

BUSINESS SOLUTIONS PROVIDER

Top 5 tips to maximize forklift
tire safety and efficiency



MODERN
MATERIALS HANDLING

MAXAMTIRE.COM



1. Forklift tire safety components

2. Types of Application

3. Most common tire breakdowns (causes and solutions)

4. Tire replacements vs. Opportunity Cost

5. What to inspect

6. Summary & Questions

What About Safety?



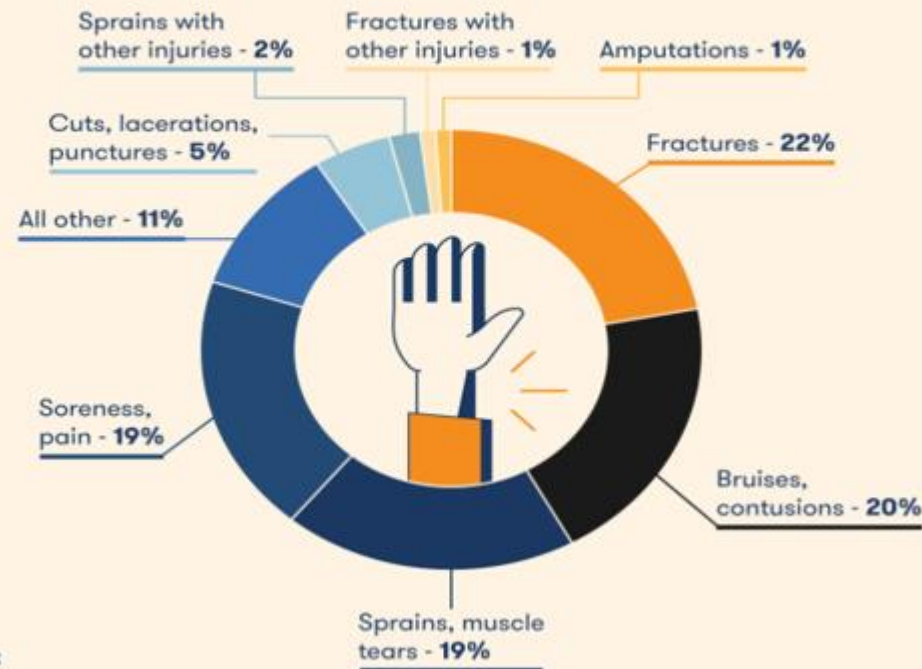
Forklift accidents makeup **25%** of all construction accidents.

70% of forklift accidents could be prevented by operator training and retraining.

\$41,003
Average cost of workers compensation claims

\$13,494
Cost per safety (OSHA) violation

Non-fatal forklift accidents



Source:
U.S. Bureau of Labor Statistics

*sources:
• OSHA
• <https://www.bigrentz.com/blog/forklift-statistics>



1. Environment

- What does your warehouse look like?
- Is everything tidy with enough space?
 - Debris on floor?
- Overall evaluation of the environment the forklifts operate in

2. Application

Do you have the right tire for the right job?

3. Equipment Upkeep

Do you have a preventative maintenance program along with daily checks?

- PM: mechanics (OEM, case by case; also depends on the environment).
- Pre-shift checklist.

4. Operator Training

Is your operator properly trained and continuously receiving training?

5. Warehouse Efficiency

Is your warehouse as efficient as it can be?

- Refer to its blueprint and maximize space.
- Ensure everything's tidy.



Types Of Application



Optimize Safety by Selecting Appropriate Applications

Remember:

This is based on general data; it all depends on operator and environment.



	Press-on	Polyurethane	Resilient	Pneumatic
Indoor	✓	✓	✓	✓
Outdoor	✓	✗	✓	✓
Outdoor (rough terrain)	✗	✗	✓	✓
Debris in work area	✗	✗	✓	✗
Lifespan	Standard	Long	Long	Standard
Durability	High	High	High	Standard

Forklift Accidents

Danger of Unmaintained Tires in Your Fleet

When does it occur?

When the forklift becomes unstable due to shifts in the center of gravity.

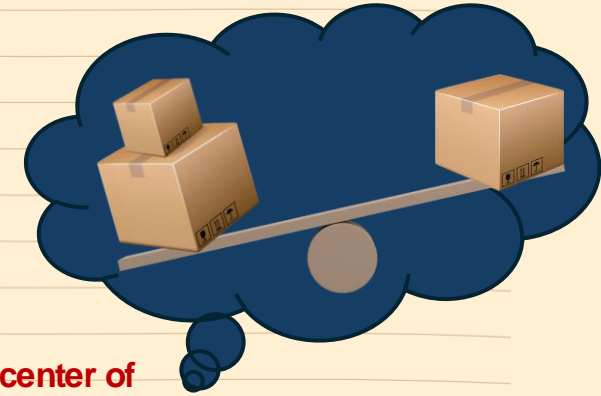
- If it falls outside of the “stability triangle” (from the center of the rear axle to the front wheels), a tip will likely occur.
- Driving down a ramp when the center of gravity moves too far forward.
- Shark turn when center of gravity shifts too far to the left/right of the wheelbase.



