



# OSHA Fatal Facts

An Online Continuing Education Course for Engineers

**Course Number: H-3005**

**Credit: 3 Hours / 3 PDH / 3 CPD**

# OSHA's Fatal Facts: Fatalities Caused by Improper Work Practices

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## 1. Introduction

This course is based on case studies taken from the Occupational Safety and Health Administration's "Fatal Facts" ([http://www.osha.gov/OshDoc/toc\\_FatalFacts.html](http://www.osha.gov/OshDoc/toc_FatalFacts.html))—descriptions of accidents in which one or more workers died because of improper work practices. Reading and thinking about these case studies gives an immediacy and emotional impact—"Do you mean somebody died because of *this*?"—that can't be obtained from an abstract discussion of general principles alone.

The present document first provides background information about the types and frequency of work-related accidents both in general and in the particular case of Fatal Facts accidents. Then some guidelines are given for preventing accidents by following proper work practices. The remainder of the document consists of Fatal Facts accident summaries.

## 2.1 Background on Work-Related Accidents

To appreciate the significance of the Fatal Facts, it is helpful to be familiar with the extent and types of work-related accidents in general. In the United States at the present time, about 4,500\* workers die each year from work-related injuries. In addition to these fatalities, serious injuries (those involving the loss of six or more days of work) represent over \$53 billion a year in employer costs—a large proportion of which is attributable to workers' compensation costs. Some idea of the types of accidents that occur can be gained by examining the list of the top ten most frequently cited OSHA standards violated in FY2010:

- Scaffolding, general requirements, construction
- Fall protection, construction
- Hazard communication standard, general industry
- Ladders, construction
- Respiratory protection, general industry
- Control of hazardous energy (lockout/tagout), general industry
- Electrical, wiring methods, components and equipment, general industry
- Powered industrial trucks, general industry
- Electrical systems design, general requirements, general industry
- Machines, general requirements, general industry

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\*All numbers are taken from "Commonly Used Statistics" on OSHA's website.

The occurrence of three fall-related violations (scaffolding, fall protection, and ladders) is noteworthy.

## 2.2 Construction Accidents

The above discussion concerns accidents in all industries. Focusing attention on the construction industry alone shows that construction accounts for about one-fifth of all fatal accidents, and about 57% of these are attributable to the “Fatal Four”:

- Falls – 35%
- Electrocutions – 10%
- Struck by Object – 8%
- Caught-in/between – 4%

Again, the prevalence of fatalities from falls stands out.

## 3. Types of Fatal Facts Accidents

OSHA began compiling Fatal Facts in 1984. Since that time, many accidents have been added to the list, and by 2011 it had grown to a total of seventy. Many of these accidents are of a similar type—falls comprise almost a third of the total—so to reduce duplication while still providing the reader with a wide spectrum of accident types, in this document the seventy accidents have been whittled down to thirty distributed among the following categories:

- Falls
- Asphyxiation
- Nail gun
- Falling object
- Trenches
- Caught in between
- Electrocution/electrical shock
- Explosion and fire
- Drowning
- Caught in machinery

It is interesting to compare this list with the list, previously given, of the top ten most frequently cited OSHA *standards violated* in FY2010. Although there is some overlap, especially in fall-

related items, the lists are not identical. Some types of accidents are generally more lethal than others, and the list of violations refers to *all* situations—whether an accident has occurred or not—while the first list refers to lethal violations only.

#### **4. Accident Prevention Through Proper Work Practices**

Reading the Fatal Facts accident summaries below is a sobering experience. In most cases, people died not because of some rare, one-in-a-million incident, but because someone made a simple mistake. Yet the mistakes are not isolated, unique events. They share some features in common, and examining these features can lead us to formulate the following general, common-sense principles for accident prevention through proper work practices:

**4.1. Training.** Recognize that training in proper work practices is a necessary and unavoidable cost of doing business. Training consists of two things: 1) learning the use of equipment and procedures that are new to the worker, and 2) learning what particular hazards exist on the current job site. Neither of these things is necessarily expensive or time-consuming, although they may be in some instances. Telling a novice worker about the necessary precautions to take when using a powder-actuated nail gun—that it can shoot nails completely through a hollow wall, for example—would be enough to alert the worker to a potential hazard. Reminding workers that when power lines are present, so is the danger of electrocution. Or that any time flammable fluids are present, explosions are possible. Or if a heavy object is overhead, the worker is always at risk of being crushed. Or that entry into a confined space presents unique dangers.

