



WHITE PAPER

Seven ways to enhance productivity through lift truck safety

Training and technology strategies to help reduce costs and boost lift truck operator safety

Did you know that businesses spend about \$171 billion per year on costs related to occupational injuries and illnesses? Today's fast-turn, customer satisfaction-driven economy puts more pressure than ever on warehouse and distribution center employees to meet productivity goals. With tight order fulfillment deadlines and long hours pushing personnel and processes to their limit, operations can be vulnerable to safety risks, including:

- Operator error
- Incidents and injuries
- Occupational Safety and Health Administration (OSHA) violations and penalties
- Insufficient maintenance practices

Fortunately, there are steps that companies can take to mitigate those concerns. According to OSHA, workplaces that establish safety and health management systems can reduce their injury and illness costs. In other words, it should be a major objective of operations to take steps to build and maintain a culture of lift truck safety. Working with a materials handling supplier that prioritizes innovation affecting all aspects of the warehouse, including safety, is a significant step in the right direction.

This white paper offers a step-by-step approach to help foster a workplace characterized by lift truck safety through proper training, advanced technologies and maintenance best practices.



Make training a priority to reduce operator error

Operators who are poorly or insufficiently trained can create unsafe situations for themselves and their fellow workers and reduce their ability to meet productivity standards. To foster a culture of safety, operators are required to receive training for powered industrial trucks that adheres to OSHA standards and is tailored to the operator's exact use of the equipment – specific to the site, truck class and application. The OSHA certification process is composed of three parts – formal instruction, practical training and operator evaluation.

Some materials handling providers offer training video content that can fulfill most of the truck-related topics in the formal instruction requirement, to help high-intensity warehouses take control of their lift truck operator training. Operations considering this option can benefit from working with a provider that uses enhanced adult learning techniques to support engagement and comprehension. For instance, videos that divide material into shorter sections interspersed with hands-on learning periods can help keep learners engaged. Updated, modern graphics and other multimedia tools can help present critical information in a familiar visual format and at a pace that supports a wide range of adult learners.

Hands-on safety demonstrations and instruction are also essential elements of any training program. Assigning an experienced mentor to work directly with new hires provides an additional resource for asking questions and obtaining facility knowledge, increasing the chances of successful onboarding.

In addition to operators, pedestrians must understand how to interact safely with lift trucks. These employees should participate in training that addresses pedestrian safety issues throughout the facility, including interactions with lift trucks and other mobile equipment, as well as understanding hazards presented by mobile equipment in that facility. A pedestrian training program should also cover topics such as wearing safety vests for greater visibility, posting pedestrian signs in locations where lift trucks operate and, where possible in each facility, providing separate travel zones for pedestrians and trucks.

Properly training employees can help organizations:

- Reduce lost-time injuries
- Limit incidents resulting in medical expenses and workers' compensation claims
- Improve OSHA compliance and avoid related penalties
- Boost driver efficiency
- Decrease product damage and accidents
- Reduce lift truck downtime



According to OSHA, 70% of forklift safety incidents can be attributed to operator error. With effective training, OSHA estimates that lift truck incidents could be reduced by 25%, while operator performance scores could see a 61% improvement, helping increase throughput and reducing downtime.

Enrich training with virtual reality technology

Facilities looking to enrich their training portfolio may want to consider simulation. While they are not a substitute for OSHA-mandated hands-on training, forklift simulators can help operators learn accurate equipment response, complete with automated, real-time feedback on their performance, all while working in an immersive and realistic 360° learning environment.

Using a simulator to sharpen skills may help reduce the risk of product damage, facility damage and injury associated with operating a real lift truck in an active work setting. This virtual approach allows new employees to practice in a safe, low-pressure environment and helps them make better use of their live, in-person training.

Organizations augmented by automation technologies are 33% more likely to be “human friendly” workplaces, where employees are 31% more productive. Why? Because robotic equipment frees workers from the monotony of repetitive tasks and allow them to focus on more rewarding work.

Adhere to safety protocols with robotics

Warehouse turnover continues to be widespread, climbing from 40% annually to nearly 50% over a five-year period. Rising turnover rates increase the training burden on facilities in getting new operators up to par. Meanwhile, having new and inexperienced operators on-site can increase the risk of site-specific safety protocol and traffic rule infractions.

Thanks to navigation technology and site-specific programming, robotic lift trucks can adapt to surroundings and real-time conditions while strictly following safety protocols. This capability can help reduce the risk of accidents and collisions, especially compared to manual lift trucks operated by new employees.

Of course, warehouse workers must also be trained on how to properly interact with these robotic lift trucks. While robots have sensors and systems designed to prevent impacts, guests and facility personnel can be unpredictable, which makes clear explanation and enforcement of rules all the more important.



Use telemetry to protect assets, manage costs and optimize productivity

Technology can also help companies manage equipment and operator behavior. Remote data monitoring solutions, such as telemetry systems, make critical maintenance data accessible, while also providing alerts and fault codes related to hazardous driving behaviors, such as excessive speed or impacts. Having access to this kind of data allows organizations to isolate and work on remediating problem areas and reinforce best practices to promote safety.

