REDUCING ACCIDENTS IN THE WASTE INDUSTRY

An in-depth look at COLLISION MITIGATION SYSTEMS and how they reduce struck-by accidents from blind zones on waste industry vehicles.
INTRODUCTION

The waste & recycling collection industry is a necessity for modern day life. It is also one of the most dangerous. In fact, the waste & recycling industry is the 5th most dangerous occupation in the United States. According to the National Institute for Occupational Safety and Health (NIOSH), workers in solid waste collection were also in the top three job classifications to have the highest number of nonfatal injuries and illnesses, most caused by overexertion, being struck-by, striking against, or being compressed in equipment.

From July 2015 to June 2016, there were 98 fatalities directly related to the waste industry, with 60 of those being civilians. Over one-fourth of these incidents were a result of a collision between a waste collection vehicle and a pedestrian or bicyclist.

The increase in the injury rate for collection employees to levels not seen since 2008 is alarming, and the high injury rate for employees at recycling facilities also remains a concern.

David Biderman,
Executive Director & CEO SWANA
THE REAL COST OF BLIND SPOT ACCIDENTS

A recent study found that over 50% of solid waste companies have experienced as many as five separate blind spot accidents in the past 12 months.

Data from the Federal Motor Carrier Safety Administration shows that the average cost of a waste collection truck accident that results in an injury is approximately $97,000. It has also been found that the average cost of a heavy-duty vehicle accident that results in a fatality is $3,895,843. This number takes into consideration Quality of Life Costs.*

How does a company determine the real cost of a blind spot accident? Direct costs are the most obvious factors, including worker’s compensation, property damage, and legal fees. Less obvious factors include indirect costs like production downtime and insurance premium increases. But some of the most impactful costs—the intangibles—are often overlooked: how preventable accidents affect the attitudes and opinions of employees, customers, and competitors toward the company.

Determining the real cost of a blind zone accident:

<table>
<thead>
<tr>
<th>Direct Costs</th>
<th>Indirect Costs</th>
<th>Intangibles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Damage (per vehicle): $$$$</td>
<td>Downtime (per day): $$$$</td>
<td>Company’s Goodwill ???</td>
</tr>
<tr>
<td>Worker’s Comp: $$$$</td>
<td>Management Distractions: $$$$</td>
<td>Company’s Reputation ???</td>
</tr>
<tr>
<td>Injuries: $$$$</td>
<td>Insurance Premium Increase: $$$$</td>
<td>Employee Morale ???</td>
</tr>
<tr>
<td>Fatality/Lawsuit: $$$$</td>
<td></td>
<td></td>
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<tr>
<td>Legal fees: $$$$</td>
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The average cost of a waste collection truck accident that results in injury is $97,000.

SAFETY TECHNOLOGIES AT WORK TO MITIGATE STRUCK-BY BLIND ZONE ACCIDENTS

Each month, there are 3-4 fatal accidents involving a solid waste employee or vehicle and dozens of accidents. Backing and rear-end collisions are the most common causes of injury within the solid waste industry. An on-foot worker is almost 2 times more likely to be involved in a fatal accident when the equipment is in back-up motion.

A common reason preventable struck-by accidents happen in the solid waste & recycling industry is that active safety technology is not installed or used. Many OEMs now offer safety technology as a standard feature on new heavy equipment. But when the lifespan of heavy equipment is taken into consideration, it will be decades before safety equipment is standard on all working machines. Consider retrofitting existing equipment with active safety technologies.

SAVE THROUGH SAFETY

STUDIES SHOW THAT A GOOD SAFETY AND HEALTH PROGRAM CAN SAVE UP TO $6 FOR EVERY $1 INVESTED.

The average cost of heavy duty-vehicle accident that results in a fatality is $3,895,843.

*Heavy-duty equipment statistics as they apply to landfill equipment
THE IMPACT OF BLIND SPOT ACCIDENTS

In a recent PRECO survey of waste & recycling employers and employees, 93% of participants found that downtime due to struck-by blind zone accidents significantly affects worksite productivity. Productivity slows or halts due to damage to equipment and property, and injuries and deaths to workers and civilians.

Damage from preventable struck-by accidents:

<table>
<thead>
<tr>
<th>Damage Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light vehicle/equipment damage</td>
<td>72%</td>
</tr>
<tr>
<td>Property damage</td>
<td>47%</td>
</tr>
<tr>
<td>Heavy vehicle/equipment damage</td>
<td>29%</td>
</tr>
<tr>
<td>Multiple pieces of equipment/vehicle damage</td>
<td>15%</td>
</tr>
<tr>
<td>Worker injury/fatality</td>
<td>9%</td>
</tr>
<tr>
<td>Casual injury/fatality</td>
<td>7%</td>
</tr>
</tbody>
</table>

SAFETY SOLUTIONS AT WORK

In the PRECO survey, respondents listed the various safety technologies and measures they use to prevent accidents. Two of the most common measures—spotters and mirrors—are hindered by equipment blind spots.

