

March 2024

Technician Injured when Overinflated Tire Explodes

An inexperienced technician at a tire shop was changing an irrigation system tire mounted on a 24.5-inch single-piece wheel. He had only been working for the employer for about four months. His training had not specifically included changing irrigation system tires, but he had been trained on similar semi-truck tires.

The employer's standard procedure was to inflate tires in a metal safety cage to protect workers if the tire or rim failed or exploded. However, the shop only had one inflation cage, and workers explained that when they were busy, they would often just inflate single-piece wheels on the floor to save time.

That day, the technician could not find the tools he usually used, and instead used a hose with a larger air chuck which delivered air more rapidly to the tire than he expected. Instead of using the inflation cage, he leaned the single-rim wheel assembly up against the tire-changing machine.

He did not realize that the tire was becoming dangerously overinflated, and after approximately 45 seconds, the pressure became so great that the wheel deformed and shot out of the tire.

The metal wheel and tire struck the technician, breaking both of his hands and a wrist, which needed multiple surgeries to repair.

What do you think went wrong?

In the space below, list some of the factors that you think could have contributed to this incident. Then, flip the page over for contributing factors and safety recommendations and requirements.



Employer's inflation safety cage, with a tire similar to the one in the incident.



The wheel that shot out of the tire, striking the tire technician.

Reporting: Employers are required to contact DOSH within eight hours of a workplace fatality or in-patient hospitalization of any employee. See [WAC 296-27-031](#).

Contributing Factors

Inflation cage was not used. The employer did not ensure that the technician used the inflation cage while inflating a tire on a single-piece wheel.

Lack of training. The technician had not received training specifically for the type of tire he was changing or the tools he was using, and did not recognize the tire was becoming overinflated.

Recommendations

Provide comprehensive hands-on training. Train workers on and have them demonstrate proficiency with all types of tires they will work on, even if the process is the same for two different tires, and with all types of tools and equipment available for use.

Managers or supervisors should **conduct regular safety walks or inspections** to ensure safety procedures are consistently followed.

Requirements

- Employers must **ensure a restraining device or barrier is used for inflating tires on single-piece wheels**, unless the rim wheel will be bolted onto a vehicle during inflation. See [WAC 296-864-30005\(2\)](#)
- You must follow these **procedures for inflating single-piece rim wheels** (See [WAC 296-864-50020](#)):
 1. Inflate tires only when contained within a restraining device or bolted on the vehicle with the lug nuts fully tightened.
 2. Make sure tires are not inflated when any flat, solid surface is in the trajectory and within one foot of the sidewall.
 3. Make sure workers stay out of the trajectory when inflating a tire.
 4. Make sure, when inflating tires, that the inflation pressure stamped in the sidewall isn't exceeded unless the manufacturer recommends a higher pressure.
 5. Make sure tires aren't inflated above the maximum pressure recommended by the manufacturer to seat the tire bead firmly against the rim flange.
- You must **train employees who service rim wheels**, and **make sure employees demonstrate and retain the ability** to service rim wheels safely. See [WAC 296-864-60005](#) and [WAC 296-864-60010](#)

Resources

- Chapter 296-864 WAC: Split (Multipiece) and Single-Piece Rim Wheels—https://www.lni.wa.gov/safety-health/safety-rules/chapter-pdfs/WAC296-864.pdf#WAC_296_864_60010
- Chapter 296-800 WAC: Safety and Health Core Rules—<https://app.leg.wa.gov/wac/default.aspx?cite=296-800>
- L&I's Consultation Program offers confidential no-fee, professional advice and assistance to Washington businesses. To request an L&I Consultation go to: <https://www.lni.wa.gov/safety-health/preventing-injuries-illnesses/request-consultation/>

Safety Training Sign-In (Print Name Legibly) Date: _____

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