

## **Fall Protection Training: Get What You Need**

**Meg Phillips, P.E.  
Manager  
LJB Inc.  
Cincinnati, Ohio**

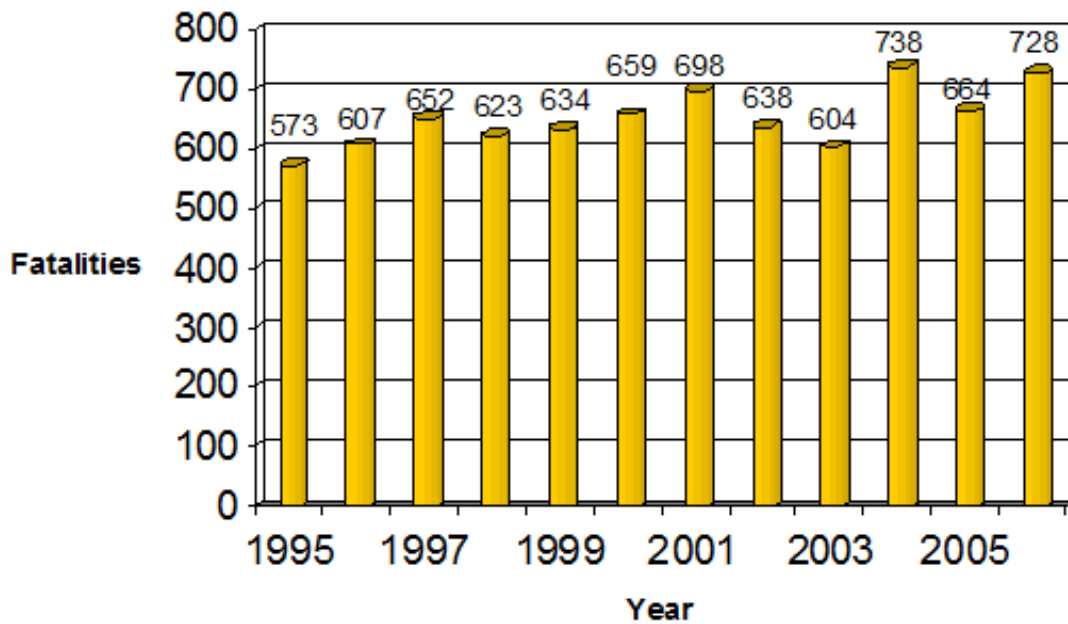
### **Introduction**

Many fall protection training programs offered today are highly focused on regulatory requirements or exclusively on equipment. But, the most effective training covers these topics and much more. This paper will compare OSHA regulations and ANSI standards, including the new ANSI Z359.2 standard as it pertains to fall protection training. Using lessons learned from an aircraft engine manufacturing site, this paper provides an understanding of the content of training needed to maintain safety and foster continuous improvement for your fall hazard program.

