

Question of the month: *There seem to be a number of online safety training programs on the internet these days. Are they effective for construction training?*

Personally, I don't see how scaffolding safety training, fall protection, cranes and rigging, etc., can be done effectively without hands on exposure to the hardware and a good old fashioned knuckle whacking instructor to keep 'em awake. Read on and see what you think.

An alarming statistic- Between 1997 and 2002, the number of work zone fatalities in the United States increased 75%. By comparison, the total number of roadway fatalities (including work zone and non-work zone fatalities) rose by only 2.1%. Read the following to see what you can do to keep your flagger from being his own trucks victim

Does the trainer have to be there?

More companies are using computer-based training, on-line courses, and self-paced study programs to train their employees. Often the trainer is not present when the employee is working through one of these programs, which brings up the question of whether or not OSHA expects the trainer to physically be present during training, or merely "available" to the trainee.

OSHA addresses this topic in several letters of interpretation. The gist of these interpretations are that in general, OSHA encourages the use of live, "hands-on" training even in refresher courses because it is an effective means for auditing worker performance of safety-related skills.

Hands-on training involving trainee interaction with equipment and tools in the presence of qualified trainers allows the trainer to assess whether workers have mastered the proper techniques.

For some standards, HAZWOPER for instance, the employer may determine that hands-on training is unnecessary for a given refresher course. To make this determination the employer must assess the employees' skill level and ensure that the employees remain competent in their assigned duties.

However, OSHA points out that the employer is ultimately responsible for ensuring that employees acquire the training and skills they need to perform their work safely and for providing access to a qualified trainer. Trainees must have an opportunity to ask and receive answers to questions where material is unfamiliar to them. Frequently, a trainee may be unable to go further with the training or to understand related training content until a response is received.

OSHA has previously stated that, when web-based or computer-based training is used, a telephone hotline or e-mail satisfies OSHA's requirement for trainer access if the employee can ask and receive a responses from a qualified trainer in a timely manner. If an employer uses an outside computer-based or web-based training program that provides trainer access during limited periods, the employer could address the limitations on trainer access in several ways. One possibility would be to limit employee training to the hours when a qualified trainer is available. A second possibility would be to provide an in-house qualified trainer to answer questions during hours not covered by the outside training provider. A third possibility would be to ensure that the training program is designed so that trainees cannot progress further in the program if they cannot indicate mastery of topics upon which additional training is based. This last option cannot replace but can supplement access to a qualified trainer.

So, does a trainer always have to be present? No, but a trainer must be “available” to the trainees so that the trainees can ask questions and so that performance of “hands-on” exercises is provided.

Work Zone Fatalities and Roadway Safety

Over the last decade, work zone fatalities have increased dramatically.

Between 1997 and 2002, the number of work zone fatalities in the United States increased 75%. By comparison, the total number of roadway fatalities (including work zone and non-work zone fatalities) rose by only 2.1%.

Clearly, work zone fatalities represent a dramatically increasing segment of total roadway fatalities. Moreover, of workers killed in work zone incidents, 42% are construction laborers; the next largest category is truck drivers at 9%.

Almost all of the workers were repairing roads (41%), flagging (27%) or moving traffic control devices (24%).

Significantly, 59% of the deaths occurred inside the work zone; the rest, though work zone-related, occurred outside the actual work zone.

Among the workers killed inside the work zone, 32% were vehicle or equipment occupants, and 68% were killed on foot. Among those killed on foot, half were struck by a construction vehicle, and half were struck by a traffic vehicle that entered the work zone. Further, among those killed by a construction vehicle, 51 % were struck by backing vehicles.

Outside the work zone, 57% were struck by a vehicle, and 43% were killed by other means (overhead power lines, falls from machinery or structures, gas line explosions or struck by falling objects or materials). The data do not indicate whether the vehicles that killed workers outside work zones were construction or traffic vehicles. Most likely, the vast majority were traffic vehicles.

Analysis/Action

Contractors who wish to reduce fatalities and lost work time injuries in and around roadway work zones should focus on three areas:

- Maintaining separation between traffic flow and work zone activity
- Controlling the movement of construction vehicles and equipment within work zones
- Improving safety unrelated to vehicle or equipment impacts

Most worker fatalities occur inside the work zone. About a third of the victims are the occupants of construction vehicles or equipment, and another third are pedestrian workers killed by impact with construction vehicles or equipment. Less than a third are the result of intruding traffic.

Worker fatalities inside work zones	100.0%
Occupants of vehicles or equipment	32%
Operators	25%
Passengers	7%
On foot struck-bys	68%
By construction vehicles or equipment	50%
While backing	51%

By intruding traffic	50%
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An astonishing 16% are killed by backing equipment. The most common culprit is a dump truck. Construction vehicles strike workers primarily because of poor sight lines and blind spots. These hazards are aggravated when backing or when moving in an area where space is limited and the turning radius is tight.

Most construction vehicles have warning devices, such as back-up alarms, but, frequently, these are inadequate. In 28% of OSHA-investigated fatalities, the back-up alarms were found to be inoperable, meaning that in 72% the alarms functioned properly. Indeed, in 12% of the fatalities the victim was the vehicle operator's spotter. Apparently, in a work zone with several vehicles operating and traffic flowing nearby, the elevated background noise desensitizes workers and renders them unable to quickly distinguish a vehicle back-up alarm from surrounding noise.

An obvious remedy, an internal traffic control plan (ITCP), would organize internal work zone construction traffic to minimize or eliminate the need to back vehicles and to keep pedestrian workers separate from the internal movements of traffic.

What should an ITCP include?

- Employee hazard awareness training program
- Provisions to reduce the need to back up.
- Limited access points to work zones.
- Work zone layouts commensurate with equipment in use.
- Signage to guide pedestrian workers and construction vehicles within the work zone.
- Buffer spaces to protect pedestrian workers from errant vehicles and work zone equipment.

Currently, the Federal Highway Administration requires a traffic control plan to safely guide motorist traffic through a work zone using temporary traffic control devices, but no ITCP is required for construction workers. Few, if any, state transportation agencies require ITCPs.

However, if ITCPs were required, the playing field would be leveled for contractors that wish to pursue better safety planning and implementation. Without such a requirement, contractors willing to skimp on health and safety have an inappropriate competitive advantage in the bidding process.

What can Contractors do today?

- Implement (better) internal traffic control plans
- Improve training of roadway workers
- Provide better separation between work zones and outside traffic flow
- Improve safety technology for trucks (even RVs have back-up video cameras!)
- Use new technology for remote-controlled flagger operations

We have just completed a major Roadway Construction Safety training program for construction workers and supervisors in English and Spanish. Info@qrmonline.com or 619 523-4859 for details.