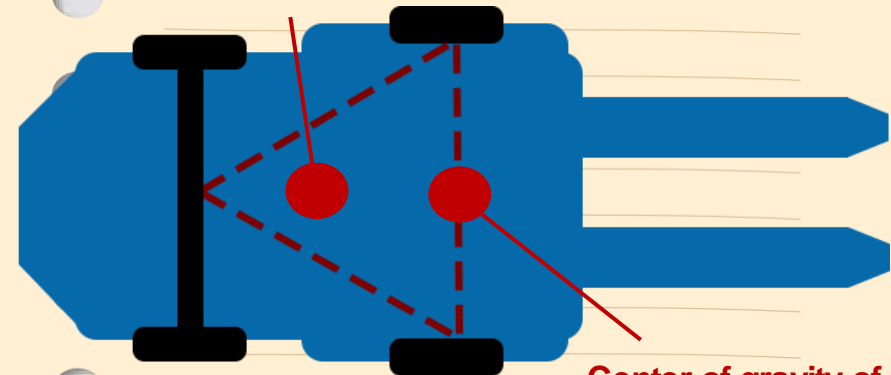
Lift truck instability leads to human injury and product loss



MAXAM PRO TIP



Vehicle center of gravity (unloaded)

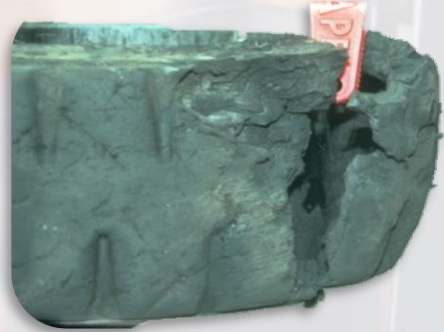


Center of gravity of vehicle & maximum load

Most Common Misapplication Tire Breakdown



Operational & Environmental Safety Opportunities



Chipping & Chunking

Cause

Running over debris, bad flooring and dock plates, etc.

Solution

Maintain flooring & ensure operator is trained. Replace tire with special compound if needed.



Uneven wear

Cause

Forklift axles not aligned properly.

Not using the right application.

Solution

Repair forklift axles.

Properly analyzed application and solution.



Radial Cracking

Cause

Overloading above rated capacity.

Solution

Likely due to production error.

Other Misapplication Tire Breakdown



Operational & Environmental Safety Opportunities



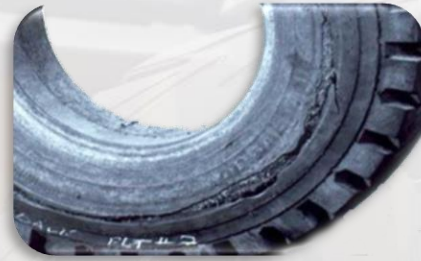
Blow-out

Cause

Heat buildup due to high duty cycle, heavy loads & long runs.

Solution

Replace with larger tires that have special compound to meet the demand.



Base/Cap Separation

Cause

Heat buildup due to high duty cycle, heavy loads & long runs.

Solution

Likely due to production error. Contact your manufacturer for a resolution.



Pitting/Cupping

Cause

Bearing issues.

Solution

Repair equipment soon.



Flat Spots

Cause

Spinning & skidding when stopping.

Solution

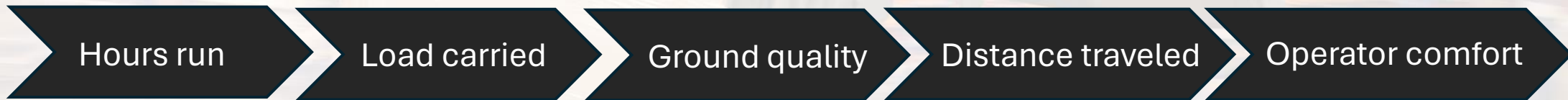
Operator training & replace with tires that have better traction, compound & tread.

