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## SAFETY: TAKING STEPS TO PROTECT YOUR MOST IMPORTANT ASSETS

Safety Front Page

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Predicting the future is like forecasting the weather. You think you know what's going to happen – then it changes.



Safety precautions encompass all aspects of the workplace, as reflected by the high 33 percent of injuries being caused by muscular imbalances. PHOTO BY DAVE WILLMAN | DREAMSTIME

Within the recycling arena there is a lot of attention paid to the safety and security of employees, usually in terms of accidents or the likelihood of personal injury. So what are the inherent safety risks in the recycling industry and what steps can companies take in injury prevention of employees?

Jeff Wilke, director of safety at Alter Trading, a leader in scrap metal recycling for over 122 years said one of the biggest risks facing today's recycling industry is the mobile equipment including forklifts, loaders, material handlers and commercial trucks, used within the industry.

"Unfortunately every year our industry sees serious injuries and fatalities involving heavy equipment," Wilke said. "Unless you have sat in the seat of the heavy equipment you just can't understand that a 6' tall person can hide in many different spots all around this equipment. Most people don't understand the potential deadly hazards of this equipment and walk up to material handlers, loaders and forklifts and will walk behind trucks every day. They expect the operator to see them. We train our employees to always make sure they are seen by the equipment operator anytime they are close to the equipment, or better yet if they can contact them via radio do that

and then confirm they will be entering the area.”Alter Trading uses blue lights on equipment that operate indoors, as these lights will shine in front and back of the equipment and give an early warning that equipment is approaching. Some equipment also has cameras as an added safety feature.

“But none of this technology will eliminate the risk and workers and operators must be alert and actively look out for pedestrians in the area,” Wilke said.

Another key safety risk facing the recycling industry is contamination, from collection to processing to end market. As Veronica Roof, senior compliance specialist, Burns & McDonnell explained, in conducting recycling audits across the country, they have encountered hazardous waste, such as needles, and combustibles, such as batteries and propane tanks, in the recycling stream.

“With single stream recycling collection, most items are collected in carts, but when nonrecyclable items make it into the collection carts, the safety risk increases and can pose significant injury to workers, equipment and the environment,” said Bob Craggs, environmental services business development manager, Burns & McDonnell. “Fires are also a safety challenge in recycling centers and transfer stations nationwide. Vendors are now offering new technologies with artificial intelligence (AI) programs specializing in fire prevention.”

Tracy Rodriguez, injury prevention specialist at Injure Proof said soft tissue injuries are also one of the leading causes of injury. When workers are doing repetitive movements – including sitting in and driving trucks – they form muscular imbalances that cause soft tissue injuries.

“These cause 33 percent of injuries in the workplace, making them the most common cause,” Rodriguez said.

Kris Corbett, director at Atlas Injury Prevention Solutions said that employees within the recycling industry are also prone to excessive high-speed repetition motions, long static postures with lower body, and excessive awkward positions when sorting recycled product. Therefore workers whose jobs lie within sorting and manually touching items are at higher risk of injuries.

“Musculoskeletal Disorder (MSD) injuries are expensive and according to the CDC accounted for 29 to 35 percent of all occupational injuries and illnesses involving days away from work,” Corbett said. “With direct costs approximated at \$20 billion dollars annually these injuries are crippling workers and many are preventable. Injuries to backs, shoulders, wrists, knees – anywhere there is a joint is a potential problem spot that can disable an employee for days or a lifetime.”

### **Best Safety Practices**

To head off the inherent risk facing recycling industry workers, there are some key safety practices that need to be established. One key safety practice is visibility. Wilke recommended

that employees wear high visibility/reflective clothing and never approach mobile equipment unless they make eye contact and communicate their travel path to the equipment operator.

Training also is imperative. Operators must be trained of the hazards of the environment, workers and visitors at the yard.

“Many visitors have no understanding of what is happening or the hazards in the operations,” Wilke said. “Train all workers of the blind spots of equipment. We often will put employees that have never sat in the seat of heavy equipment in the seat and then hide several workers in blind spots and ask them to find the employees. This is eye opening for new employees and it helps them understand why our safety rules are so important.”

