Mobile Equipment – No Room for Error

According to MIOSHA, the fourth and fifth deaths early in 2019 involved contact with moving equipment or vehicles (Michigan Worker Death Notification). In one accident, a truck operator was crushed by his own vehicle at a landfill that occurred after mechanical problems. The truck operator's vehicle experienced problems and was being moved by an operator of heavy equipment. At some point, the truck operator exited his vehicle to access the truck and the operator of the heavy equipment, who did not know, continued to move the vehicle, subsequently crushing the driver under his truck. The other case involved two car wash workers who were struck by a customer vehicle leaving the car wash.

Many businesses and most contractors use mobile equipment every day, ranging widely in variety from wheeled vehicles, to large tracked equipment, down to bobcats. It's rare for a jobsite to ***not have*** exposures from mobile equipment of some type including excavators, sky tracks, bobcats, or even pickups or delivery trucks. It's also rare for commercial businesses to not have trucks that use shipping areas or forklifts in the building. Regardless of equipment size and speed, most accidents involving trucks or mobile equipment and workers on foot result in serious injuries or death.

Mobile equipment risks include striking or crushing a person on foot, striking another object in the area, tipping over on rough terrain, or contacting power lines. Risks can involve employees or third parties like other contractors or the general public. Remember, equipment operations always present the potential for a major accident and loss and can't be taken for granted.

Workers on foot in work zones often find themselves in close proximity to construction vehicles and equipment in limited areas, which makes them susceptible to being struck by or caught between vehicles and construction equipment. Depending on the location of the cab and driver position, workers often cannot be seen by the equipment operator or vehicle driver. Construction equipment operators also risk injury or death from hazards associated with overturning, collision with other equipment or objects, being caught in running equipment, or contacting power lines.

Mobile equipment accidents basically involve two or more objects that attempt to occupy the same space at the same time. The major conflicts that take place within any work zone often include:

- Trucks or equipment versus workers on foot
- Trucks and trucks, or trucks and equipment
- Equipment and equipment
- Trucks or equipment and adjacent objects (power lines, trenches, traffic)

Controlling mobile equipment risks starts before the job by planning layout of how equipment and trucks will arrive, where it will be parked, and worker access to the work zones. Careful planning can eliminate, or at least reduce conflict points. Items to consider include:

- Layout driveways and routes to reduce conflict points between workers and equipment. Try to eliminate blind corners or intersections, or at least reduce risk using warning signs and mirrors
- Provide adequate space for equipment to move in relation to workers. This is difficult on tight jobsites, which makes daily planning even more important
- Stage and place material to minimize conflict points with higher worker foot traffic or pedestrian traffic. This increases efficiency and reduce conflicts.
- Use barricades to separate on workers, third parties, or other objects from equipment.
- Identify all power lines put signs on the ground for trucks going under lines and use warning signs for blind corners or intersections. Even a warning sign with the clearance distance or height will warn truck and equipment operators of overhead hazards.

Plan to provide the right size equipment and equipment that is needed for the task. Wrong equipment can make a space too tight or encourage an operator to use a piece equipment incorrectly instead of waiting until the proper equipment can be delivered. It's easy to say that an operator made an error or used equipment improperly. Remember, the unsafe act might very well stem from a management decision or lack of planning that results in the wrong equipment being on site which contributed to the operator's decision.

In tight situations, operators may also need spotters or the situation may require barricades or warning signs to help keep other people away from the work zone. Don't forget that personnel directing construction traffic, like flaggers, are also vulnerable and must be trained, properly placed, and wear proper protective equipment.

Of course, operators must be trained, which includes safe work practices when operating around other people or objects that can be struck. Depending on the cab and operator position, the operators may not be able see all sides, not to mention that they are focusing on the working end of the machine. Don't forget training for all other workers on the site as many mobile equipment accidents are caused when people try to squeeze between or behind a vehicle or equipment.

Finally, change is one factor that is common with every work zone, regardless of whether it's outside or inside. Review plans daily, or more often during heavy equipment use periods, and for every phase of the project. Increase training during heavy use periods or when approaching a phase with more risk, even with shorter meetings to keep people aware of changes and their role when working around equipment.