

Spot The Safety Violation: Beware of Exploding Tires



Why do you think this tire exploded? And what do you think happened to the worker standing next to it when it did?



Inflating a tire may not seem like a particularly dangerous job. But if it isn't done correctly, the tire could explode, often with tragic results.

This picture is from a WorkSafeBC investigation report on an incident in which the wheel of a log stack had a small air leak. A mechanic deflated the tire and welded the rim to stop the leak. But while he was beside the tire as it was inflating, it exploded. A flap of tire came down and hit his head from behind, forcing his head into the tire rim and causing fatal head injuries.

The investigation found that the following were some of the factors that caused this tragic incident:

- The tire wasn't removed from the rim before welding. And the work procedures that bar welding on mounted tires weren't adequately communicated or followed.
- The manufacturer's instructions weren't followed.
- The mechanic wasn't given and didn't use a remote air chuck that would've kept him out of the line of trajectory.

Exploding tires aren't as rare as you may think. Here are just a few examples:

- A tire shop worker repaired a multi-piece rim and tire. While inflating the tire, he tapped the rim's locking ring with a hammer to move it into the right position, causing the tire's tube to rupture and the wheel assembly to explode, injuring his hand and face. The shop was fined \$8,400 for failing to ensure a safety cage or other restraining device was used and other precautionary measures taken to protect employees from an exploding tire [*Sussex Tire Ltd.*, NB Govt. News Release, Feb. 17, 2016].
- A worker was trying to remove a tire using a propane torch to loosen the lug nuts. Most of the lug nuts were removed when the tire exploded, throwing him more than 20 feet. He sustained fractured limbs, a dislocated knee, torn tendons, facial fractures and loss of an ear. His employer pleaded guilty and was fined \$60,000 [*Langille's Scrap & Cores*, ON Govt. News Release, Sept. 6, 2013].

In fact, Ontario's Ministry of Labour recently released [a hazard alert](#) on tire explosions.

10 SAFE TIRE INFLATION TIPS

The OHS regulations in some jurisdictions may have specific requirements for the servicing of tires on workplace vehicles. For example, Sec. 193 of Alberta's *OHS Code 2009* contains requirements for the servicing of tires, including inflating them.

As always, you should comply with the requirements in your jurisdiction's OHS laws. But as a basic rule, ensure that only a 'competent' worker services, inspects, disassembles and reassembles a tire or tire and wheel assembly. And here are 10 general safety tips to give your workers to help protect them when inflating tires:

1. Follow the manufacturer's specifications for tire and rim servicing.
2. Don't try to seat rim components by hammering, striking or forcing them when the tire is inflated or partially inflated (as the worker in the New Brunswick incident tried to do).
3. Inflate a tire mounted on a split-rim or locking ring wheel only if the wheel assembly is in a tire cage or similar restraining device, and flying parts from a failure or tire rupture can be contained.

4. When the rim wheel is in a restraining device, don't rest or lean any part of your body or any equipment on or against the restraining device.
5. After the tire's inflated, inspect the tire and wheel while they're still in the restraining device to make sure that they're properly seated and locked. If further adjustment is necessary, first deflate the tire before making the adjustment.
6. Don't rework, weld, braze or otherwise heat cracked, broken, bent or otherwise damaged wheel components.
7. Use a clamp-on type of connector to inflate split rim and locking ring wheels. When using such a connector, also use an in-line pressure gauge and positive pressure control, and inflate the tire from a safe position out of the immediate danger area.
8. Never introduce a flammable substance such as ether into a tire.
9. Don't heat a rim, such as by welding, using cutting torches or with any other procedure that would cause extreme heat, while the tire's still mounted. The tire should be removed from the rim *before* this type of work is conducted.
10. Don't over-inflate a tire.