To prevent the soft tissue injuries that Rodriguez stresses as an issue, companies should focus on soft tissue injury prevention services, which are the most effective way to combat these injuries. As Rodriguez explained, these services can include ergonomic assessments, group stretching and strengthening programs, having an athletic trainer address pain issues and train employees on proper positioning and form, and any combination of the three.

“All told, the industry is increasingly turning to automation and AI to help mitigate safety challenges,” Roof said. “With automated collection, recyclables are mechanically lifted into the collection vehicle, greatly reducing the risk of injury, such as back strain or hand puncture, to workers.”

For processing, the sequence for removal of contaminants and recyclables from the stream is key to offsetting the safety risks. As Roof explained, robots are performing the sorting of materials function to reduce the amount of manual labor needed for the recycling process.

“A ‘best practice’ is to identify materials that threaten sorting workers as early as possible in the recycling process,” Roof said. “By spreading materials out as they are being loaded onto the recycling process line, this allows equipment and workers to remove bulky and other items that pose safety risks before they reach the workers on the sorting line.” This proactive surveillance minimizes safety risks and increases the quality of recyclables recovered. It’s also critical to check that all workers are wearing the proper personal protective equipment (PPE).

Recycling facilities also struggle with plastic bags because they tend to get tangled in equipment, stalling the entire recycling process. “Robots are being designed to pull plastic bags,” Craggs said. “Optical sorters are another helpful AI tool that can determine plastic color and sort plastics accordingly, as well as delineate between 2D and 3D objects. As our industry continues to evolve, AI will increasingly be integrated into daily operations of recycling facilities to bolster efficiency and safety.”

From a physical stress standpoint, Corbett said the best safety practices should include early intervention, ergonomic training, wellness coaching, and stretching.

“Typically, it’s the broad approach of integrated services that gives the best results,” Corbett said. “Utilizing one or two solutions might not get to the root problem or advancements in one area might be diminished by a regression in another. If you really understand the body mechanics of each individual job, placing current employees, new hires, return to work, and limited duty workers will be easier, better, and lessen the risks of injuries.”

## **Future Advancements**

The statistics don’t lie – solid waste and recycling is one of the world’s most dangerous industries in the U.S. Craggs said by reducing the need for manual labor and utilizing evolving technology, we can reduce collection and processing accidents. So what future advancements will continue to help solve the safety issues within the recycling industry?

“Safety training, awareness and education of the hazards and safe work practices will be an ongoing part of ensuring everyone is safe around heavy equipment,” Wilke said. “I look at seatbelts, the first production installed seatbelt was by Ford in 1956, it was a lap belt and the emphasis was on front seat passengers to wear them.”

Now over 60 years later we have three-point seatbelts, mandatory seatbelt laws and airbags.

“This technology has reduced fatality and injuries but the common factor here is people. People must wear seatbelts and follow the basic safety rules and we must continue to educate train and write laws to make people safer,” Wilke said. “The same goes for working around heavy equipment. All the technology in the world won’t eliminate injuries or fatalities because people are a huge part of the process.”

Prevention of soft tissue injuries also is starting to take hold. Safety managers are realizing that prevention is much more effective for their bottom line than paying for multiple injuries. “I think that in the future, we will see a big increase in these types of services and a decrease in the amount of injuries workers are experiencing,” Rodriguez says.

Roof said the future of safety in the industry would need to be a collaboration with the recycling industry, trade associations like the Solid Waste Association of North America and the public. “We will need to invest in education and outreach to inform all about the safety risks faced by the recycling industry,” Roof said. “And what each of us can do to reduce such risks.”

As Corbett pointed out, employment in the recycling industry is at an all-time high and competition for workers is stiff. Promoting a healthy and productive workforce is critical to keeping injury related costs low.

“Many safety measures are minimal in cost and high in return and keeping a potential injury off the books when a quick tip and a new \$20 riser solved the issue is important. A \$100,000 potential injury, plus a recordable claim, verses a few hundred dollars in preventative measures is a huge win for human resources, safety and the worker,” Corbett said. “As the workforce sees

more aging employees' new strategies will have to be utilized to reach them. Setting up safety protocols and wellness checks to keep tabs on this demographic will be important to keeping them healthy and working."

Published in the March 2020 Edition



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