**4.2. Safety Devices.** Recognize that identifying and installing proper safety devices is a necessary and unavoidable cost of doing business. Many accidents are the result of cutting corners, ignoring known safety devices so that things can be done faster and more cheaply. Railings are not installed, safety harnesses and tethers are avoided, trench walls are not shored and braced, respirator protection is not provided, barricades around machines are absent, and so on. Omitting these devices is a false economy; the cost, both in financial and personal terms, of even a single fatality or serious injury will far exceed any expected savings from the omission. OSHA standards provide much useful information about what precautions must be taken and what devices should be used.

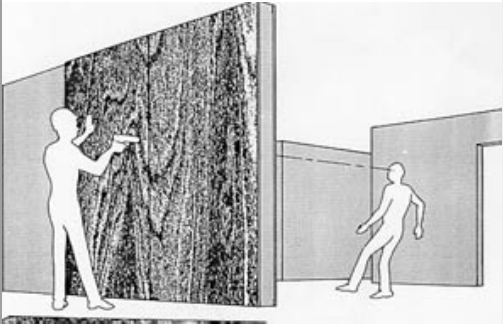
**4.3. Supervision and Enforcement.** Recognize that monitoring workers' compliance with safety rules—and enforcement of the rules, when compliance is lacking—is a necessary and unavoidable cost of doing business. In the absence of monitoring and enforcement, training and safety devices may be ineffective and a waste of time and money.

## 5. Notes on Reading the Accident Summaries.

**5.1.** OSHA standards have changed over the years, and the current standards at <http://www.osha.gov/> should be consulted before using the accident summaries below for training. Similarly, many of the contact addresses and reference citations may not be current, and a visit to the OSHA website is highly advised.

**5.2.** OSHA states that all Fatal Facts cases were selected “as being representative of fatalities caused by improper work practices. No special emphasis or priority is implied nor is the case necessarily a recent occurrence. The legal aspects of the incident have been resolved, and the case is now closed.” The numbering of the Accident Summaries below corresponds to the numbering used on OSHA’s website.

### ACCIDENT SUMMARY No. 2

Accident Type:	Struck by Nail	
Weather Conditions:	N/A	
Type of Company:	General Contractors	
Size of Work Crew:	17	
Union or Non-union:	Union	
Worksite Inspection?	No	
Designated Competent Person on Site?	No	
Employer Safety and Health Program?	No	
Training and Education for Employees?	No	
Craft of Deceased Employee(s):	Carpenter	
Age;Sex	22; Male	
Time of the Job:	3:00 p.m.	
Time at the Task	Unknown	

### BRIEF DESCRIPTION OF ACCIDENT

A carpenter apprentice was killed when he was struck in the head by a nail that was fired from a powder actuated tool. The tool operator, while attempting to anchor a plywood form in preparation for pouring a concrete wall, fired the gun causing the nail to pass through the hollow wall. The nail travelled some twenty-seven feet before striking the victim. The tool operator had never received training in the proper use of the tool, and none of the employees in the area were wearing personal protective equipment.

## ACCIDENT PREVENTION RECOMMENDATIONS

1. Institute a program for frequent and regular inspections of the job site, materials, and equipment by a competent person(s) (1926.20(b)(2)).
2. Require employees exposed to the potential hazards associated with flying nails to use appropriate personal protective equipment. (1926.100(a) and 1926.102(a)(1)).
3. Train employees using powder actuated fasteners on the proper operation of the particular tool (1926.302(e)(2)).
4. Train employees on the proper use of tools and equipment, including driving into easily penetrated materials.

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