Safety measures at work:

- 6% forward collision warning
- 80% cameras & monitors
- 33% object detection sensors
- 91% mirrors
- 64% spotters

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OTHER STEPS BEING TAKEN TO MITIGATE BLIND SPOT ACCIDENTS

FREQUENT TRAINING, INCLUDING PROFESSIONAL DRIVING IMPROVEMENT COURSES
REGULAR STAFF MEETINGS WITH FOCUS ON KEEPING SAFETY A PRIORITY
PARTICIPATE IN ASSOCIATIONS AND PEER NETWORKING TO STAY CURRENT ON WASTE INDUSTRY SAFETY TRENDS AND TRAINING
EXPANDING COLLISION AVOIDANCE EQUIPMENT INSTALLED ON TRUCKS

SAFETY TECHNOLOGIES INSTALLED ON INDUSTRY EQUIPMENT

Survey participants indicated which safety technologies they currently use, technologies they plan to install within a year, and technologies they would consider purchasing.

Integrated object detection sensor & vision warning system:

- 11% currently have integrated object detection sensor and vision warning system
- 57% are considering installing integrated object detection sensor and vision warning system
A PROVEN STRATEGY TO MITIGATE BLIND SPOT ACCIDENTS

Based on insights gained from industry research, and PRECO’s expertise as the industry leader in technology-based object detection systems for heavy-duty equipment, here are some tips to help create a safe and healthy work environment.

Create a Safe Working Environment:

- Make safety a company-wide strategic goal.
- An emphasis on safety must come from the top down.
- Remind employees that their families depend on them to come home safely every day.
- Practicing safety is a life or death activity. Communicate that to your employees.
- Emphasize safety through the use of signage throughout the workplace and company vehicles.
- Make participation in an annual safety training program mandatory.
- Provide coaching to employees who need to address unsafe behaviors or habits.

Every piece of heavy-duty equipment is different. Since vehicles are designed for specific and usually logistically complicated tasks, no one-size-fits-all safety package works for every equipment type. By accounting for all of the unique variables associated with a wide range of heavy equipment, collision avoidance systems can fill in the gaps and blind spots in safety practices over a wide range of industries. By integrating radar with other active and passive technologies, the ultimate collision mitigation safety solutions comes into focus.

TURNING PASSIVE SYSTEMS INTO ACTIVE SAFETY SOLUTIONS

Vision systems have become a critical part of safety in the solid waste industry. Currently, many OEMs offer visibility cameras to help companies avoid unnecessary accidents and potential litigation. However, this technology is a passive approach to collision avoidance. This is because camera/monitor systems require the attention of the equipment operator, putting the responsibility on the operator to identify an obstacle or person at risk of being struck.

Active warning systems rely on sensor technology, such as object detection radar, to identify the potential danger. As soon as an object is detected, the operator receives an alert. The alert gives them the opportunity to identify the potential threat using the vision system, and then take appropriate action.

By integrating active and passive safety solutions, operators achieve the best of both worlds. Radar/vision fusion provides an object detection solution with both audible and visual alerts to actively notify an operator of potential collision danger. Regardless of where the operator’s attention is directed, if an object or person is in the vehicle’s blind spot, the system alerts the operator, and the operator is able to react before a potential accident occurs.

“Too many workers are getting hurt, in spite of increased attention being paid to safety by some employers and the ongoing introduction of new safety-related equipment and programs.”

David Biderman, Executive Director & CEO SWANA
PRECO ULTIMATE SAFETY SOLUTION

Installing collision mitigation solutions on vehicles will further help to significantly reduce struck-by accidents and fatalities. PRECO’s PreView® Radar Object Detection Systems help to improve driver engagement and situational awareness in real time. Our systems are specifically designed to serve the vehicle or machine type and the blind zones that come with them. We understand that the mix of oversized equipment, service trucks, environmental conditions, and people on a construction site can create dangerous conditions, which is why our systems actively warn of potential collisions with both moving and stationary objects.

To receive a specialized quote, talk to a PRECO Safety Specialist today.

Call us toll free: 866.977.7326 | Email us: info@PRECO.com | Visit us online: www.PRECO.com

Sources
Esref Emrah Kazan, Wayne State University
Federal Motor Carrier Safety Administration
National Center for Biotechnology Information
New York Department of Health
Solid Waste Association of North America
United States Bureau of Labor Statistics
United State Department of Labor
Washington Refuse and Recycling Association
PRECO believes that those responsible for heavy equipment operations have a desire to keep the people and property free and safe from harm. We design, engineer, and manufacture collision mitigation technology optimized for heavy equipment. Our safety products have survived the industry’s most rigorous testing for unstoppable performance in the harshest working conditions imaginable, so that operators can perform with greater confidence and peace of mind.

PRECO. Heavy-Duty Safety Solutions Worldwide.

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