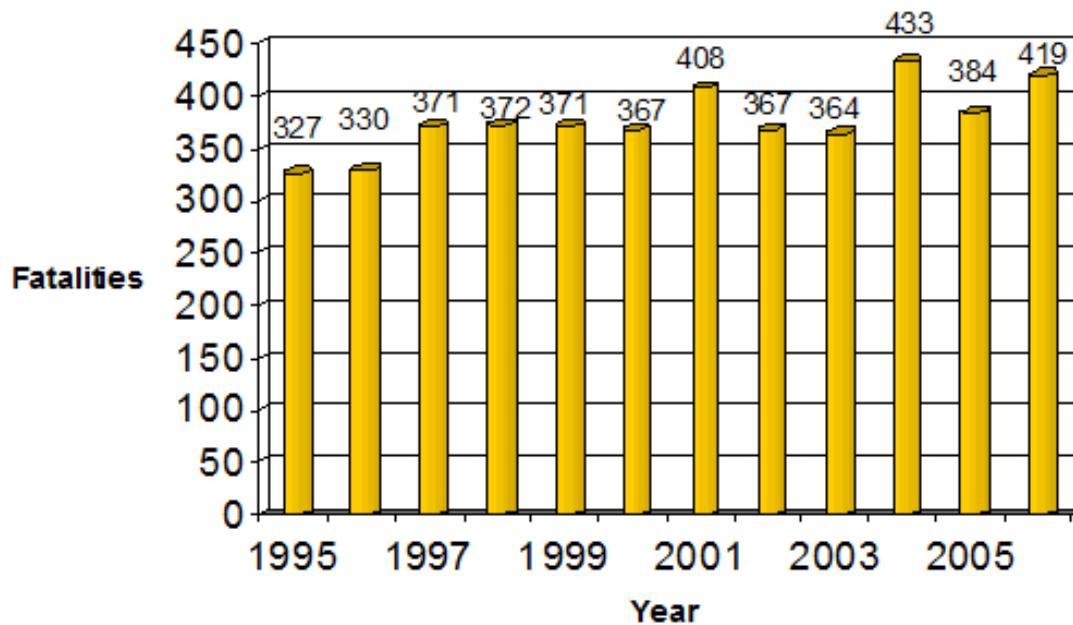
What can happen when there is inadequate fall protection training? A pipe fitter, who was involved with the construction of an electric power plant building, observed a fall fatality. The workers at the time just had a skeleton and framework for a large unit that houses coils, but were tied off with a twin leg lanyard. While the pipe fitter was 20 feet away, one worker unhooked from one anchor to connect to another anchor and lost his footing and fell 60 feet and died. If he had been continuously connected, a fall would likely have been prevented. Training on this work was very limited. The basic statement was that fall protection should be used where there was a hazard more than 6' above a lower surface. It is unknown if the training was reassessed after this accident. In this example, the misuse of the fall protection equipment could have been prevented with proper training.

One company that has implemented an effective training program is an aircraft engine manufacturing facility. This facility employs approximately 7,500 people and sits on a 400-acre site with approximately 100-acres under roof. They decided to focus on improving their fall protection program in fall 2005. A skilled trades employee serves as the facilitator for the program. Their initial objective was to raise the awareness level and knowledge of fall hazards for the facility. When choosing to focus on this program, they created a fall hazard prevention committee in November 2005 which led the training efforts, hazard identification surveys, roof access procedure implementation, ladder survey and various abatements. Their first training was conducted in February 2006 with 30 people completing an OSHA 40 hour competent person course and a second training was conducted in May 2007. A total of 45 employees have been trained to competent person level with a competent person available to employees on each shift.

In the construction industry, the number of fall fatalities continues to rise relative to 1995. In 1994, OSHA Subpart M, THE fall protection regulation, was issued but falls are still rising as seen in Exhibit 1 and 2, quoted from the Bureau of Labor Statistics Census of Fatal Occupational Injuries. Falls impact the quality of life for the worker and the bottom line for the company. Common fatal misconceptions about fall protection are that with these precautions in place, it is harder to work, it slows down work activity, it's too difficult to implement and that a company really doesn't need it. Regulations aren't enough because after 70+ years of standards, rules and regulations workers are still falling to their death. In 2006, 728 deaths were related to falls. In 2003, 91,530 injuries were reported with lost time from work.



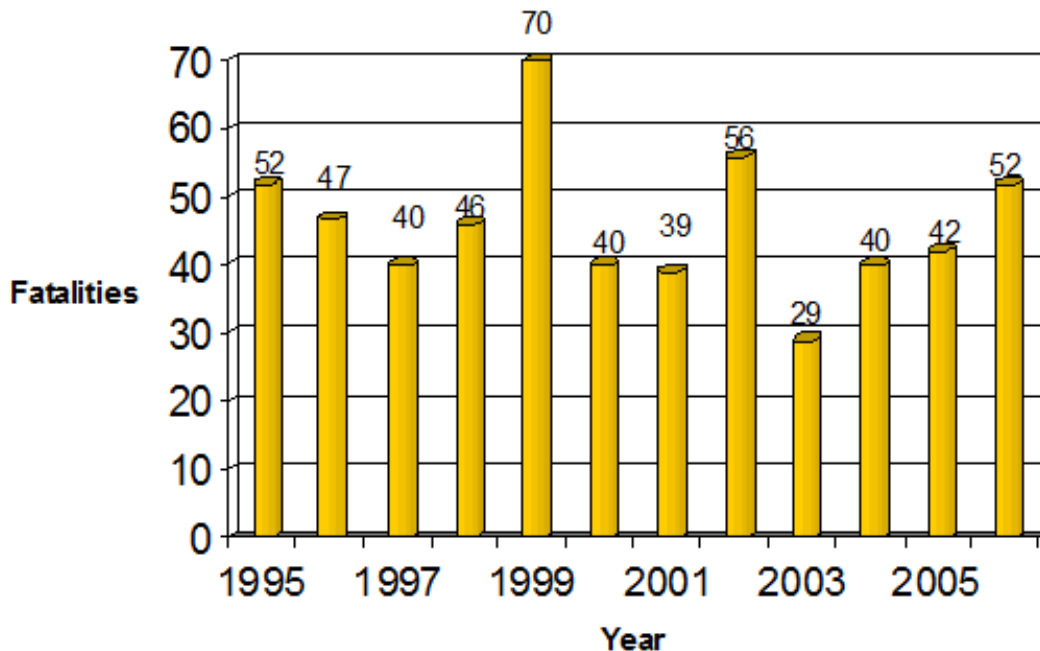
**Exhibit 1. These are the numbers of total fall fatalities to a lower level.**



