Visibility: The Ultimate Secret to Preventing Forklift Accidents

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**About LIFTek**
No forklift operation environment is perfect: Forklift operators make mistakes, products get dropped, equipment gets damaged.

However, as a warehouse manager or operations executive, you know that it’s your job to help create an environment in which these kinds of mistakes are all but eliminated. And whether you achieve these goals through intensive training, strategic hires, or equipment upgrades, you know one of the biggest challenges is limited vision.

The ability of your forklift operators to see where they are and where packages and products are being manipulated are of utmost importance. The slightest error could result in serious damage to products, equipment, or -- even worse -- people.

Which brings us to the important topic at hand: how to reduce blind spots. There are a number of tools available that work to reduce blind spots with forklift operations, and many work to promote productivity and profitability in your warehouse.

Limited Vision and How It Affects Your Forklift Operator

Operating a forklift is a complicated process, and forklifts are not forgiving pieces of equipment. Forklift operators need excellent judgment and fine motor skills to avoid damaging the equipment, but even the best forklift driver can’t always navigate around blind spots.

Blind Spots - Where They Occur

There are a number of common blind spots in your typical counterbalance truck that can hinder your operator’s view. Here is a quick list of where the most common blind spots occur and other situations that can limit your operator’s vision:

**Common Blind Spots:**
1. Directly behind the truck counterweight
2. Far sides or rear corners of the truck
3. In front of the mast, fork carriage, or handling attachment
4. Views blocked by the overhead guard supports front, rear, sides
5. Views blocked by the overhead guard when looking up
6. Views blocked by the LP fuel cylinder

**Types of Racking That Limit Vision:**
7. High racking
8. Double deep racking
9. Push back racking

**Situations that Limit Vision:**
10. Truck bed loading (right at eye level) carriage blocks view of forks.
11. In poor lighting conditions
12. When using a quad mast
13. When using special handling attachment
14. When using enclosed cabs
15. While working in congested work areas
16. When carrying hard to engage loads – irregular or small fork pockets, etc.
17. When carrying large loads

**Blind Spots - Implication On Your Business**

Blind spots aren’t just dangerous for your operators, they have a direct negative impact on the productivity and profitability your business. Because the true costs of limited visibility are often overlooked, here is a checklist of things to look for when auditing your forklift productivity.

**Things to look for:**

**Unsafe Behaviors**

1. Trial and error (fork insertion, load placement)
2. Pushing / pulling a load off a rack (near or far side)
3. Backing up until you bump into something (racking, product, walls, etc.)
4. Operator getting off the truck in order to see
5. Disabling a seat belt or seat safety switch to make it quicker to dismount
6. Standing up to drive or leaning far over the side while operating
7. Operating with missing or poorly adjusted mirrors
8. Any “near miss” event – involving pedestrians, vehicles or fixed obstacles
9. Using a spotter up in the racking and / or fork riding
10. Neck, back repetitive stress injury from looking overhead

**Damage**

1. Caused by forks – piercing due to poor visibility
2. Fork over-insertion – damaging a load or rack on the far side of the pick
3. Fork carriage over-insertion direct contact damage to the load
4. Pushing / pulling a load through unintended engagement
5. Dropping a load – through poor engagement
6. Product hitting product damage during handling
7. Broken pallets, excessive pallet debris on the floor
8. Damage to racking: via forks, backing up, or contact with loads
9. Forklift paint or surface damage anywhere (back, sides?): what is being hit?
10. Backing up damage: bumping product, racking, etc.

**Reduced Productivity**

1. Having to use spotters for load picking, placement
2. Having to use spotters for vehicle maneuvers
3. Working slowly because operator can’t see
4. Picking wrong product (returning product and re-picking correct product)
5. Operator neck, back pain and fatigue from straining to see
6. New operator low productivity due to skill required
7. Lost time, cleanup, repair, repacking etc. caused by damage to product, racking
Having to re-palletize a load due to a broken pallet

The Top Three Tools That Reduce Forklift Blind Spots

There are a number of different tools that can be used to reduce blind spots when operating a forklift.

Here’s a look at three popular methods -- mirrors, lasers, and cameras -- using the example of a common counterbalance truck.

**Mirrors**

Mirrors are the first step in improving forklift visibility because they often come installed on the sides of the truck. However, there are a few challenges that come with mirrors.

First, the original position of the mirrors generally only give you views of the sides of the truck. Second, many forklifts come without important additional mirrors such as a front-middle, leaving the company and operator in charge of installation. If your forklift comes standard with install the mirrors, they risk blocking the view to the front or back of the forklift. In the end, you could end up with just as many blind spots as you started with, if not more.

**Lasers**

Forklift laser guides set a laser on the forklift carriage to allow the operator to aim at the fork pockets more accurately. Lasers can help cut down on trial and error attempts, but they only work well for indoor, palletized loads at low to medium height. Forklifts that need to work in natural lighting or at high heights won’t benefit, and the issue of visibility for the forklift driver is as present as ever.

**Cameras**

Forklift cameras can directly contribute to increased visibility in every possible forklift environment. Cameras can be mounted in a variety of different locations all around the forklift. The cameras provide views for the fork, mast, sides, rear, and more, and they assist operators in dealing with a number of considerations such as the following:

- High- and low-racking heights
- Indoor and outdoor lighting
- Double-deep racking
- Reading product and rack labels
- Video recording for human resources, verification, management, and training opportunities

Cameras also function equally well with any kind of operational or attachment forklift tasks such as the following:

- Roll handling for paper and sheet metal
- Turret trucks with forks swing different ways
- Push pulls that push the loads on cardboard
- Side Shifting Fork Positioners (SSFP) attachments
- Clamps
**Types of Forklift Cameras**

“Carriage” views from a forklift move up and down with the forks of the forklift, allowing the cameras to remain useful at any fork level. Fork insertion, also known as load engagement, at high elevation, or deep racking, is the task that will most benefit from a forklift camera.

