

Positive Steps for Less Occupational Injuries

The National Institute for Occupational Safety and Health (NIOSH), reporting on 2019 nonfatal work injuries resulting in days away from work, said that 27% of the 888,220 nonfatal injuries, 27% were related to slips, trips, and falls. Of course, you can slice this kind of data twelve different ways – are we talking absolute number of cases regardless of severity, number of lost days of work, total time for recovery, medical costs, or other parameters? Regardless, in the world of public works we consistently see the top categories as slip/trip/fall, strain/injury, struck by, cut/puncture/scrape, and runaway/backover.

The good news is that injuries from all of these categories can be dramatically reduced by local agencies that think and talk about safety on a regular basis and take decisive actions. Examples of the “walk the walk” safety culture include:

- Reporting of all occupational injuries, regardless of how small
- An annual review of injuries, causes, and follow ups
- Thoughtful assessment of personal protective equipment needed for each employee, standard operating procedures that make it clear when they are required versus suggested, and regular inspection/replacement of degraded PPE
- Established procedures to ensure employees work as teams when the tasks have increased risk for personal injury
- Equipment purchases with the safety of employees in mind
- Regular safety briefings, including tailgate safety talks
- A deliberate focus on approaching work tasks in a manner that minimizes the risk of injury in the first place
- Regular safety training that ensures employees know how to use equipment properly and with the lowest risk to them and others around them

Even small changes in our approach to work tasks can significantly reduce the likelihood of injury, particularly if the changes are targeted at those injury scenarios most likely to occur otherwise or at those injuries that can be most severe and most difficult to fully recover from. One of the most basic mitigative measures is good housekeeping in the shop and around the maintenance yard. Tools, materials, and equipment should have their designated place. Trip hazards like electrical cords, hand tools, and scrap materials should be quickly removed from floor areas after the operation that involved them. Better yet, make small shop changes like ceiling mounted retractable cords to ensure they are always handy and there is no excuse for not putting them away. Supervisors should make a regular practice of inspecting maintenance yards and shops specifically looking for slip, trip, and fall hazards.



At the most recent Roadway Management Conference (RMC), we had the opportunity to see an example that many agencies have adopted in one form or another over the past several years. The Delaware Department of Transportation

(DeIDOT) has constructed multiple cone deployment trailers and demonstrated the deployment and recovery of a temporary work zone for the RMC attendees while we captured it on [film](#).

After watching that short demonstration, think of the temporary traffic control deployment and removal risks that are either eliminated or significantly reduced. The most obvious feature is that the employee is protected inside an operator's station, rather than being on foot alongside the cone transport vehicle or dangling off the end of a tailgate. As a result, there is almost no opportunity to be struck by another vehicle and the employee cannot otherwise slip, trip, fall, or be run over,



so the most common injury scenarios are basically off the table. It doesn't end there, however. A cone deployment trailer can be designed any number of ways, but with a little thought, the opportunity to strain muscles, joints, or ligaments is also reduced. Finally, the temporary traffic control can often be placed and removed quicker than conventional and more risky approaches; less exposure time translates directly to a safer operation. Oh, DeIDOT wasn't the first to take this approach – see a similar [technique](#) by the Arizona DOT – but DeIDOT's trailers were home-grown (designed and built in-house) and help reinforce the agency's culture of safety.

Equipment commonly used in public works is increasingly designed with worker safety in mind. Nonetheless, when choosing what type of equipment to purchase and then which brand or model, deliberately looking at safety features should be a primary focus in the decision process. We like to say you can't put a price on safety or similar fare, but that's not really true. The government and the courts put a price on human life and injuries all the time. But if we are going to run around saying such things, we should at least honor the intent of saying it. If we are going to imply that employee safety is of paramount concern, it should be a primary consideration when selecting equipment. Is one piece of equipment louder than another? Does one have more sophisticated blade guards? Does a chainsaw have anti-kickback features? Are there electrical sensors that protect an employee from electrical shock or moving parts when outside the operator's station? Does the ladder we choose have adequate weight limits for the employees we have and are likely to have? Are the fall restraint devices and slings intended for the uses we have in mind?

We had opportunity to see the result of such a thoughtful equipment purchase recently when the City of Lewes upgraded their leaf vacuum [trailer](#). After considering several brands and model options, the model they chose had an on-board operator's station that, like DeIDOT's cone deployment trailer, all but eliminates the likelihood for the operator to be struck by another vehicle. In addition, the operator is able to precisely control the boom with joystick electronics, eliminating the stress and strain potential of the conventional manual approach. Finally, the City elected to add radio headsets that allow communications between the truck driver, the boom operator, and when in effect, ground



personnel who are raking leaves to the curb or engaged in other activities. With the headsets, the driver can coach the boom operator on upcoming leaf gatherings (piled, scattered, etc.) and misunderstood hand gestures are a thing of the past. Gone too is the necessity for guesswork as to the whereabouts of any ground personnel who may be raking or blowing leaves to the boom operator, reducing the likelihood of a runover/backover injury.

Equipment purchases and procedures are an important step in an agency's safety culture, but the simplest element is too often overlooked. Regular safety briefings targeted to upcoming or ongoing activities remind everyone on the crew about dangers and how to mitigate against them. Tailgate safety talks should be a regular part of the program and we can point you to materials that make them easy to implement. One such tailgate talk that is a bit more engaging is centered on equipment visibility issues and we were able to [demonstrate](#) it at this year's RMC.

There are many moving parts to an effective safety program that minimizes occupational injury. The Delaware T2/LTAP Center's Municipal Engineering Circuit Rider is intended to provide technical assistance and training to local agencies and so if we can help with your safety program or other transportation issues, contact Matt Carter at matheu@udel.edu or (302) 831-7236.