**Exhibit 2. These are the number of construction fall fatalities to a lower level.**

OSHA's Fall Protection – Training Requirements regulation, 1926.503, accounted for 1,904 violations in the construction industry in FY 2007. Training is a big focus for the agency because this regulation rated as the fourth most frequently cited violation. Essentially, OSHA wants to be assured that employers have a training program in place for each employee who might be exposed to fall hazards. The program must ensure that the employee is able to recognize the hazards of falling and then understand what he or she can do to minimize them ("Falls From" 58).

In Exhibit 3, quoted from the Bureau of Labor Statistics Census of Fatal Occupational Injuries, there is a fifty percent increase in falls from 1998 to 1999 at manufacturing facilities. Why might this have occurred? The economy was growing at a rapid pace so there were many new people in the workplace. One possible reason may be the increase of new or temporary workers who were unfamiliar with fall hazards in manufacturing settings and likely had not received any proper fall protection training.



**Exhibit 3. These are the number of manufacturing fall fatalities to a lower level.**

Even with a regulatory emphasis on fall protection, fall fatalities have not declined. There may be numerous reasons, however, the author's experience has pointed to a lack of training and an over reliance on personal protective equipment (PPE) being implemented too often as a solution.

## Regulations and Standards

OSHA and ANSI recognize that there are three different levels of training – qualified person, competent person and authorized person or at-risk worker. Each level of training is vital to the overall goal of integrating and implementing fall protection on site every day.

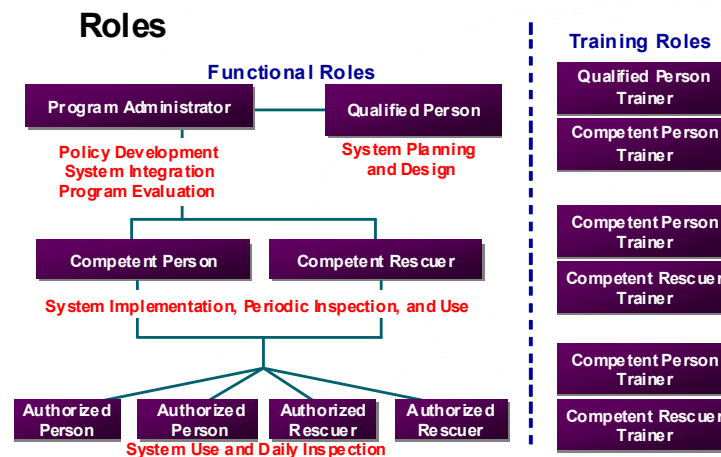
A qualified person has a recognized degree or professional certificate and has extensive knowledge and experience in the subject field. He should be capable of design, analysis, evaluation and specifications in the subject work while also being able to integrate safety and engineering using OSHA regulations and ANSI standards. Further, he should know how to use the safety equipment and its limitations and how to select the right equipment for the job with the environmental conditions occurring at time of use.

A competent person should be able to identify existing, foreseeable and predictable hazards, as well as have the authority to take prompt corrective measures to eliminate such hazards. He needs to have a broad understanding of safety and must be able to relay that information to employees to prevent injuries and fatalities. A competent person's responsibilities include supervising work at heights and verifying adequate rescue is in place. They inspect equipment, train authorized

persons, know the limitations of the people performing the work and understand the hierarchy of control. The employer should be selective in who they designate as competent persons.