**Uses:**
- Fork depth and insertion control
- Fork side to side placement
- Any small fork pocket problem

**Location on Graphic:**
- **(1) Carriage Fork Level (Fork View)**
  - This camera placement is best for fork elevation, fork insertion, and some limited views through and beneath pallets for load placement. This camera is the most exposed in terms of possible contact and damage, and it is sometimes difficult to mount.
- **(2) Carriage Mid-level**
  - If a fork-level view is not possible, the mid-level carriage view is the best compromise. While this location is less accurate for fork elevation, it does allow the operator to see fork depth and side to side location more clearly. It provides no view under loads for placement.
- **(3) Carriage Load Backrest**
  - This camera is best for overview in front of the carriage, fork depth, and side to side view.
This camera is generally not good for fork elevation because it provides no view under loads for placement.

**Mast Views**
The purpose of mast view cameras are to help with safety, fork depth, and side to side placement. The mast view camera is stationary to the forklift floor, which means that it doesn’t move up or down with the forks. This placement makes this camera less expensive than others and less likely to be damaged.

**Uses:**
- Side view
- Behind view

**Location on Graphic:**
- (4) Mast Forward View
  - This camera provides an overview in front of the mast or forklift attachment. It functions best for low-level work, including safety, fork depth, and side to side placement.
- (5) Mast Rear View
  - This camera provides a bird’s eye view of the forklift’s sides and rear. This camera is only usable when the mast is tall.

**Rear Views**
The rear view camera adds a wide field of view behind the forklift truck, allowing the forklift operator to more easily see moving targets and complete precise, safe backing up for congested areas and counterbalance trucks.

**Uses:**
- Behind view
- Backing up in congested areas
- Backing up with counterbalance trucks

**Location on Graphic:**
- (6) Overhead Guard Rear View
  - This camera provides a large overview behind the forklift truck, minus a small blind spot directly behind the counterweight.
- (7) Counterweight Rear View
  - This camera provides a smaller, limited view behind the truck with no blind spot. This camera is best for precise backing up in tight quarters and preventing rack damage due to backing up.

**Major Benefits of a Forklift Camera**
The benefits of comprehensive video camera coverage reach into many aspects of forklift and construction work. Here’s a look at how forklift camera coverage could benefit your business:

**Improve Productivity**
The most seasoned and experienced forklift operators experience fatigue because of how much time is spent craning to see behind and around the forklift. Forklift operating
cameras allow operators to see the entire field of view without adjusting their position. This reduces neck and back strain, and increases productivity and energy.

**Eliminate Trial and Error Time**
The ability to see exactly how the forklift fits into certain spaces eliminates the need for repetitive trial and error. This saves time and action, but it also allows your team to see exactly where they put their forks and reduce the risk of damaging products.

**Speed Up Load Time**
When forklift operators can’t easily see their surroundings, they have to move slowly. Forklift cameras provide much needed visibility that allows your team to grab loads quickly and without getting out of the forklift truck.

**Reduce Staffing**
When forklift operators have complete visibility, there’s no need to have a guide for your forklift operator. This means your forklift can operate with one fewer team member, freeing up that person to take on other work in your warehouse.

**Increase Safety for Operators and Products**
Increased visibility and coverage decrease the chance of an accident on the job. This protects both your valuable teammates and your customer’s products.

**Save Money**
Increased visibility leads to increased productivity and safety for your operators, as well as further protection of the goods you transport. Increased visibility also allows new operators to function just as well as seasoned operators, which means you will be able to reduce your training and hiring costs.

**Appeal to Younger Teams**
Recruiting new forklift operators can often present a challenge. However, forklift cameras create a fun, interactive experience for young operators who can identify with the “video game connection” they experience from operating a forklift.

**Tips for Implementing Forklift Cameras**
Ready to upgrade your forklift operation to include a camera system? You'll want to prepare your team and your process for the change.

**Your Team**
When the time comes to train your organization to use forklifts with camera systems, work with your teams to address their individual concerns. In particular, make sure you have buy-in from the people who will be actually using the camera - your forklift operators.

Companies often struggle to achieve operator buy-in because teams naturally fear change. However, forklift camera buy-in is a very important step in achieving the maximum benefit of the cameras themselves.

To encourage your team to get involved, invite each team member to participate. Ask for feedback and opinions during the training process and even once the usage of the cameras is established. Make sure your team has free range to share what they can see, what they need to see, and what they think about the new system.
Your Equipment
While forklift camera systems provide increased visibility and all of the benefits above, it’s important to remember that the forklift operator must maintain overall awareness. Forklift cameras are used to focus attention on a limited area or blind spot during a precise final placement or movement during loading or unloading. They aren’t intended to replace the overall watchfulness and coordination of your expert forklift operator while the forklift is driven forward or reverse.

Effective and efficient forklift operation involves a number of moving targets in the field. Your success relies on highly trained and specialized operator teams, well-maintained equipment, and the careful operation of your individual forklift machines. The best way to protect your team, your products, and your forklifts is to invest in forklift camera systems that will increase the visibility, productivity, and speed of your team today.

If you’re interested in learning more about how a forklift camera could benefit your facility, don’t hesitate to contact us using the button below.

About LIFTek
LIFTek supplies operator aids for cranes and materials handling equipment. We take pride in our proven track record of "on time" deliveries, quality products and exceptional service to both OEM and aftermarket clients in the U.S. and Canada. We provide free telephone support, same day shipping and same day repair service for our standard products. We look forward to working with you select a standard product or develop a system that meets your special requirements.