Telemetry can be used to enhance safety by:

- Tracking scheduled periodic maintenance (PM) tasks and triggering service calls based on equipment diagnostics
- Restricting truck access to approved operators
- Tracking training updates
- Requiring OSHA pre-shift checklist completion before truck operation
- Identifying efficient routes via GPS monitoring to influence facility layout and traffic patterns
- Providing supervisors with impact detection, alerts and other data associated with operator performance
- Equipping managers with data to help identify operators who require additional training

Some original equipment manufacturers (OEMs) offer an optional impact camera that syncs with the impact detection of the main telemetry system, automatically saving video footage three minutes before and after an impact. Not only does this feature help provide clarity when impact incidents occur, it also promotes operator accountability in adhering to safe operating practices.

Another telemetry feature available on some systems is load sensing. Depending on the system and truck configuration, if onboard sensors detect a load beyond the truck's rated capacity, the telemetry system can respond in a variety of ways, including alerting the operator via the display, notifying supervisors of the event, and setting hydraulic and traction restrictions.



Reinforce best practices with operator assist solutions (OAS)

A broad category of tools known as OAS can provide operators with varying levels of real-time support. For one, stability control systems monitor input from the lift truck, and when they detect it exceeding certain designated stability thresholds, provide alerts and apply automatic interventions to help reduce the likelihood of forward and sideways tip overs. Such systems work to help support stable travel and provide operators with an immediate layer of feedback to reinforce the best practices they learned in their training.

An even more advanced type of operator assistance technology has emerged to help reinforce lift truck operating best practices and support operator awareness. It works by controlling truck performance based on real-time information about not only the equipment, but also the operating environment. One such system, Yale Reliant™, offers redundant detection systems to trigger dynamic alerts and can apply a broad range of equipment controls based on proximity to pedestrians and obstacles, load weight, equipment status and location-specific rules.

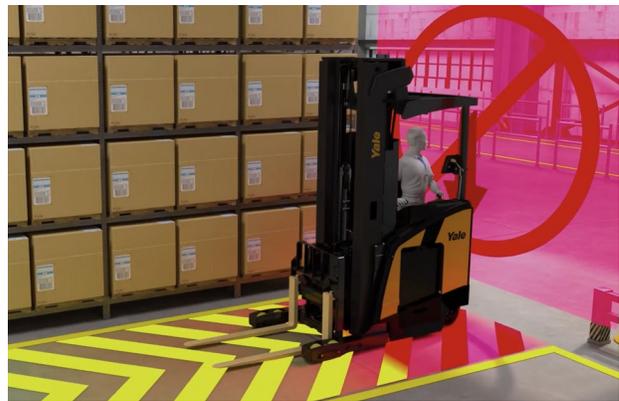
In practice, this technology can work to:

- Automatically slow down lift trucks as they approach the end of an aisle, an intersection, another piece of equipment or an obstacle.
- Limit speed in designated zones or even prevent access to pedestrian-only areas.
- Proactively reduce speed when traveling around corners to avoid upsetting stability.
- Prevent trucks from moving loads that exceed weight thresholds through hydraulic lock-out.

Used as a complement to proper operator training, an operator assist solution can help reinforce lift truck safety initiatives that allow businesses to maximize operator productivity and equipment uptime.



Automatic speed reduction when cornering for stability



End of aisle slowdown when approaching the end of an aisle



Limited speed and acceleration when moving in pedestrian-heavy areas

Give your operators comfort and control where it counts

Sprains and strains account for 36% of workplace injuries and are the most prevalent type of injury to the back, shoulder and knee. Since operators spend the vast majority of their time sitting, standing and twisting, ergonomics is key for enhancing comfort, productivity and safety.

Lift truck manufacturers have made significant strides in the development of ergonomic features that complement safe materials handling practices. Some of these features include:

- Open air compartments for greater comfort and convenient exit and entry
- Enhanced visibility to avoid straining and awkward positioning
- Padded compartments with adjustable features for support
- Pedal-free floor systems to allow for natural stance and freedom to change position
- Adjustable steering columns with tilt memory for ergonomic positioning
- Fingertip controls for easy access and low-effort activation
- Electric power steering for reducing road shock through the steering wheel or tiller

Carefully evaluate equipment so that operators can stay fresh and productive and reduce their risk of injuries related to poor ergonomics.



Don't skimp on maintenance

Maintenance plays a major role in creating a safe and more productive work environment. Something as common as an oil leak can cause someone to slip, leading to downtime, lost productivity and financial impacts.

By executing a PM program, organizations can be confident that each lift truck receives timely, thorough inspections, while also keeping equipment at peak operating efficiency. Often, lift truck dealers and OEMs offer turnkey PM programs so that organizations can focus on their core business, rather than equipment maintenance.

When a lift truck is out of commission for maintenance or service, it is inadvisable to fill the gap with just any truck. Using a piece of equipment that does not fit the requirements of the specific task can put the operator and others at risk. A proper PM program can help guarantee that an operation has the correctly configured backup trucks available.

How does a PM program help curb hazards?

- Provides timely, thorough lift truck inspections
- Confirms equipment is in peak operating condition
- Helps identify mechanical issues that could be hazardous or costly
- Reduces unplanned downtime, increasing application-specific truck availability

Safety can help enable productivity advantages

Contrary to popular misconceptions, adherence to strict safety standards does not run counter to the aggressive productivity targets and speed of modern supply chains. Safe operating practices can help avoid unplanned downtime and costs that can eat into the already thin margins. A partner with a strong safety background can help your organization leverage advanced technology and tried-and-true safety practices to keep warehouse operations running efficiently.



For more information about enhancing the safety of your operation through proper training, innovative solutions and maintenance best practices, contact your local [Yale® dealer](#).