An authorized person, a term defined in the ANSI Z359-2007 standard, is someone working at heights above 4 feet or any distance where the likelihood of a serious injury or fatality exists. Although not defined in OSHA, the regulations do provide topics that must be covered during the employees training. However, most of the in-depth requirements in these topics focus on the use of PPE in the non-mandatory appendix.

Within the new ANSI Z359 standard, a significant change is to the roles within an effective training program. Exhibit 4 shows these new roles in an organization chart format. One can divide these roles into either a functional role as seen on the left side of the chart or a training role as seen on the right side of the chart. One of the biggest additions to the roles is the training roles. Previously there had been no established training roles. Now, the training roles include: qualified person trainer, competent person trainer and competent rescuer trainer. These training roles, as well as the functional roles, can be filled by the same person in many cases. However, these roles are site specific. For example, one could be a competent rescuer trainer (CRT) at an industrial site but at a utility plant where hi-angle rope rescue is needed, the individual would likely not be able to be a CRT because of the specific skills and experience needed for hi-angle rope rescue training.



**Exhibit 4. This is the ANSI Z359-2007 Fall Protection Program Roles Organization Chart.**

While each of the roles mentioned above are important to a fall protection program, this paper focuses on the competent person training. Keep in mind that the effective training programs are needed for all of these roles. Prior to the release of the ANSI Z359-2007 standards, employers were left with little to discern what they needed from competent person training. Even the original ANSI Z359-1992 did not have a competent person defined and the term was only mentioned twice in the standard. On the other hand, OSHA regulations are often performance based and as stated in the proposed 29 CFR 1910.128(b), “Competent person means a person who is capable of identifying hazardous or dangerous conditions in any personal fall arrest system or any component thereof, as well as in their application and use with related equipment.”

Additionally, through other requirements found in OSHA and through equipment manufacturer's requirements, employers are required to have a competent person perform certain work tasks, as stated in the previous section. One of these tasks is to supervise work at heights when personal protective equipment (PPE) is used. In a Region 4 OSHA news release, the Mobile, Alabama area office stated that they were going to put a special focus on fall hazard programs. This special emphasis focused "resources on fall hazards in roofing and scaffolding [and] considerable time and effort ensuring that the competent person at these sites has been trained and is prepared to ensure that workers are properly protected from falls" ("OSHA Puts"1). So, as you can see, OSHA takes very seriously the responsibilities of a competent person.

Fortunately, the recently released ANSI Z359-2007 standard provides a significant amount of information on the training of competent person, as well as, the other roles mentioned previously. But the question still remains, how do you know what you need to get. Our recommendation is to start with the responsibilities mentioned in section 3 of the ANSI Z359.2 standard. This is a great starting point and employers can realize that, to a certain degree, they can pick and choose what responsibilities they want their employees to have. For example, one responsibility for competent persons is to be able to identify non-certified anchorages. Employees may be hesitant to do this without the guidance of a qualified person. On the other hand, an employer may choose not to assign this responsibility to competent person due to the building code requirements. If the competent person is not a professional engineer and identifies a member from the building structure as a non-certified anchorage, this could be a violation of the state building code. This is why it is important to carefully examine all of the responsibilities and how they apply to your industry, building types and employee backgrounds.

Another example of this was an employer who chose to not have their competent persons trained to develop and prepare fall protection procedures. The employer saw this as the role of the qualified person designing the system and they simply needed their competent persons to be able to understand them. This did two things: it made the job of their competent persons easier and it allowed them to shorten the training course – a saving of the time investment.

## **Training**

As seen in the previous sections, OSHA and ANSI view training people to a competent person level as an important aspect of a fall protection program. Competent persons have several responsibilities and they need to be properly trained to be able to identify hazards and take corrective measures to eliminate hazards. Through comprehensive training, they learn what hazards to look for, how to properly inspect equipment, how to address rescue when using PPE and how to use the hierarchy of control when abating hazards.

