel nuts have been installed improperly.
- An accurate torque wrench must be used to check fasteners.
- Torque wrenches used to tighten or re-check wheel fasteners must be checked and calibrated periodically.
- Wheel fasteners must be checked using the same torque value that is used to install them.
- When wheel fastener security is checked, the wheel must also be visually inspected.
- Wheel nuts normally should not rotate at all when they are rechecked.
- Wheel nuts that rotate  $\frac{1}{4}$  turn or more when checked, require further inspection.
- required, and proper tightening of the fasteners.
- All installation steps must be properly addressed to avoid potential wheel failure.
- Problems may exist between outboard brake drums and wheel hubs that can affect wheel security - and that addressing these problems may require a technician.
- Wheel fastener security needs to be checked after installation.
- Wheel fastener security needs to be checked as part of a preventive maintenance program.
- Wheel fastener security needs to be checked with a torque wrench.
- There is no substitute for a proper wheel installation. An improper installation can remain hidden even when fasteners are checked after installation.
- A worker who checks wheel fasteners after they are installed must be trained on the correct procedures.
- A calibrated torque wrench must be available to a worker who is expected to check wheel fastener security.
- A torque wrench must be set to the correct value to be used to check wheel fasteners.
- Any wheel fastener that is found to be less than fully secure requires further follow up. A worker needs to have a process for reporting problems.

### General Wheel Installation

#### Participants Will Learn:

- Proper jacks and safety stands must be used to raise and support a vehicle.
- Jacks and support stands must be rated to handle the vehicle's weight.
- All wheel and fastener parts must be inspected to determine if they can be re-used.
- All wheel and fastener parts must be properly cleaned before they can be installed.
- Wheel bolts and studs that are damaged

#### Important Workplace Safety Issues:

- Proper jacks and safety stands must be supplied to a person removing or replacing wheels.
- Rating values of jacks and support stands, as well as vehicle weights must be available to each person removing or replacing a wheel.
- Each person removing or replacing a wheel must inspect the parts and determine when they are no longer suitable for re-use.
- Wheel installation or parts replacement may require assistance from a qualified technician.

- must be replaced by a qualified technician.
- Replacement parts must be obtained from reputable manufacturers and suppliers and marked to identify the source.
- Some wheel nuts require lubrication before being installed, while others are installed dry.
- Wheel nuts must be tightened to the specified torque value using an accurate torque wrench.
- Improper installation of the wheel components can cause wheel fasteners to loosen after the vehicle begins operating.
- Replacement parts must be obtained from reputable manufacturers and suppliers and marked to identify the source.
- Each person removing or replacing a wheel must use lubrication as required.
- A calibrated torque wrench must be available to each worker who is required to remove and/or replace wheels.
- A torque wrench must be set to the correct value to be used to install wheel fasteners.
- Improper installation of the wheel components can cause wheel fasteners to loosen after the vehicle begins operating.

### Hub-Piloted Wheel Installation

#### Participants Will Learn:

- Hub-piloted wheels use outboard-mounted brake drums, and the condition and handling of the brake drum can affect the installation of the wheels.
- Hub-piloted wheel nuts require lubrication of the bolt threads and the flange washer of each nut.

#### Important Workplace Safety Issues:

- Some brake drum conditions may require a technician to remove, or service the brake drum.
- Each person installing a hub-piloted wheel must be supplied with the proper lubricant.