How Application Intensity Impacts Safety



Quality = safe and efficient operation

Intensity Considerations



Standard Press-on

- Standard compound
- Average tire life
- Less ride comfort



Standard Resilient

- 2-stage built
- Average tire life
- Less ride comfort



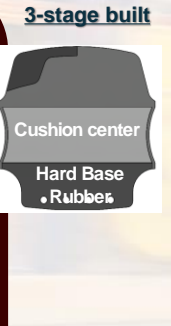
Premium Press-on

- Premium compound
- Maximum tire life
- Superior ride comfort
- Sustainability technology



Premium Resilient

- 3-stage built
- Maximum tire life
- Superior ride comfort
- Sustainability technology



Light use

Heavy shifts

How to Read/Measure Your Forklift Tires



Knowing when to replace tires for optimized safety

Press-on Tire

Resilient Tire

(type I- narrow base)

Resilient Tire

(type II- Low-Profile in Imperial Units)

Resilient Tire

(type III- Low-Profile in Metric Units)



Example: 21 x 7 x 15

Example: 7.00-12 / 5.0

Example: 23 x 9 - 10

Example: 200 / 50-10

A = Outside Diameter
21 inches

A = Second width
7 inches

A = Outer Diameter
23 inches

A = Section Width
200 mm

B = Width of the steel band
7 inches

B = Rim diameter
12 inches

B = Section width
9 inches

B = Aspect Ratio (section height/section width
50%)

C = Wheel/hub diameter (ID)
15 inches

*nearly one-to-one aspect
ratio (tire section height
relative to section width).

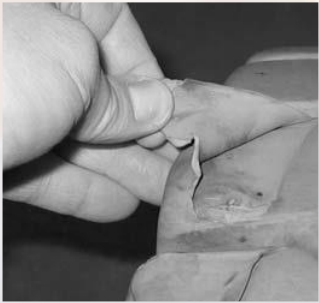
C = Wheel Diameter
10 inches

C = Wheel Diameter
10 inches

*refer to tire outer diameter in inches,
followed by the tire section width in inches,
and wheel size in inches.

*refer the tire section width in millimeters, the aspect
ratio, and the wheel diameter in inches.

What to Inspect On Your Forklift Tires



Delamination



Radial cracking



Tread separation



Chunking



Wheel slippage



Tire / rim slippage



End of Life



Steel band debonding



Tread blocks tearing

Check tread wear

*Lateral Measuring



Resilient

Check the "J line"; once it reaches there, it's time to consider changing your tire.



Press-on

2/3 of the OD, or top of the line.



Facts to remember - how forklift tires affect safety



Operator will absorb
84% of shock if a tire is
40% overworn



TRANSMISSION

works harder to turn the tires, which can result in a

BREAKDOWN.



Benefits of Proper Tire Care

- Increased tire life
- Increased productivity
- Reduced fuel consumption
- Improved operator comfort
- Safer operation

Summary: Why Forklift Tire Safety?



01 Optimized Performance
Ensuring you optimized forklift and its tire safety; application + environment.

02 Optimized Production
By having a safe operation, you'll optimized your production.

03 Optimized Safety
By optimizing performance, you'll minimize accidents and maximize safety in your warehouse.

04 People
By optimizing performance, production and safety, you're prioritizing your people and ensuring optimum working environment.



Bonus: Forklift pre-shift checklist



- Damage:**
Bent, dented, or broken parts
- Leaks:**
Drive unit, brakes, hydraulics
- Forks**
In place, properly secured
- Chains, cables, & hoses**
In place
- Hour meter**
Operating
- Battery**
Water level, vent caps in place, cleanliness
- Battery connector**
Cracked, burnt, tight fitting
- Guards**
Overhead, load backrest, battery retainer
- Horn**
Sounds
- Steering**
No binding, no excessive play
- Limit switches**
Travel limit, lift limit, tilt limit, etc.

- Safety devices:**
Flashing lights, indicator lights, fall arrest device, warning labels, etc. in same condition as equipped
- Travel controls**
All speed ranges, forward & reverse, no unusual noise
- Hydraulic controls**
Raise/lower, tilt forward/backward, reach in/out, side shift right/left, no unusual noise
- Brakes**
Stop truck within required distance, work smoothly, brake override functions
- Parking brake**
Seat, hand, foot
- Battery charge**
Discharge meter in full green or 75% charge after raising forks
- Power disconnect**
Cuts off all electric power
- Attachments**
Function properly, no unusual noise

Q&A (seeded questions)



1. Where/how does pricing fall into quality?
2. Do I need traction tires on my indoor forklift?
3. Do steer tires need traction?
4. Should I be getting this many hours as marking vs. non-marking?
- less carbon in a non-marking tire
5. How does standard vs. halo/swift tires impact safety?

THANK YOU