Who should attend competent person fall protection training? Management down to skilled trades people need to attend, if they are to be supervising others. At the skilled trades level, workers should have an awareness of the hazards they may encounter while performing their work assignments. They are also the first line of communication when conveying the requirements of using fall protection or discussing the benefits of eliminating hazards. At the supervisor and management level, employees need to be trained on awareness of hazards and not putting their workers in a dangerous situation. Also, from a planning point of view, upper level management needs to be aware of how much time it takes to perform a task if there is a hazard. From a

regulatory point of view, management owns the fall protection program and thus, needs to be able to enforce the use of fall protection. By going through training and showing support for the program, they set a good example.

The responsibilities from the ANSI Z359.2 standard can be summarized by the following points:

- Background on fall protection including regulations, standards and the employer's program
- Hazard recognition or identification
- Proper use of engineering controls
- Background on available equipment
- Use and limitations of equipment
- Fall protection procedures

While there may be multiple modules of the training within each of these bullet points, the basic outline can be used as a starting point for any fall protection training program. Whether it is for an authorized person at a petroleum terminal where engineering controls are the rule rather than the exception, a competent person at an aircraft engine manufacturer when someone may be exposed to a hazard during any shift or a qualified person designing a horizontal lifeline system to protect a worker at the edge of a 10 story building, all modules can fit into this basic outline. Fall protection training is effective due to the different topics that are addressed, repetition across modules, sessions that are modified per audience and the wide variety of media to deliver, such as lecture, discussion, video, individual exercises, hands-on, small group exercises and photo examples.

While you determine who will be trained, you also have to consider what content should be included in the training. There are several factors to consider after you determine what responsibilities you want the employee to have following training which are:

- type and variety of hazards in the employee's workplace,
- what types of PPE systems will be used,
- more importantly, whether or not PPE will be used to abate hazards,
- If PPE is used, the variety of PPE that will be available to the employees

There are at least four different sources of fall protection training – equipment manufacturers, OSHA, national, regional and local conferences and fall protection consultants. There is good value in equipment manufacturer's training because they know their equipment better than anyone. OSHA training is based on the regulations and is consistent throughout the country and available for a number of sources. Conferences are a way to gain information and knowledge on fall protection, but the speaker must be credible and selected because of their qualifications. Consultants can bring a depth of knowledge from seeing a variety of situations and solutions in the field, but qualifications are not always consistent. This last area is where the authors see the largest variation in content. Furthermore, when evaluating who does your training, ask for their qualifications within various industry segments, not just your own facilities. Their experience at facilities other than your own can be valuable. There are at least five common industry segments that should be considered when developing fall protection training: manufacturing, institutional, elevators, construction and utilities. Although each can have a significant variety within the

segment, the utility industry probably has the most variety, primarily due to the size and configuration of the structures that must be considered.

Based on the author's experience, she has found that the comprehensive courses provide the most value for employees and is more effective in getting employees to support the fall protection program because they have a more clear and thorough understanding of all the elements of an effective program. Being made aware of and having a better understanding of regulations and standards, the employees can make a safer work environment. As a result of the training, competent persons are able to identify and either eliminate or abate several fall hazards after the fall protection training. The employees who complete training see the benefit of eliminating hazards or using engineering controls rather than using PPE.

## **Conclusion**

For fall protection training to be effective, it is critical that trainers make this very complex and potentially overwhelming subject understandable and practical for participants. Despite the amount of material, it must be handled in a way that resonates with the audience.

Understanding the value of industry and site specific training and knowing the questions to ask when evaluating different training options is key to getting what you need when it comes to fall protection training.

Falls to a lower level are increasing. With all of the equipment that is available, the reason fatalities are on the rise could be attributed to lack of training or hazards not being identified. Since being able to identify hazards is part of training, one can postulate that the number of falls is not decreasing because training that is currently being used or available should be improved. While this may be controversial, there is over 12 years of data showing that new OSHA regulations and ANSI standards are not helping the trend go in the right direction.

Four things that should be considered when improving or starting a fall protection training program are:

- What are the hazards at the facility
- Who needs training
- What are the expectations for them to implement what they learn
- Who is capable of performing effective training

By having an understanding of the content of training needed to maintain safety and foster continuous improvement for your fall hazard program, effective training can be and should be an achievable goal. It will certainly have an impact on worker safety



## **Bibliography**

“Falls From Elevation Top Construction’s ‘Top 10’ Violations.” *Safety+Health*. Feb. 2008: 58.

“OSHA Puts Focus on Fall Hazard Program.” *U.S. Department of Labor*. May. 2002: 1.