

## WHAT HAPPENED?

A customer dropped a tire rim off at a tire shop and requested a 15" tire be installed on it; the rim came in loose without a tire on it. A tire was selected and a technician then attempted to mount the tire on the rim. However, the tire was binding on the machine before the front tire bead was able to slip over the rim. The tech reversed course and tried the procedure once again with the same result. At this point, the tech attempted to problem solve despite nothing appearing out of the ordinary. The tech looked at the tire sidewall and confirmed it was a 15" tire and then measured across the rim surface to confirm it was also a 15" rim. The rim measurements appeared to confirm this and he conferred his co-workers who agreed with the assessment. The tech attempted to mount the tire once again. This time when the tire began to bind, he forced the tire past the restriction and onto the rim. He began to air the tire and it appeared slow in beading up to the rim. The tire blew up before it was able to seat to the rim flange and threw the tech to the ground, fracturing his arm in the process.

## WHAT DID/COULD HAVE WENT WRONG?

It was later determined that the rim dropped off by the customer was not a 15" rim but instead a metric rim. Metric rims can be found on select vehicles between the years of the late 1970's to the late 1980's. Metric rims are nearly indistinguishable from a standard rim particularly without a tire on them. The tire size displayed on the tire sidewall is the main giveaway when one is dealing with a metric tire. Rather than a traditional tire size of P205/65R15, an example of a metric tire size is 220/55R390. The injured technician had been working in the tire industry for over ten years and never encountered a metric rim or tire before. The Supervisor or Manager within the shop would have identified the rim as metric; unfortunately, they were not consulted. A metric rim measures slightly larger than a standard 15" rim. This caused the tire to bind on the metric rim during installation. When the tire was forced onto the rim, it caused the bead to tear. The compromised tire bead led to the tire blowing apart during inflation.

## KEY LESSONS FROM INCIDENT

*If you're not sure, ASK your Supervisor or Manager!* Many incidents happen as a result of workers not asking for help when they're unsure of how to complete a task. In this instance, a member of the company's Leadership Team would have been able to identify the issue had the concern been brought to their attention.

*Follow your company's safe work procedures;* If a tire is binding on a tire machine, do not force the tire onto the rim. Never inflate a tire with a torn or compromised bead and stay clear of the tire's trajectory zone when inflating.

*Controls;* Use restraining devices and barriers (tire cages) to minimize the effects of a tire rupture. To reduce exposure to the hazard, once the worker has mounted the tire, an auto-fill tire inflator can be used to air it up so the worker does not need to be in the vicinity of the tire during inflation. Additionally, always use the safety restraint arm to hold the wheel in place while inflating on a tire machine if so equipped.

*Education and training;* Ensure that workers are trained and educated about all hazards associated with their work. Example: conducting a periodic toolbox talk about the difference between standard and metric tires/rims.

